

RESEARCH REPORT – MARCH 2022

Living together in socially  
polarized contexts:  
Vulnerability and resilience  
in the college community

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# Introduction

This report,

***Living Together in Socially Polarized Contexts:  
Vulnerability and Resilience in the College Community,***

presents the results of research conducted by the Research and Action on Social Polarization (RAPS) team on data obtained from students in 18 Quebec colleges surveyed in 2020-2021 (see Appendix 1 for the proportion of participation by region).

Conducted during the COVID-19 pandemic, this research is the third measure of the determinants of sympathy for violent radicalization (VR) in Quebec colleges, following previous data collections that took place in 2015 and 2017. This report provides a summary of the results of this third wave of research but does not present comparative analyses with previous waves, which will follow in future publications.

# Background research

Currently, social polarization is increasing worldwide and is associated with the legitimization of various forms of violence, often referred to as violent radicalization (VR). VR is a complex phenomenon defined as a process by which the individual gradually legitimizes the use of violence as a means to achieve a specific objective for example, the objective may be political, social or religious (Schmid, 2013). Just as we see a global rise of anti-immigrant and xenophobic sentiments across Europe and North America, right-wing movements are growing in Quebec (Gagnon, 2020; Perry et Scrivens, 2015). Factors like local dynamics of exclusion of minorities and the multiplication of international conflicts relayed in real time to media consumers in the privacy of their homes contribute to increasing polarization in our societies, leading to various forms of radicalization toward violence justified by religious, ethnic, nationalist or xenophobic rhetoric (Bramadat et Dawson, 2018; King et Taylor, 2011; Theodorou, 2014). As suggested by the World Health Organization (2008), a social-ecological framework is necessary to develop effective VR prevention strategies, emphasizing the need to identify multiple levels of preventive action and tailor interventions to specific contexts.

The COVID-19 pandemic has further highlighted social and systemic inequalities and contributed to an upsurge in all forms of violence associated with hopelessness (Venkatesh et al., 2021).

The stigmatization and social exclusion of minorities is one of the consequences of this social polarization, manifested in phenomena like the wave of anti-Asian hate incidents worldwide and the demand for social justice advocated by the Black Lives Matter movement. Stressful experiences during the pandemic may also contribute to greater support for VR and have implications for schools and educational environments. For example, recent events highlight the disturbing increase in gun crimes in Montreal, often related to gang conflicts involving youth. The recent murder of a teenager in front of his school in October 2021, the armed assault of a teacher by a 16-year-old student, and similar incidents in early 2022 are concrete examples that remind us of the urgent need to address the issue of violence among youth.

In addition, recent systematic reviews of the consequences of the pandemic on youth well-being conclude that COVID-19 negatively affects their mental health and exacerbates educational disparities (Loades et al., 2020; Nearchou et al., 2020). These findings highlight the urgent need to better understand the risk and protective factors for the well-being and prevention of youth violence and to better prepare school employees to take action and intervene directly in educational settings.

To date, empirical evidence exploring the role played by the broader social context in the complex interplay of risk and protective factors associated with youth support for VR has been sparse. However, findings from the RAPS team's research project, which began in 2015, suggest that perceived discrimination and exposure to violence among college youth both represent important risk factors for support for VR (Rousseau et al., 2019; Rousseau et al., 2018). Factors like social support and religious affiliation were found to be protective factors, acting to reduce the negative impact of social adversity on susceptibility to VR (Rousseau et al., 2019; Rousseau et al., 2018). Depression was found to be another important risk factor (Rousseau et al., 2019), while having a positive view of the future was found to be protective, especially for more depressed youth (Miconi, Oulhote, et al., 2020). Furthermore, over the course of the two previous data collections (2015 and 2017), we observed a significant increase in levels of depression among youth. On the socio-demographic level, increasingly younger students were at higher risk of supporting VR. In 2015, youth aged 22 to 24 scored higher than their younger counterparts in support for VR, whereas in 2017, it was the age group aged between 16 and 21 that was the most at risk (Rousseau et al., 2020). In addition, between 2015 and 2017, the importance attributed to collective identity (i.e., affiliation with an identity group claimed by the subject), became a more pronounced risk factor, in connection with the polarization around identity issues seen in our society (linguistic, religious/secular, national, political, and related to gender identity and sexual orientation). At last, regional differences (for instance in terms of socio-political climate and cultural/ethnic diversity of the population) also play a role in shaping the impact of discrimination and violence on support for VR, suggesting that prevention and intervention programs must be tailored to local conditions (Miconi, Calcagnì, et al., 2020).

