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A Repeated Cross-Sectional Study of Sympathy for Violent Radicalization in Canadian College Students

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The upsurge in violent radicalization is associated with a global increase in social inequalities and conflicts related to different markers of identity. To date, literature on the factors associated with legitimizing violence toward others is cross-sectional and does not provide information on the possible change of this phenomenon over time. Such information is necessary to design primary prevention programs that are adapted to and address a rapidly evolving social context. We use a repeated cross-sectional study design to explore the association between sociodemographic characteristics and scores on the Sympathy for Violent Radicalization Scale (SVR) in Quebec (Canada) college students at 2 times points. Results from an online survey completed by students of 6 colleges in 2015 ($n = 854$) and 2017 ($n = 702$) indicate that although overall scores on the SVR scale remained stable, there were changes in the association between age, identity, and the outcome at the two time points. Specifically, scores on the SVR were significantly higher among younger students in 2017 than in 2015. In addition, in 2017 we observed a relationship between collective identity and SVR that was not present in 2015. These results align with other recent studies in Canada and the U.S. documenting the emergence of new forms of youth politicized bullying associated with race, ethnicity, and religion. A close monitoring of the phenomenon is warranted to both better understand the impact of populist policies on the increase in hate incidents and crimes and develop programs to address these forms of violence from a public health perspective.

Public Policy Relevance Statement
Results from the present study indicate that sympathy for violent radicalization is becoming an issue at a younger age, and that this attitude is increasingly related to identity issues. These two meaningful shifts suggest that 1) staff working within education institutions with adolescents should be trained to understand the effects of the present societal context on intergroup relations and 2) educational institutions need to promote inclusive programs and policies to address the upsurge in social polarization and associated othering processes.

Structural violence affects great numbers of people in the current context of globalization (Elgar et al., 2015; Pew Research Center, 2009) and is associated worldwide with an increase in social inequalities and social conflict related to religion, culture, and other markers of identity (Bail et al., 2018; Müller & Schwarz, 2018). This social polarization is fueling specific forms of violence characterized as violent radicalization. Violent radicalization is defined as a commitment to an extremist

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ideology and involvement in violent political or social movements (Bhui, Hicks, Lashley, & Jones, 2012). Examples include acts of terrorism and hate crimes and incidents (including lone actors and school shootings). Although radical rhetoric legitimizing violence may be supported by diverse ideologies (e.g., Neo-Nazi, white supremacist, xenophobic, religious, homophobic, or gender related), the processes leading to violence are similar (McGilloway, Ghosh, & Bhui, 2015; Misiak et al., 2019; Rousseau, Ellis, & Lantos, 2017; Webber et al., 2018).

Radicalization is a dynamic, complex process that is fueled by intergroup tensions arising from political, social, and economic conflicts. It involves a shift from a moderate point of view to an extreme and rigid or uncompromising view that demands drastic societal change for the benefit of specific groups, although not necessarily through violence (Schmid, 2013). Violent radicalization associates a personal response to the complex interaction between radicalization and a host of embedded push and pull factors that drive individuals to legitimize the use of violence to achieve a group or an individual's cause (Rousseau et al., 2017). There are over 30 instruments designed to assess attitudes, opinions, and readiness to engage in acts of radicalization and extremism (Scarcella, Page, & Furtado, 2016). One of these, the Sympathy for Violent Radicalization Scale (SyfoR), measures level of endorsement of violent actions by others, theorized as a precursor and risk factor for future personal involvement in violence (Bhui, Warfa, & Jones, 2014). The rationale for using this instrument in population-level studies of violent radicalization is that it provides an opportunity to assess, and intervene, in earlier stages of the radicalization process, which may lead to respondent commitment to violent action (Bhui et al., 2014). The SyfoR was developed in consultation with an interdisciplinary team of researchers via focus groups with individuals with expertise in mental health, social science, and/or public health to identify indicators of sympathy for violent radicalization (Bhui et al., 2014). The assessment has been validated for use in England, Belgium, and Quebec (Bhui et al., 2014; Frounfelker et al., 2019).

Literature on violent radicalization is on the rise, with a multiplication of studies on this topic after 9/11 (Kundnani, 2012). It is not possible at this point, however, to fully distinguish the increase in the use of the concept from the evolution of this social and psychological phenomenon per se. In the last few years, there has been a sharp increase not only in mass shootings (Gould & Olivares, 2017; Kissner, 2016; Silver, Simons, & Craun, 2018) but also in hate crimes and incidents throughout the world and in Canada (ADL Fighting Hate for Good, 2019; Gaudet, 2018; U.S. Department of Justice, 2017).

Three main factors may explain this increase in the ideological legitimation of violence: (1) The upsurge in populist political positions that unite people around collective identities portrayed as threatened (Rousseau et al., 2019). From 2015 to 2018, the world context evolved with the election of president Trump in the U.S., the upsurge of the extreme right movements in North America, South America, and Europe, and the multiplication of attacks associated with violent extremism associated with the threatened White man predicament (ADL Fighting Hate for Good, 2019). In Quebec, a mosque attack in January 2017 shattered the relations between the majority and the Arab–Muslim communities. Simultaneously, the massive arrival of asylum seekers fleeing the new migratory decrees in the U.S. fueled xenophobia in Canada and resulted in an increase in hate crimes and incidents (Normandin, 2017). (2) The widespread exposure to radical violent online content, associated with an increase both in extremist attitudes and in actual numbers of violent acts (ADL Fighting Hate for Good, 2019; Bail et al., 2018; Hassan et al., 2018; Müller & Schwarz, 2018). And (3) contagion phenomena (rapid increase in similar attacks) and copycat effects (imitation of a behavioral pattern independent of time) associated with massive media coverage of violent radicalization events (and school shootings).

The association between social transformation and extreme behaviors is not new. The relationship between population-level social factors and suicide rates is well documented. Rapid changes in social structures, values, economic turmoil, and social isolation shatter social cohesion and interact with individual risk factors and media reporting phenomenon to increase suicide risk (Turecki & Brent, 2016). Similar dynamics involving social disparities, low social cohesion, and a sense of injustice in interaction with individual characteristics may be at stake in the field of violent radicalization, but need to be confirmed by empirical studies (Misiak et al., 2019).

This raises important questions for action as the social context keeps evolving. Primary prevention needs to target the risk and protective factors associated with sympathy for violent radicalization (SVR) beliefs, attitudes, and actions through a public health framework (Eisenman & Flavahan, 2017). Although SVR is not linearly associated with committing violent acts, understanding shifts in attitudinal determinants of SVR as a function of changes in the social context is key to adapt primary prevention initiatives accordingly. However, to our knowledge, there are no studies documenting population-level changes in magnitude of SVR over time and associated sociodemographic risk and protective factors.

In terms of primary prevention, schools and colleges may play a key role (Davies, 2016; Sklad & Park, 2017; Stephens, Sieckelinck, & Boutellier, 2019). Indeed, most young people attend school and colleges, which have been reported as important radicalization vectors and recruitment sites (Home Affairs Committee, 2013). Recent evidence shows that 75% of lone-actor terrorists in the U.S. and Europe received postsecondary education (Gill, Horgan, & Deckert, 2014) and that a significant number of Canadian extremists were studying at a college or university when they decided to go to Syria (Bastug, Douai, & Akca, 2018).

In 2015–2016, a survey of college students in Quebec documented social and psychological determinants of SVR using the Sympathy for Violent Radicalization Scale (SyfoR). Results showed that depression mediated the effects of discrimination and exposure to violence on SVR, suggesting that in this setting youth suffering from depression, who are also victims of social adversity, are more vulnerable to radical ideas that legitimize violence (Rousseau et al., 2018). These findings align with empirical findings in other countries that also highlight the role of depression and social grievances in SVR (Bhui, Silva, Topciu, & Jones, 2016). Contrary to popular beliefs, first- and second-generation immigrants did not express more SVR than their mainstream peers, and religiosity had a protective moderating role as opposed to being a predictor of SVR.

In terms of collective identity, a negative perception of one's group representation in the public sphere, measured as public self-esteem, was associated with high levels of SVR. Critically, the importance of collective identity for youth personal identity had a

nonlinear relationship to SVR: Although a comfort with one's collective identity was protective, a strong centration on a single collective identity (i.e., high scores on importance of collective identity to personal identity scale) legitimized violence toward out group individuals (Rousseau et al., 2019). These results emphasized the delicate role of collective identity in the present social context. While, in line with social identity theory, a strong collective identity appeared to be a source of rootedness and strength for youth (Hogg, 2014), the predominance of a single identity could become a source of conflict, legitimizing violence toward dehumanized others (Bibeau, 2015).

Of importance, collective identity issues have become increasingly present in the public sphere in recent years. For instance, a U.S. survey on the impact of the 2016 presidential election in schools describes the upswing in disturbing hate incidents and the emergence of new expressions of politicized bullying targeting racial, ethnic, and religious identities (Southern Poverty Law Center, 2016). In Europe, the new name of the extreme right coalition at the European parliament, Identity and Democracy, illustrates this predicament, which typically opposes mainstream identities and minority identities, targeting both migrants and refugees, but also Jews as traditional figures of the threatening Other (Euronews, June 13, 2019). In Quebec, this phenomenon has fueled a heated debate around a new legislation prohibiting religious signs for teachers in education institutions as a measure to protect secularity and defend national identity (Rousseau et al., 2019).

The aim of this article is to assess the association between sociodemographic and psychosocial characteristics and SVR in a cross-sectional sample of college students in Quebec at two time points (2015 and 2017) to identify changes, if any, in risk and protective factors for SVR. The study addressed the following questions:

1. Is there a change in level of SVR in Quebec college students from 2015 to 2017?
2. What are, if any, the changes in the risk and protective factors identified in 2015?
3. What are, if any, the changes in the relation between SVR and its predictors from 2015 to 2017, and in particular, because of the growing importance of identity discourses in the public spaces, are there any changes in the importance of public self-esteem and collective identity importance for personal identity in predicting SVR?

Method

Participants

Students were recruited across six colleges located in different areas of Quebec, Canada. Overall, 3,454 youths participated in the survey. Of these, 1,556 youths had complete data on our main outcome of interest (SyfoR) in either phase 1 or 2 and were thus retained for analyses (see section on data analysis). Among them, 854 youths completed the survey in 2015 (phase 1), and 702 in 2017 (phase 2). Participants' sociodemographic characteristics are presented in Table 1.

Procedure

Data for phase one and two were collected in 2015 and 2017, respectively. Researchers established partnerships with colleges across Quebec (Canada). The research project was presented as a study on adaptation to the current social context in Quebec. Participants were eligible to participate in the study if they were registered as a full-time student in one of the participating colleges. Students participated by completing an online questionnaire that was uploaded on the intranet portal of each college. They were informed that their involvement was voluntary and that their responses would be confidential. The questionnaire was available in both French and English, and students were free to select the preferred language. Response rates varied across colleges, ranging from 2% to 19%. The research ethic board of each institution gave ethics approval prior to data collection. The study protocol and procedures were approved by the Ethics Committee of the Centre Intégré Universitaire de Santé et de Services Sociaux du Centre-Ouest-de-l'^Ile-de-Montréal (CIUSSS-CODIM).

Measures

Sympathy for violent radicalization. A modified version of the SyfoR (Bhui et al., 2014) was used to assess support for violent radicalization. Participants were asked to rate their degree of sympathy or condemnation of nine acts of protest ranging from nonviolent (e.g., take part in nonviolent political protests) to progressively more extreme/violent acts (e.g., use of bombs or weapons to fight against injustice) on a scale ranging from 1 (i.e., completely condemn) to 7 (i.e., completely sympathize). All items were summed to get a total score (excluding the nonviolent protest item), with higher scores indicating greater sympathy for violent radicalization. Cronbach's alpha for this subscale in our sample was 0.88.