## Implications

Colleges reach a very large number of young people belonging to both majority and ethnic minority groups and play a crucial role in devising cross-sectoral interventions that can promote coexistence and tolerance and limit the intolerant and extremist discourses that fuel support for VR. Our research will contribute to a better understanding of the impact of sensitive and divisive socio-political contexts on young adults' mental health and social adjustment in educational institutions and in our society. During the pandemic, this age group was found to be more hesitant to vaccinate than older age groups (Dubé et al., 2019; Gallup, 2019). In addition, social media, widely used by youth, play a significant and growing role in driving polarization across social and political issues (Gargiulo et al., 2020). Without conflating these positions or minimizing the importance of youth taking critical stances toward the societies in which they live, we must recognize the ways in which this fraught social and political context contributes to youth adopting radical positions, including perspectives that may legitimate violence. The research findings produced by the Institut de recherche sur *l'intégration professionnelle des immigrants* (2022; IRIPI) and by the *Centre d'expertise et de formation sur les intégrismes religieux, les idéologies politiques et la radicalisation* (CEFIR) in 2020 provide a solid evidence base for the development of programs aimed at improving inclusion and respect for all forms of diversity in the Quebec college community.



# Objectives

The overall goal of our research was to **examine the association between social adversity** (e.g., experiences of discrimination and bullying, exposure to violence) **and support for VR among college students in Québec**. Specifically, we wanted to identify associations between sociodemographic characteristics, social adversity, psychological distress, presence of a life purpose and positive vision of the future, Internet use, collective identity, and support for VR. Data collection took place during the second wave of the COVID-19 pandemic, providing a unique context for assessing levels of distress and coping among youth during these difficult and polarizing times. In summary, our aim was to highlight the complex interplay of macro-, meso-, and micro-level factors in shaping the processes that can lead to social solidarity and/or sympathy for violent action.



# ✕ Methodology

Data collection took place during the second wave of COVID-19 in Quebec between January and February 2021. Participants were recruited through partnerships with Quebec colleges. The only inclusion criterion was to be enrolled in college on a full-time basis. Participants were invited to complete an online questionnaire via their institution's intranet. The research protocol and procedures were approved by the Ethics Committee of the Centre Intégré Universitaire and Santé et Services Sociaux du Centre-Ouest-of-l'Île-of-Montréal (CIUSSS-CODIM).

## Description of the sample

A total of 3,431 full-time students between the ages of 16 and 58 from 18 Quebec colleges completed the survey, with an average age of 20 years (SD=). Of these, 68% identified as women, 27% as men, and nearly 3% as transgender or gender diverse (TGD). Most students (66.9%, n=2296) were born in Canada to Canadian-born parents (thus, their families had been in Canada for at least three generations), while 17% (n=578) were first-generation immigrants (born abroad) and 15% (n=500) were second generation immigrants (i.e., born in Canada with at least one parent born abroad). Immigrant students came from a variety of ethnic backgrounds, nearly 6% (n=190) came from Europe, nearly 3% (n=90) from Asia and North Africa/Maghreb (n=86), 1% (n=46) from North America (excluding Canada), and nearly 5% (n=166) from another ethnic background. Considering the heterogeneity of students in terms of ethnicity in the analyses, we controlled for generational status rather than birthplace. Most respondents reported having no religious affiliation (58.1%, n=1995), while a significant minority practiced Christianity (30.6%, n=1050), and a small minority practiced Islam (4.3%, n=146) or another religion (5.9%, n=204). About half of the participants (50.2%, n=1,723) reported never having experienced financial difficulties in their household growing up, one third (34.4%, n=1179) reported sometimes having experienced financial difficulties, and 14.9% reported having experienced financial difficulties often or very often (9.3%, n=320 / 5.6%, n=191). A total of 58% (n=1981) of students reported French as their primary language, 15% (n=507) reported English, and 26% (n=890) reported being bilingual (i.e., both English and French as their primary languages). Finally, slightly more than half (55.4%, n=1901) of participants were enrolled in a pre-university program, while 40% (n=1369) were attending a technical training program.

# Measures

The different questionnaires used to measure support and sympathy for VR are briefly presented in this section. A full description of each of these scales, in addition to those used for all variables of interest, can be found in Appendix 4.

**Support for VR (RIS)**: This variable is measured using the Radicalism Intention subscale from Moskalkenko et McCauley (2009) *Activism and Radicalism Intention Scales* (ARIS). Specifically, participants are asked to rate their willingness to support or participate in violent or illegal behavior on behalf of a group or organization they identify with. Possible scores range from 4 to 28, and a high score indicates more support.

**Sympathy for VR (SyfoR)**: this variable was measured using the *Sympathy for Violent Radicalization Scale* (Bhui et al., 2014). This questionnaire asks participants to rate their degree of sympathy or disapproval of violent behaviors, such as the use of violence in political protests.

# Results ✓

This section presents the results from our preliminary analyses. Descriptive results were summarized using means and standard deviation for continuous variables and frequencies and percentages for categorical variables. To identify potential protective factors and risk factors for support and sympathy for VR, we implemented mixed-effects regression models, controlling for the nested nature of the data (i.e., participants nested within colleges). Note that complete tables of all results presented can be viewed in Appendix 1 (descriptive analyses) and 2 (results from multivariable regression models).

## Support for VR (RIS) and sympathy for VR (SYFOR)

While susceptibility to VR is present among young people surveyed in Quebec, it is worth mentioning that the levels of support and sympathy for VR remain moderate.

Results suggest a mean score of 11.3 ( $SD=6.26$ ) for the support for VR (RIS). However, we noticed a slight increase since 2017, when a mean score of 9.92 ( $SD=5.46$ ) was observed. Furthermore, the mean score tracking sympathy for VR (SYfoR) was 19.9 ( $DS=9.88$ ), an increase since 2017 when the mean score was 16.99 ( $DS=8.80$ ) (see Table 1, Appendix 2). However, these data are purely descriptive and we do not know whether this difference is statistically significant, and we must be cautious in using and interpreting this result. More advanced, repeated measures and further statistical analyses need to be conducted on the data cohorts before a conclusion can be drawn.

## Socio-demographic variables

Results show that younger students and those who identify as transgender or gender diverse (TGD) are at greater risk of supporting VR. In addition, second-generation immigrant students, those who reported English as their primary language, students in pre-university programs, and those with financial difficulties are also at greater risk. Reporting a religious affiliation<sup>1</sup> remains a protective factor, confirming our previous findings. Men's and women's scores on support for VR (RIS) were found to be similar, in contrast with prior findings from 2017 when men scored significantly higher than women. In addition, in terms of sympathy for VR (SyfoR), men ( $M=21$ ,  $SD=9.33$ ) reported higher scores than women ( $M=19$ ,  $SD=10.1$ ) (see Appendix 3, Table 1). It is important to contextualize these findings based on the experiences of these groups (e.g., psychological distress, social adversity) in the present context and to adopt an intersectionality perspective to advance some preliminary interpretations (see our discussion of findings).

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1 To measure this concept, respondents were asked: What is your current religion or belief system?