Exposure to violence. Students' exposure to violence was investigated via three questions used in the Enquête Santé Québec on Cultural Communities (Rousseau & Drapeau, 2002), a survey conducted by the Quebec government to assess the mental health and adaptation of cultural communities in Quebec. Participants were asked (yes/no response format) whether 1) they witnessed or experienced acts of violence in relation to a social and/or political context; 2) they had a personal experience of persecution; and 3) they witnessed or experienced violent events involving someone close (e.g., family, friend). Participants who answered yes to at least one of the questions were categorized as exposed to violence.

Perceived discrimination. The Perceived Discrimination scale (Noh, Beiser, Kaspar, Hou, & Rummens, 1999) is a self-report questionnaire that documents the experience of structural discrimination in eight domains of life (i.e., employment, workplace, housing, academic, public services, health services, social services, and justice system). Participants were asked if they experienced discrimination in any of the selected eight domains of life and invited to answer in a dichotomous format (i.e., yes/no response). According to their answers, students were assigned to one of two groups: 1) those who experienced discrimination in at least one of the domains (i.e., at least one yes response), and 2)

Table 1. *Characteristics of the Study Population*

Characteristic	*n* (%) Phase 1 (*n* = 854)	*n* (%) Phase 2 (*n* = 702)	*p*-value
Age			0.02
16–18 years	292 (34%)	277 (40%)	
19–21 years	316 (37%)	228 (32%)	
22–24 years	92 (11%)	54 (8%)	
≥25 years	154 (18%)	138 (20%)	
Missing	—	5	
Sex			0.007
Men	260 (30%)	257 (37%)	
Women	593 (70%)	439 (63%)	
Missing	1	6	
Language			0.33
French	623 (73%)	503 (73%)	
English	16 (2%)	21 (3%)	
Both	213 (25%)	169 (24%)	
Missing	2	9	
Immigration status			<.001
≥Third generation	590 (71%)	433 (62%)	
Second generation	121 (14%)	106 (15%)	
First generation	125 (15%)	157 (23%)	
Missing	18	6	
Religion			<.001
None	467 (58%)	409 (59%)	
Christianity	277 (35%)	229 (33%)	
Islam	38 (5%)	46 (6%)	
Other	14 (2%)	12 (2%)	
Missing	58	6	
Experience of violence			0.06
No	473 (55%)	349 (51%)	
≥1 experience of violence	380 (45%)	341 (49%)	
Missing	1	12	
Discrimination			
≥1 experience of discrimination	329 (39%)	261 (37%)	0.55
Missing	8	4	
Depression (cutoff)			0.01
<1.75	473 (63%)	359 (57%)	
≥1.75	274 (37%)	275 (43%)	
Missing	107	68	
Anxiety (cutoff)			0.08
<1.75	561 (71%)	441 (67%)	
≥1.75	230 (29%)	220 (33%)	
Missing	63	41	
Social support (median)			0.82
≤ 22	429 (51%)	330 (51%)	
> 22	409 (49%)	322 (49%)	
Missing	16	50	
Public self-esteem			0.08
≤18	470 (59%)	338 (54%)	
>18	332 (41%)	289 (46%)	
Missing	52	75	
Importance to identity			0.02
≤ 3	437 (54%)	378 (60%)	
>13	371 (46%)	259 (40%)	
Missing	46	65	
Colleges			<.001
College 1	124 (14%)	33 (5%)	
College 2	316 (37%)	55 (8%)	
College 3	20 (2%)	108 (15%)	
College 4	212 (25%)	152 (22%)	
College 5	39 (5%)	317 (45%)	
College 6	143 (17%)	37 (5%)	
Missing	—	—	

those who did not report discrimination in any domain (i.e., all no responses).

Depression and anxiety. Psychological distress was assessed with the Hopkins Symptom Checklist-25 (HSCL-25; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), a widely used self-report questionnaire that consists of 25 items describing symptoms of anxiety (10 items) and depression (15 items). Participants are asked to rate on a Likert scale from 1 (i.e., *not at all*) to 4 (i.e., *extremely*) how much they were bothered by symptoms of anxiety and depression during the past week. Symptom severity is computed by averaging responses separately on the anxiety and depression subscales (range: 1–4), with scores of 1.75 and above indicating severe distress. This measure is validated for use in multiple countries and languages, showing strong measurement invariance across populations and good internal consistency across translated versions (Kleijn, Hovens, & Rodenburg, 2001; Wind, van der Aa, de la Rie, & Knipscheer, 2017). Cronbach alphas in our sample were 0.88 and 0.93 for anxiety and depression scales, respectively.

Social support. Students completed a short version of the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988). It is a 12-item self-report questionnaire aimed at assessing perceived social support from significant others, family, and friends. The response options were scored from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Responses to items within each of the subscales (significant others, family, friends) were summed to derive a total subscale score. Scores on all items were summed to obtain a composite scale score (i.e., global perceived social support). Higher scores indicated higher levels of perceived social support. This instrument presents good transcultural psychometric properties (Aroian, Templin, & Ramaswamy, 2010). For the purpose of this study, a total score obtained by summing the social support from family and friends scales (4 items) was used (α = .79).

Collective self-esteem. Students' collective self-esteem was evaluated by means of the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992), which is designed to measure individual perception of the importance of group identity in different domains. This scale consists of 16 items rated on a six-point Likert scale (1 = *completely disagree*, to 6 = *completely agree*). It measures collective self-esteem in four subscales of four items each: importance to identity (i.e., how important the belonging to a social group is for one's identity), membership self-esteem (i.e., value attributed to the self as a member of a social group), public collective self-esteem (i.e., value attributed from others to one's social group), and personal self-esteem (i.e., how the person values

his or her own social group). Items in each subscale were summed to derive a total score. This scale has good internal validity with adolescent and adult samples in transcultural contexts(Rahimi & Rousseau, 2013). For the purpose of this study, students were administered the importance to identity ($\alpha = .74$) and public collective self-esteem ($\alpha = .82$) subscales. These two subscales were selected in light of the literature on radicalization and identity issues, emphasizing the crucial role of investment on one's identity and of the way the majority look at one's group, often referred to as ostracism when this view is negative (Hogg, 2014; Rousseau et al., 2019).

Sociodemographic variables. Participants answered specific questions on their sociodemographic background, providing information on their age (i.e., 16–18, 19–21, 22–24, and ≥25 years), gender (i.e., man vs. woman), religious beliefs (i.e., Christian, Muslim, Other religions, and Nonreligious), generational status (i.e., first generation, second generation, and third generation and above), college (i.e., from 1 to 6), and preferred language (French, English, both).

Data Analysis

A preliminary screening check on all participants' responses indicated a significant proportion of participants with missing data. After exploratory analyses, only those participants who replied to all items of our main outcome measure (SyfoR) were included. The SyfoR was situated at the end of the online survey, and this allowed us to remove participants who did not complete the survey until the end and to reduce the amount of missing data. Results from sensitivity analyses indicated that the selected participants did not differ from the excluded ones on the available information provided. Descriptive information for the sample was summarized using counts and proportions for categorical variables, separately for each phase. We used chi-square tests to examine differences in the variables of interest according to phase.

We first ran a confirmatory factor analysis on the SyfoR items using a diagonally weighted least-squares method. A single latent variable model showed a good fit according to Cheung and Rensvold (2002) criteria ($\chi^2 = 73{,}001.604$ (28, $n = 1556$), $p < .001$; TLI = .997; CFI = .998; RMSEA = .075). Next, we extracted factor scores of the SyfoR latent function and included these scores as the outcome of interest in the subsequent descriptive and multivariable models.

Second, we assessed univariate associations between risk and protective factors and SyfoR, in the overall sample and in the sample stratified by phase. For these univariate associations, continuous scores of depression and anxiety were dichotomized according to the clinical cut-off of 1.75. Scores of social support, importance to identity, and public self-esteem were dichotomized at the median.

Next, we used linear mixed-effects models to test the contributions of sociodemographic, risk, and protective factors to SVR, while adjusting for the phase, and accounting for the clustered nature of the data (i.e., students nested within colleges). In this model, scores of depression, anxiety, social support, importance to identity, and public self-esteem were standardized to a mean of 0 and a standard deviation of 1 to interpret coefficients directly as effect sizes (% *SD* increase in SVR in relation to a 1-*SD* increase in the predictor). Subsequently, we investigated whether the associations between predictors and scores on the SyfoR changed between phase 1 and 2. For this purpose, we ran a series of models using multiplicative interactions between phase and each predictor of SyfoR one at a time by adding product terms to the model for the interaction being evaluated (e.g., sex × phase). Final models assessed the relationship between importance to identity and public self-esteem using generalized additive models (GAMs; Wood, 2011) with penalized smoothing regression splines. Results are presented in figures, and interpretation relied on visual inspection of the plots of smoothed data as no standard coefficients were available.

All multivariable models were run on multiply imputed data sets. We imputed missing data using multiple imputations by chained equations, an approach that specifies the multivariate imputation model on a variable-by-variable basis by a set of conditional densities, one for each incomplete variable (van Buuren & Groothuis-Oudshoorn, 2011). We specified an adequate number of iterations ($n = 10$; White, Royston, & Wood, 2011). Mean estimates were calculated from the 10 imputed data sets, and variances were computed using Rubin's rules taking into account the within- and between-imputation variance (Rubin, 2004). All analyses were performed using the lme4 (Bates, Maechler, Bolker, & Walker, 2010), lavaan, mgcv (Wood, 2011), and mice (van Buuren & Groothuis-Oudshoorn, 2011) packages in R software (R Development Core Team, 2017). The threshold for statistical significance was set to 0.05 (two-sided tests).

Results

Descriptive statistics are reported in Table 1. In both phases, students were predominantly female, French speaking, under the age of 22, without a religion, and of third-generation status (i.e., born in Canada from Canadian-born parents). However, there were more men, first-generation students (i.e., born outside of Canada), and students identifying as Muslim or Christian in phase 2 than in phase 1. In addition, there were more students aged between 16 and 18 and fewer aged between 19 and 21 in phase 2 compared to phase 1. There were no differences in exposure to violence and discrimination between the two phases. Almost half of both samples were exposed to violence; almost 40% of students reported discrimination in at least one domain of life, with approximately a quarter of them experiencing discrimination at school. Of importance, 43% of students scored above the cut-off for depression in phase 2, a significant increase from phase 1 (39%). No significant changes in levels of social support were found, but we observed a significant decrease in scores on the importance to identity scale. The distribution of participants varied also significantly across colleges from phase 1 to phase 2.

Univariate associations between study variables and SVR were similar in the overall sample and across phases. There was an association between age, gender, generation status, and religion and SyfoR scores. Younger students, men, and individuals who identified as second- or third-generation status had higher scores on the SyfoR than older students, females, and first-generation students. Religion was also associated with the outcome, with those identified as Muslim or Christian having lower scores compared to those with no religion or professing other minor religions. Individuals reporting more social support and lower depression

scores were associated with lower SVR. Exposure to violence was associated with SVR in the overall sample and in phase 1, but not in phase 2. However, the estimated effect in phase 2 was similar to that in phase 1 (see Table 2).

In the multivariate model, in line with results from univariate analysis, no significant main effect of phase emerged (see Table 3). Age, gender, generation, and religious beliefs were all significantly associated with SVR. Specifically, older students (25 years old and older), women, first-generation immigrants and students professing Islam or Christianity were all at lower risk of SVR. In line with the univariate results, higher depression and exposure to violence were also associated with higher SyfoR scores. In contrast with the univariate results, importance to identity was associated with SyfoR scores, in that those reporting greater importance to identity had higher SyfoR scores.