# Contexts and motives for discrimination and violence

## (SOCIAL ADVERSITY)

Perceived discrimination was measured using the Perceived Discrimination Scale, which explores the experiences of structural discrimination in eight life areas (i.e., employment, workplace, housing, education, public services, health services, social services, and the judicial system) (Noh et al., 1999). A total of 54% (n=1866) of students reported having experienced discrimination, an increase compared to the 34% of students who reported it in 2017. However, percentages vary across contexts and reasons of discrimination. First, it is worth mentioning that 22% (n=753) of students reported having experienced discrimination within the school context. The most common reasons for discrimination were related to gender (22%, n=769), ethnicity (16%, n=534), and language (15%, n=497). As for exposure to violence, three questions from the *Quebec Health Survey Project on Cultural Communities* were used (Rousseau et Drapeau, 2004). Among the students surveyed, 51% (n=1738) said they had been victims of violence or had witnessed it during an event involving a relative (see Table 3, Appendix 2). This result also represents a slight increase from 2017 when 46% of students had mentioned being a victim or witness of violence. Perceived discrimination ( $B=1.54$ ,  $SE=0.25$ ,  $p<0.001$ ) and exposure to violence ( $B=0.48$ ,  $SE=0.24$ ,  $p<0.05$ ) are both important risk factors for support for VR among students (see Table 2, Appendix 3).

To summarize, our results suggest that students who identify as transgender or gender diverse (TGD), students who profess a religion other than Christianity, those who have experienced financial difficulties, participants who do not report French as their primary language, immigrants, and younger people report more experiences of social adversity, such as discrimination (see Table 10, Appendix 3). This finding raises questions about the underlying reasons for the adverse social experiences of these groups. In fact, the results could reflect in part the impact of a societal context characterized by the rise of xenophobic and masculinist attitudes in North America and Quebec. These movements have been fueled by the effects of the pandemic, such as prolonged confinement, loss of jobs and income, unequal exposure to the virus, and restrictions on rights, which have exacerbated pre-

existing inequalities in our society and intensified othering processes and the search for scapegoats. These results suggest that it is urgent to minimize the social adversity and stigmatization that these groups face and address conditions that have been exacerbated by the COVID-19 pandemic.

## Bullying

In recent years, cyberbullying—a form of bullying that occurs through electronic contact—has become an important public health issue, largely affecting adolescents and young adults. Our results suggest that bullying victimization, whether experienced online or in person, is a risk factor for depression and anxiety, but not for support for VR (see Tables 2 and 3, Appendix 3). This suggests that the effect of bullying victimization on support for VR may be indirect via depression (Miconi et al., 2022). Further analyses are needed to test this hypothesis.

## Psychological distress

In the present rapidly evolving scenario of VR (National Consortium for the Study of Terrorism and Responses to Terrorism, 2015), the situation related to the COVID-19 pandemic contributed to high levels of uncertainty which have been associated with increasing feelings of helplessness and hopelessness as well as with increased psychological distress worldwide, especially among young people (Loades et al., 2020; Nearchou et al., 2020). Furthermore, several studies confirm the existence of a positive association between depressive symptoms and support for VR (Misiak et al., 2019; Rousseau et al., 2019). To address the psychological distress observed among students during the pandemic, we measured symptoms of depression and anxiety in their daily lives, as well as academic stress levels related specifically to their academic context, study load, and school environment.

### DEPRESSION AND ANXIETY

Depression was measured using the 15-item *Hopkins Symptom Checklist-25* (HSCL-25) (Derogatis et al., 1974). The mean score of students surveyed in terms of depression was 2.08 ( $SD=0.70$ ) on a scale of 1 to 4 (1 = not at all depressed and 4 = extremely depressed). This suggests an increase in the average score obtained in 2017, which was 1.74 ( $SD=0.62$ ). Moreover, 58% of respondents ( $n=2002$ ) were above the clinical cutoff of 1.75, which also represents an increase compared to the data obtained in 2017 where 39% were above the cutoff (see Table 7, Appendix 2). Furthermore, the

results obtained suggest that depression ( $B=0.73$ ,  $SE=0.12$ ,  $p<0.001$ ) proves to be a significant risk factor for support for VR. Concerning anxiety, the average score of the students surveyed was 1.91 ( $SD=0.656$ ), of which 58% ( $n=2002$ ) were above the clinical cutoff of 1.75. It is important to mention that anxiety is also a risk factor for VR, however when depression is included the association becomes non-significant. This suggests that depression has a greater effect than anxiety as a risk factor for VR.