Last, multivariate phase-stratified analysis on the associations between our variables of interest and SVR (see Table 4) showed a statistically significant interaction effect of age and phase on SyfoR scores. Specifically, students older than 22 in phase 2 were at a significantly lower risk of SVR compared to their younger

Table 2. *Univariate Associations Between SVR and Important Characteristics, Stratified by Phase*

Characteristic	All			Phase 1			Phase 2		
	n	*M* (*SE*)	*p*-value	*n*	*M* (*SE*)	*p*-value	*n*	*M* (*SE*)	*p*-value
Phase	1556		0.94	—		—	—		—
Phase 1		0.025 (0.03)			—			—	
Phase 2		0.021 (0.04)			—			—	
Age	1551		<.001	854		<.001	697		<.001
16–18 years		0.11 (0.03)			0.06 (0.05)			0.16 (0.05)	
19–21 years		0.14 (0.04)			0.10 (0.05)			0.20 (0.06)	
22–24 years		0.08 (0.07)			0.22 (0.09)			−0.16 (0.13)	
≥25 years		−0.40 (0.06)			−0.32 (0.07)			−0.50 (0.08)	
Sex	1549		<.001	853		<.001	696		<.001
Men		0.22 (0.04)			0.26 (0.06)			0.18 (0.06)	
Women		−0.08 (0.03)			−0.08 (0.03)			−0.08 (0.04)	
Language	1545		0.12	852		0.51	693		0.14
French		0.00 (0.03)			0.01 (0.03)			−0.03 (0.04)	
English		0.25 (0.19)			0.27 (0.22)			0.23 (0.29)	
Both		0.07 (0.05)			0.04 (0.06)			0.12 (0.07)	
Immigration status	1532		<.001	836		<.001	696		0.03
First generation		−0.23 (0.06)			−0.33 (0.08)			−0.14 (0.09)	
Second generation		0.17 (0.06)			0.18 (0.09)			0.15 (0.08)	
≥Third generation		0.07 (0.03)			0.07 (0.03)			0.05 (0.04)	
Religion	1492		<.001	796		<.001	696		<.001
None		0.15 (0.03)			0.14 (0.04)			0.17 (0.05)	
Christianity		−0.22 (0.04)			−0.20 (0.05)			−0.24 (0.06)	
Islam		−0.22 (0.11)			−0.32 (0.15)			−0.14 (0.17)	
Other		0.44 (0.24)			0.16 (0.27)			0.76 (0.41)	
Experience of violence	1543		0.02	853		0.03	690		0.25
No		−0.03 (0.03)			−0.03 (0.04)			−0.02 (0.05)	
≥1 experience of violence		0.08 (0.03)			0.10 (0.05)			0.07 (0.05)	
Discrimination	1544		0.79	846		0.67	698		0.41
No		0.04 (0.03)			0.02 (0.04)			0.05 (0.04)	
≥1 experience of discrimination		0.02 (0.04)			0.05 (0.05)			−0.01 (0.06)	
Depression (cutoff)	1381		0.002	747		0.02	634		0.05
≤1.75		−0.04 (0.03)			−0.04 (0.04)			−0.04 (0.05)	
>1.75		0.12 (0.04)			0.11 (0.05)			0.12 (0.06)	
Anxiety (cutoff)	1452		0.09	791		0.24	661		0.22
≤1.75		−0.01 (0.03)			0.00 (0.04)			−0.01 (0.04)	
>1.75		0.08 (0.04)			0.08 (0.06)			0.08 (0.06)	
Social support (median)	1490		<.001	838		0.008	652		0.007
≤22		0.11 (0.03)			0.10 (0.04)			0.12 (0.05)	
>22		−0.07 (0.03)			−0.06 (0.04)			−0.08 (0.05)	
Public self-esteem (median)	1429		0.22	802		0.53	627		0.24
≤.25		0.06 (0.03)			0.03 (0.04)			0.11 (0.05)	
>.25		0.00 (0.03)			−0.01 (0.04)			0.02 (0.05)	
Importance to identity	1545		0.80	808		0.34	637		0.15
≤.10		0.04 (0.03)			0.05 (0.04)			0.01 (0.04)	
>.10		0.05 (0.04)			−0.01 (0.05)			0.13 (0.06)	
Total	1556	0.023 (0.03)	—	854	0.025		702	0.021	

Note. SVR = Sympathy for Violent Radicalization Scale.

Table 3. *Predictors of SVR*

SVR	Estimate	[95% CI]	*p*-value
Phase			
Phase 1	Ref	—	—
Phase 2	−0.02	[−0.11, 0.07]	0.67
Social support score	−0.02	[−0.07, 0.03]	0.47
Depression score	0.12	[0.04, 0.19]	0.002
Experience of violence			
No	Ref	—	—
≥1 experience of violence	0.10	[0.01, 0.19]	0.03
Anxiety score	−0.03	[−0.10, 0.04]	0.39
Importance to identity	0.06	[0.01, 0.10]	0.01
Public self-esteem	0.00	[−0.05, 0.04]	0.82
Age			
16–18 years	Ref	—	—
19–21 years	0.01	[−0.09, 0.11]	0.87
22–24 years	−0.07	[−0.22, 0.09]	0.41
≥25 years	−0.48	[−0.61, −0.36]	<.001
Sex			
Men	Ref	—	—
Women	−0.34	[−0.44, −0.25]	<.001
Religion			
None	Ref	—	—
Christianity	−0.31	[−0.41, −0.21]	<.001
Islam	−0.30	[−0.51, −0.09]	0.005
Other	0.19	[−0.16, 0.54]	0.30
Immigration status			
≥Third generation	Ref	—	—
Second generation	0.07	[−0.06, 0.20]	0.30
First generation	−0.12	[−0.25, 0.00]	0.05
Language			
French	Ref	—	—
English	0.15	[−0.13, 0.44]	0.30
Both	0.04	[−0.07, 0.14]	0.49

Note. SVR = Sympathy for Violent Radicalization Scale. Importance to identity and public self-esteem were introduced one at a time in the models.

peers, whereas in phase 1 students aged between 22 and 24 years were at the highest risk of SVR. As regards depression, higher scores were significantly associated with higher SyfoR scores in phase 2, with an equal although nonsignificant effect in phase 1. The association between importance to identity and SyfoR changed from being nonsignificant in phase 1, to being statistically significant in phase 2, but this was mainly driven by the nonlinear relationship in phase 1 as seen from the GAM analyses. As can be seen in Figures 1 and 2, the association between importance to identity and SyfoR exhibited a nonlinear shape in phase 1. with increases in SyfoR scores observed at levels above 1 *SD* from the mean of importance to identity scores, whereas this association exhibited a linear relationship in phase 2.

Discussion

Overall, results indicate that levels of SVR as reported by college students in Quebec have not changed from 2015 to 2017. Given the observed local increase in hate crimes and incidents during the same period, linked to the arrival of asylum seekers (Service de police de la Ville de Montréal, 2018) and social turmoil that resulted both from the deadly mosque attack in Quebec and from the debate on religious signs in the education institutions, this can be considered somewhat reassuring for the government and mental health professionals. During the same period, the recruitment impact of ISIS was reduced and youth stopped going to fight in Syria and Iraq. However, some education and health professionals have misinterpreted these facts to mean that violent radicalization is no longer an issue. This is not what the data are telling us: Although SVR levels are not on the rise, they remain stable and should not be underestimated. A short-term reduction in political or media visibility regarding violent radicalization does not imply that the larger social polarization phenomenon nor the social attitudes toward radicalization are decreasing; historical accounts of these social trends suggest that they may last much longer (Sémelin, Andrieu, & Gensburger, 2008).

In terms of changes in risk and protective factors between 2015 and 2017, the percentage of youth reporting depressive symptoms above the clinical cut-off on the HSCL-25 increased from 37% to 43%. This significant increase is in line with a large national survey of psychological distress in high school youth in Quebec showing that from 2011 to 2017, the percentage of students reporting a high level of psychological distress increased from 20.8% to 29.3%, affecting both genders and all age groups (Institut de la statistique Québec, 2018). In the national survey, the sharp increase in psychological distress was associated with variables reporting a concomitant increase in poverty and instability for the youths' families. The persistent association between SVR and depression suggests that the uncertainties and social instability in the present social context may be associated not only with feelings of helplessness and hopelessness, but also with feelings of anger that may find a voice in the radical rhetoric of extremist organizations. Webber et al. (2018) demonstrated how loss of personal significance, associated with a sense of uncertainty, can push individuals to seek certainty in extremist ideologies as a way to restore one's personal significance. This finding is also in line with Hogg's uncertainty-identity theory, which posits that people are motivated to reduce feelings of uncertainty about their life and their self. Such uncertainty can activate feelings of depression or anger, and extremist ideologies offer a solution by introducing meaning and purpose in life (Hogg, 2014; Hogg, Kruglanski, & van den Bos, 2013). Our results suggest that youth psychological distress and depression should be a priority for prevention programs.

Regarding sociodemographic factors, results reveal that within colleges, the peak age for reporting higher levels of SVR shifted from 22−24 years in 2015 to 19–22 years in 2017. In a longitudinal analysis of the jihadist phenomena in the Middle East, Harris-Hogan and Barrelle (2018) documented the same trend: Youth under investigation dropped a decade in age over only a few years' time period. In the literature, this increased involvement of adolescents is attributed to the rise in the use of social media and the influence of ISIS (Campelo, Oppetit, Neau, Cohen, & Bronsard, 2018; Dawson & Amarasingam, 2017). In the case of the present study, given the declining influence of ISIS from 2015 to 2017, this second explanation is unlikely. It also speaks to the relative lack of attention that extreme right violent groups have received both in the news and in the scientific literature as compared to ISIS or Al-Qaeda. In 2018 and 2019, the anti-Semitic and Islamophobic attacks of Pittsburgh in the United States and in Christchurch (New Zealand) have shattered this denial, and

Table 4. *Phase-Stratified Associations Between Predictors and SVR*

	Phase 1			Phase 2			
SVR	β	[95% CI]	*p*-value	β	[95% CI]	*p*-value	*p*-interaction
Social support score	−0.01	[−0.14, 0.13]	0.93	−0.02	[−0.09, 0.05]	0.52	0.86
Depression score	0.12	[−0.03, 0.27]	0.13	0.12	[0.03, 0.20]	0.007	0.99
Experience of violence							0.85
No	Ref	—	—	Ref	—	—	
≥1 experience of violence	0.08	[−0.19, 0.35]	0.57	0.11	[−0.02, 0.25]	0.09	
Anxiety score	−0.04	[−0.18, 0.11]	0.63	−0.03	[−0.11, 0.06]	0.52	0.93
Importance to identity	−0.04	[−0.18, 0.10]	0.54	0.09	[0.03, 0.15]	0.003	0.12
Public self-esteem	0.01	[−0.13, 0.15]	0.90	−0.01	[−0.08, 0.06]	0.77	0.83
Age							0.006
16–18 years	Ref	—	—	Ref	—	—	
19–21 years	0.10	[−0.22, 0.41]	0.54	−0.02	[−0.17, 0.14]	0.84	0.58
22–24 years	0.53	[0.06, 1.01]	0.03	−0.32	[−0.57, −0.07]	0.01	0.009
≥25 years	−0.08	[−0.45, 0.30]	0.70	−0.63	[−0.81, −0.45]	<.001	0.03
Sex							0.82
Men	Ref	—	—	Ref	—	—	
Women	−0.41	[−0.69, −0.12]	0.005	−0.32	[−0.46, −0.19]	<.001	
Religion							0.62
None	Ref	—	—	Ref	—	—	
Christianity	−0.28	[−0.57, 0.02]	0.07	−0.32	[−0.46, −0.18]	<.001	0.84
Islam	−0.36	[−0.99, 0.27]	0.26	−0.28	[−0.56, −0.01]	0.04	0.84
Other	−0.63	[−1.71, 0.46]	0.26	0.50	[0.00, 1.00]	0.05	0.11
Immigration status							0.08
≥Third generation	Ref	—	—	Ref	—	—	
Second generation	0.07	[−0.32, 0.45]	0.74	0.07	[−0.11, 0.26]	0.45	0.98
First generation	−0.48	[−0.86, −0.11]	0.01	−0.01	[−0.18, 0.16]	0.92	0.04
Language							0.09
French	Ref	—	—	Ref	—	—	
English	0.40	[−0.54, 1.34]	0.40	0.09	[−0.29, 0.46]	0.65	0.59
Both	−0.26	[−0.57, 0.05]	0.10	0.15	[−0.01, 0.30]	0.06	0.05