It should be noted that younger students, gender minorities, women, students who report more financial difficulties, English speakers, and those in a pre-university program reported more psychological distress than students who did not experience financial difficulties, spoke French, and were enrolled in a technical program, respectively (see Table 1, Appendix 3).

## STRESS RELATED TO THE COLLEGE EXPERIENCE

Stress related to the college experience was measured by considering students' levels of stress related to academic performance, academic workload, and college social environment. Regarding academic performance, more than a third of the students (34%,  $n=1668$ ) considered it very stressful and 34% ( $n=1156$ ) extremely stressful. Concerning study load, 36% ( $n=1221$ ) reported being extremely stressed and 34% ( $n=1179$ ) reported being stressed. Significantly lower levels of stress were observed regarding the academic social environment, where 13% ( $n=459$ ) said it was stressful, and 9% ( $n=307$ ) extremely stressful (see Table 7, Appendix 2). More specifically, males, younger students, and those enrolled in a technical training program experienced less stress related to academic performance, study load, and the academic environment, while students reporting financial difficulties experienced more stress in all three areas (see Table 11, Appendix 3).

Additionally, the results show that stress associated with academic performance can be, in some cases, a protective factor for support for VR ( $B= -0.41$ ,  $SE=0.14$ ,  $p<0.01$ ) and sympathy for VR ( $B= -0.53$ ,  $SE=0.22$ ,  $p<0.05$ ). However, it was found to be a risk factor for depression ( $B=0.13$ ,  $SE=0.02$ ,  $p<0.001$ ) and anxiety ( $B=0.12$ ,  $SE=0.02$ ,  $p<0.001$ ), both of which represent risk factors for VR. Stress associated with academic study load was found to be a risk factor for VR ( $B=0.38$ ,  $SE=0.14$ ,  $p<0.01$ ), sympathy for VR ( $B=0.46$ ,  $SE=0.22$ ,  $p<0.05$ ), as well as levels of depression ( $B=0.16$ ,  $SE=0.02$ ,  $p<0.001$ ) and anxiety ( $B=0.12$ ,  $SE=0.02$ ,  $p<0.001$ ). Finally, the level of stress associated with the school environment was also a risk factor for depression ( $B=0.18$ ,  $SE=0.01$ ,  $p<0.001$ ) and anxiety ( $B=0.17$ ,  $SE=0.01$ ,  $p<0.001$ ) (see Table 9, Appendix 3).

Overall, stressful college experiences, such as college performance and workload, are indirectly and conditionally associated with high psychological distress and forms of legitimization of violence. However, further analyses are needed to better understand these associations.



## Time spent online and preference for online social interactions

Time spent on the Internet was measured by asking respondents to report *how many hours they spend on social media on a typical weekday or weekend*. Subsequently, preference for online social interactions was measured by asking respondents to position themselves in relation to items like: “I am more comfortable online,” “I feel safe when I am online,” and “I can be myself when I am online.” Respondents were asked to indicate their answer choice, using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) with scores ranging from 13 to 91. According to the results, students spent an average of 3.58 ( $SD=3.37$ ) hours per day on social media and the average score was 41 ( $SD=14.6$ ) (see Table 6, Appendix 2).

Results suggest that preference for online social interactions over offline social interactions is a risk factor for VR ( $B=0.70$ ,  $SE=0.12$ ,  $p<0.001$ ) as well as depression ( $B=0.11$ ,  $SE=0.01$ ,  $p<0.001$ ). As for time spent on social media, the results indicate that it also represents a risk factor for depression and sympathy for VR (see Table 4, Appendix 3). Specifically, this means that more time spent on social media and a stronger preference for online social interactions are significantly and positively associated with higher sympathy for VR and increased self-reported depression among participants. It is important to remember that these are not causal relationships, and that bidirectional relationships can be hypothesized (i.e., social media accelerate radicalization and more isolated and distressed individuals take refuge online and prefer virtual relationships to non-virtual ones).