Note. SVR = Sympathy for Violent Radicalization Scale.

brought to light how mainstream identities are under threat by White supremacist groups (Adamczyk, Gruenewald, Chermak, & Freilich, 2014; Allievi, Ferrara, Kaul, & Rasmussen, 2012; Feddes, Mann, & Doosje, 2015; Galtung, 1990; Gómez, Morales, Hart, Vázquez, & Swann, 2011). Our results thus constitute an invitation to stop focusing primarily on religious radicalization and consider more diverse forms of extremism that feed the violent radicalization phenomenon.

In line with the social media hypothesis, an additional explanation may be that teenagers and youth are increasingly exposed and attracted to extreme discourses linking violence, death, suicide, and a glorification of serial and mass killers. The rise in Black Tourism illustrates this new youth culture (Podoshen, Venkatesh, & Jin, 2014). In the field of violent radicalization, an analysis of ISIS's use of horror in propaganda (Venkatesh, Podoshen, Wallin, Rabah, & Glass, 2018) revealed that extremist organizations, in order to attract youth, build on this youth-directed consumer culture in which abjection and dystopia are marketed in ways similar to violence and pornography in cinemas of attractions, mobilizing intense affects. In Quebec, youth mental health clinical teams have noticed an increase in schools' reports of incidents involving young adolescents' fascination for mass killings. This has also been documented in the U.S., leading to discussion about the eventual destruction of Columbine High School to prevent its transformation into a memorial honoring serial killers (Jones, Jackson, & Sancehz, 2019). On one hand. these trends may be associated with the well-established contagion and imitation effects related to media coverage of these events (Lankford & Madfis, 2018; Paton, 2018). On the other hand, these discourses may also represent a shift in youth "idioms of distress," becoming new ways of experiencing and showing one's suffering in a time of media broadcasting of oneself. This certainly deserves future clinical and research attention (Campelo et al., 2018; Schils & Pauwels, 2016).

The transformation of the nonlinear relationship between collective identity and SVR in 2015—with increases in SVR scores only apparent at very high levels of importance to identity scores—to a strong, linear relationship with no apparent cut-off in 2017, is noteworthy. At the local level (Quebec society), this finding suggests a growing importance of identity-related issues in violence among youth. This is aligned with results of a large-scale study documenting the evolution of school violence (elementary and high school) from 2013 to 2017 (Beaumont, Leclerc, & Frenette, 2018). Beaumont et al. (2018) found that, over this four-year period, verbal and physical violence decreased in the school environment. However, violence associated with interethnic tensions significantly increased in elementary and high schools, as reported by youth, parents, and school staff. This suggests a shift in the triggers of school-based violence and confirms that othering processes associated with negative views of

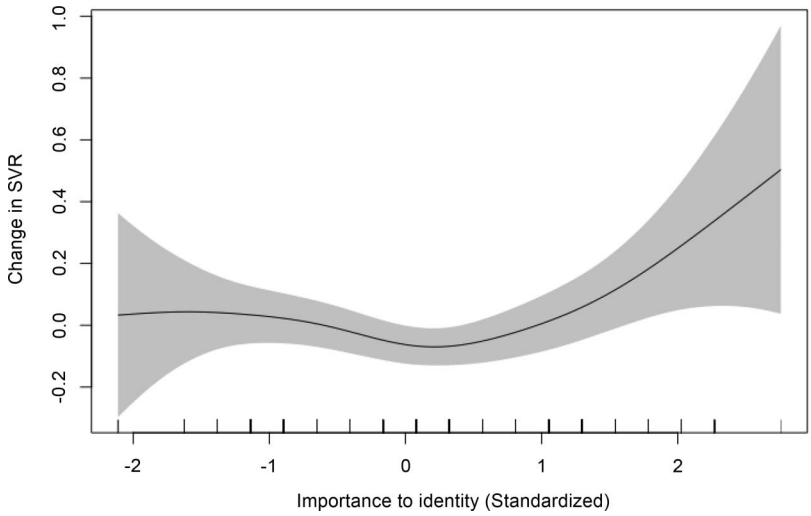

Figure 1. Relationship between Importance to Identity and Sympathy for Violent Radicalization Scale (SVR) in Phase 1.

nonmajority identities are at stake. These results may be interpreted as specific to the Quebec social dynamic: For a long time, the social tensions associated with language and religion as identity markers have been associated with the majority fear of losing its culture and identity and becoming assimilated into a North American global entity. In the last two decades, as a result of globalization, these tensions have sharply increased, with the emergence of a number of nationalistic alt-right movements, legitimizing, to a certain extent, violence toward the potentially threatening immigrants. However, the results also mirror the previously mentioned findings from a broad U.S. school survey, which reported an upswing in episodes of politicized bullying targeting racial, ethnic. and religious identities (Southern Poverty Law Center, 2016). These similar trends in Canada and the U.S. suggest that an increase in identity-centered violence, beyond local specificities, may be a global phenomenon that needs to be addressed through education policies.