## Collective identity

Collective identity was assessed using two subscales of Luhtanen et Crocker (1992) *Collective Self-Esteem Scale* (CSES). These scales focus on the individual's perception of the importance of group identity in two areas: the importance of belonging to a social group for one's personal identity and the importance of public collective self-esteem (i.e., the value attributed by other people to one's social group). The results showed that the importance of collective identity for personal identity was significantly associated with VR, in that a higher importance attributed to one's identification with a group was related to higher support for VR. However, a positive public view of one's group (public self-esteem) was a protective factor for VR (see Table 5, Appendix 3), confirming our prior findings.

Furthermore, the analyses suggest a complex association between collective identity and support for VR. Group identification may represent a risk or protective factor, depending on

the characteristics of the group identity in question. For instance, students who reported a sense of belonging to certain identity groups were found to be at higher risk of support for VR, such as students who identified as belonging to a political ( $B=3.66$ ,  $SE=0.30$ ,  $p<0.001$ ), gender ( $B=1.05$ ,  $SE=0.27$ ,  $p<0.001$ ), or sexual orientation group ( $B=2.19$ ,  $SE=0.29$ ,  $p<0.001$ ) reported higher scores of support for VR. In contrast, students who identified with a professional identity group reported lower scores of support for VR ( $B= -1.31$ ,  $SE=0.25$ ,  $p<0.001$ ), suggesting that students' professional identity may act as a protective factor (see Table 8, Appendix 3).

## Vision of the future and presence of a meaning in life

Vision of the future was measured using three items regarding the vision of the future of the world, the community, and oneself. Participants were asked to indicate their level of agreement using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) to items such as: "I feel the future holds many opportunities for me" or "I have confidence in the future of the world." The presence of meaning in life ( $B= -0.73$ ,  $SE=0.12$ ,  $p<0.001$ ) and a positive view of the future ( $B= -0.80$ ,  $SE=0.11$ ,  $p<0.001$ ) were protective factors for support for VR (see Table 7, Appendix 3). Specifically, students who reported higher presence of meaning in life and/or a more positive view of the future were at lower risk of supporting VR.

# Implications for practice

In terms of prevention and intervention, our results strengthen the evidence base for some existing programs and suggest new directions for future prevention and intervention initiatives in the field.

## Prevention

Confirming some of the prevention initiatives endorsed by educational communities (e.g., the guide produced by IRIPI in 2022 aimed at the secondary level), our results confirm that prevention and intervention programs and policies should aim to foster an inclusive and non-discriminatory

school climate in order to reduce youths' experiences of victimization and thus minimize the negative consequences of these experiences on mental health and support of VR. Our results showed that discrimination and victimization are a reality of great concern among young students. These experiences, which often occur in the school setting (22%), have a negative impact not only on students' well-being, but also on their attitudes toward violence. Although several initiatives in this regard are put forward by colleges, they do not sufficiently reach students. It is therefore necessary to promote and develop initiatives to ensure that students are reached. This suggests that colleges would benefit from continuing to invest in initiatives to improve school climate and initiate an inclusive and respectful dialogue with students and staff around socially polarizing issues to promote well-being for all and reduce the risk of violence. These initiatives should be evaluated to determine whether they are effective and to what extent they should be disseminated more broadly. School staff should also receive training in prevention to reduce social polarization. Our results also highlight the importance of difficult experiences for vulnerable youth, in particular the role of financial difficulties, which also requires specific social and organizational responses.

Given that preference for online social interaction and time spent online have been shown to be risk factors, increasing digital literacy may be necessary to address the challenges posed by misinformation and cyberbullying. While the use of social media during the pandemic represented a potential resource to counteract the isolation associated with social distancing among youth, our data suggest that it may have been also a source of increased alienation and victimization. While it seems important to promote healthy Internet use habits and cultivate critical thinking among youth online, effective actions to address this issue are far from clear and will require specific work in the college context.