Limitations

This study is unique in that it is the first attempt to investigate changes in SVR over time in a sample of students enrolled in different colleges in Canada, exploring possible shifts in associated risk and protective factors. However, there are several limitations to this work. First, the present study relied exclusively on self-reported measures. Although we used well-known validated questionnaires showing good reliability, we cannot rule out the presence in our results of some bias due to shared-method variance and self-desirability issues. Second, the wide variation in response rates, generally low, may be associated with our method of data

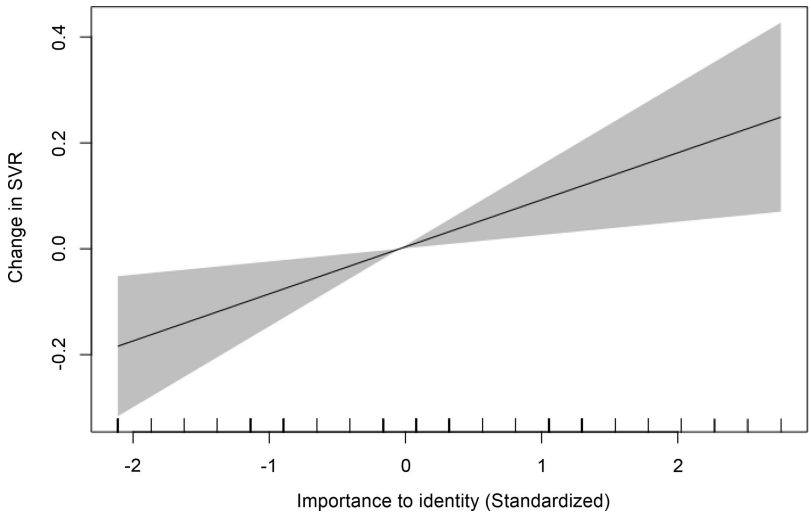

Figure 2. Relationship between Importance to Identity and Sympathy for Violent Radicalization Scale (SVR) in Phase 2.

collection (i.e., online questionnaire) and may have given rise to a potential self-selection bias, undermining the generalizability of our findings. However, given the sensitivity of the topic, the use of an online questionnaire facilitated the participation of the students who would not have been comfortable in an individual interview (Brock et al., 2015), as suggested from participants' open-ended comments. In addition, our mixed-effect models included colleges as random effects (i.e., students nested within colleges), thus allowing us to control for variability across colleges. Although our sample characteristics generally mirrored the ones of the general college student population in Quebec (e.g., age, immigrant status); see (Gaudreault, Normandeau, Jean-Venturoli, & St.-Amour, 2018), the proportion of men who participated in the study was lower than expected (30%–37% vs. 42%), which is a common phenomenon in online surveys (Sax, Gilmartin, & Bryant, 2003). Therefore, this suggests that some caution needs to be applied in the generalization of findings to the entire population of college students and replication studies are recommended.

Third, the number of missing data is another limitation of the study, and it is probably linked to both the sensitivity of the topic and the online method of recruitment. However, sensitivity analyses suggested similar observed patterns of associations from complete case analyses and multiple imputations. Fourth, our repeated cross-sectional study does not allow us to test properly how the changes observed are linked to specific social changes at the micro-, meso- and macrolevels. Longitudinal and cross-sectional studies relying on multiple comparisons across the years are needed before any firm conclusions can be drawn. Fifth, generational status was found to have an impact levels of SVR, in that second- and third-generation immigrant students reported higher levels of SVR than first-generation immigrants. Although the role of generational status was controlled for in all statistical analyses, future studies should further investigate the differential impact of experiences of discrimination and violence on SVR according to generational status. Sixth, most participants in our study were francophone. Quebec is the only francophone province in Canada, and its sociopolitical specificities (e.g., French Canadian nationalism) limit the generalization of results to the rest of Canada and to different sociopolitical contexts. Last, the three-year time span covered in our study could be considered arbitrary. However, the 2015–2017 period was characterized by many significant social and political events linked to radicalization both in North America and globally, thus justifying the interest in exploring the evolution of the phenomenon of SVR in youth. However, this does not preclude the fact that some changes in SVR and other radicalization measures may have a lagging time and may arise later in response to the social and political context.

Conclusion

A thorough knowledge of the macro-, meso- and microlevel determinants of violent radicalization is key to plan and develop effective prevention programs (Eisenman & Flavahan, 2017; Rousseau et al., 2017). Emphasizing the importance of local, cultural, and political specificities, the World Health Organization recommends a social ecological framework to study these determinants (World Health Organization, 2008). The results of this trans-sectional survey on SVR among Quebec college students confirm these positions, while also suggesting that in times of rapid social change, some determinants may shift, as was the case for age and collective identity in the present research, while others remain stable, as was the case for depression. This has important implications for action and research because it suggests that the appraisal of determinants, beyond local specificity, might also need to be regularly updated through a longitudinal monitoring, to document the rapid evolution of the phenomenon, and adapt accordingly the target and modalities of the intervention. For example, in the case of Quebec, because of the age trend observed in the present study, we have recommended to education policymakers to tighten and coordinate the prevention efforts at the end of elementary, and at the high-school and college, levels. Similarly, the results associating collective identity and SVR are presently being reflected in a Ministry of Education toolkit to encourage school and college professionals to examine how the education system can promote tolerance and respectful dialogues, allowing dissent and valuing the coexistence of a plurality of identities and of their associated divergent visions of the world.

Indications predictive of upcoming social turmoil have been accumulating in the last decade (Elgar et al., 2015; Pew Research Center, 2009). As the number of hate crime incidents in Canada rise and attacks are justified by threats to identity (Commission des droits de la personne et des droits de la jeunesse, 2019), monitoring sympathy for violent radicalization and establishing rapid feedback loops to adjust prevention policies and programs in the general population are essential.

Keywords: violent radicalizaton; Canadian youth; identity; repeated cross-sectional study; prevention

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