Our results also highlighted the polarizing role of group identities among youth, reflecting the polarization around identities that we have observed in our societies in recent years (Rousseau et al., 2020). Students' group identities can be a risk factor when the group they identify with is stigmatized or perceived negatively in our society. This confirms the importance of supporting multiple identities in order to foster a healthy living together (IRIPI, 2022). An additional recommendation is to help students explore their professional identities, which have been shown to be a potential protective factor. Finally, considering the protective aspect of nurturing the presence of a meaning in life and a positive vision of the future, it is important to think about multiple ways to help and support students' sense of purpose within the curriculum and extracurricular activities, with accommodations for students with diverse academic abilities.

## Intervention

Our research confirms that levels of psychological distress are extremely high among youth, showing the need to increase support and access to mental health care for young people by focusing on services that are easily and quickly accessible to all college students. The link between academic stress and mental health suggests that academic stress can become counterproductive and lead to burnout and possibly disengagement. The strength of this association suggests that this is not a marginal problem. A global pedagogical reflection seems necessary.

It should also be noted that gender minorities report higher rates of depression and discrimination, which are two important risk factors for support for VR. People who identify as transgender and gender diverse have an urgent need for support that should not be ignored. Finally, it would be relevant to reflect on the recent resurgence of masculinist movements in a context where gender identity is at the forefront of the political and social debate. These societal dynamics affect schools and the school climate, and it is important to reflect on such dynamics in order to better understand this phenomenon in its social and individual dimensions and to support those who identify as gender minorities while promoting an open dialogue around gender diversity issues.

# Conclusion

This report is intended to provide colleges with rapid information about the preliminary findings of this study. It does not represent all that is being done in the field by the colleges and is intended as a first step in mobilizing this new knowledge. The RAPS research team would be very interested in discussing directly with you the interpretation of these data, their limitations, and, of course, their implications for your practices.

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# Appendix\*

# Appendix 1: Proportion of colleges by region

TABLE 1: PROPORTION OF COLLEGES BY REGION

Colleges by region	
Anglophone	661 (19.3%)
Center	279 (8.1%)
Estrie	438 (12.8%)
Far East	325 (9.5%)
Montréal	993 (28.9%)
Quebec	697 (20.3%)
Missing	38 (1.1%)
	Total (N=3431)

## Appendix 2 : Descriptive statistics

**TABLE 1: DESCRIPTIVE INFORMATION ON VARIABLES OF INTEREST AMONG PARTICIPANTS**

Total (N=3431)	
Gender	
Female	2328 (67.9%)
Male	936 (27.3%)
TGD	86 (2.5%)
Mising	81 (2.4%)
Age	
Mean (SD)	20.0 (5.17)
Median [Min, Max]	18.0 [16.0, 58.0]
Missing	19 (0.6%)
Age (group)	
16–18	1898 (55.3%)
19–21	973 (28.4%)
22–29	332 (9.7%)
30+	214 (6.2%)
Missing	14 (0.4%)
Generation	
Third or above	2296 (66.9%)
First	578 (16.8%)
Second	500 (14.6%)
Missing	57 (1.7%)
Religion	
No religion	1995 (58.1%)
Christianity	1050 (30.6%)
Islam	146 (4.3%)
Other	204 (5.9%)
Missing	36 (1.0%)

**TABLE 1: DESCRIPTIVE INFORMATION ON VARIABLES OF INTEREST AMONG PARTICIPANTS**

Total (N=3431)	
Country of birth	
Canada	2817 (82.1%)
Asie	90 (2.6%)
Europe	190 (5.5%)
North Africa/Maghreb/ Middle East	86 (2.5%)
North America (excluding Canada)	46 (1.3%)
Other	166 (4.8%)
Missing	36 (1.0%)
Status in Canada	
Citizen/Permanent Resident/Refugee	3288 (95.8%)
Temporary visa (e.g., International student, asylum seeker)	111 (3.2%)
Missing	32 (0.9%)
Financial difficulties	
Never	1723 (50.2%)
Sometimes	1179 (34.4%)
Often	320 (9.3%)
Very often	191 (5.6%)
Missing	18 (0.5%)
First language	
English	389 (11.3%)
French	2550 (74.3%)
Other	440 (12.8%)
Missing	52 (1.5%)

**TABLE 1: DESCRIPTIVE INFORMATION ON VARIABLES OF INTEREST AMONG PARTICIPANTS**

Total (N=3431)	
<b>Primary language</b>	
French	1981 (57.7%)
English	507 (14.8%)
Both	890 (25.9%)
Missing	53 (1.5%)
<b>Currently employed</b>	
No	1647 (48.0%)
Yes	1784 (52.0%)
<b>If yes, how many hours per week</b>	
Mean (SD)	14.6 (7.15)
Median [Min, Max]	15.0 [0, 72.0]
Missing	1647 (48.0%)
<b>Program</b>	
Pre-university program	1901 (55.4%)
Technical program	1369 (39.9%)
Missing	161 (4.7%)
<b>RIS</b>	
Mean (SD)	11.3 (6.26)
Median [Min, Max]	10.0 [4.00, 28.0]
Missing	60 (1.7%)
<b>SYFOR</b>	
Mean (SD)	19.9 (9.88)
Médiane [Min, Max]	18.0 [8.00, 56.0]
Missing	272 (7.9%)

**TABLE 2: CONTEXTS AND REASONS OF DISCRIMINATION**

Total (N=3431)	
<b>Discrimination context: looking for a job</b>	
No	3120 (90.9%)
Yes	290 (8.5%)
Missing	21 (0.6%)
<b>Discrimination context: workplace</b>	
No	3016 (87.9%)
Yes	394 (11.5%)
Missing	21 (0.6%)
<b>Discrimination context: looking for an apartment or house</b>	
No	3268 (95.2%)
Yes	141 (4.1%)
Missing	22 (0.6%)
<b>Discrimination context: school</b>	
No	2661 (77.6%)
Yes	753 (21.9%)
Missing	17 (0.5%)
<b>Discrimination context: service to the public</b>	
No	3047 (88.8%)
Yes	364 (10.6%)
Missing	20 (0.6%)
<b>Discrimination context: health and/or social services</b>	
No	3178 (92.6%)
Yes	231 (6.7%)
Missing	22 (0.6%)

**TABLE 2: CONTEXTS AND REASONS OF DISCRIMINATION**

Total (N=3431)	
<b>Discrimination context: justice and/or police</b>	
No	3225 (94.0%)
Yes	182 (5.3%)
Missing	24 (0.7%)
<b>Discrimination reasons: religion/faith</b>	
No	2899 (84.5%)
Yes	497 (14.5%)
Missing	35 (1.0%)
<b>Discrimination reasons: political views</b>	
No	2997 (87.4%)
Yes	398 (11.6%)
Missing	36 (1.0%)
<b>Discrimination reasons: sexual orientation</b>	
No	3003 (87.5%)
Yes	396 (11.5%)
Missing	32 (0.9%)
<b>Discrimination reasons: gender</b>	
No	2626 (76.5%)
Yes	769 (22.4%)
Missing	36 (1.0%)
<b>Discrimination reasons: race/ethnicity</b>	
No	2868 (83.6%)
Yes	534 (15.6%)
Missing	29 (0.8%)
<b>Discrimination reasons: migration status</b>	
No	3241 (94.5%)
Yes	156 (4.5%)
Missing	34 (1.0%)



**TABLE 2: CONTEXTS AND REASONS OF DISCRIMINATION**

Total (N=3431)	
Discrimination reasons: disability	
No	3271 (95.3%)
Yes	123 (3.6%)
Missing	37 (1.1%)
Discrimination reasons: other	
No	2865 (83.5%)
Yes	405 (11.8%)
Missing	161 (4.7%)
Discrimination (at least one reported experience)	
Non	1498 (43.7%)
Yes	1866 (54.4%)
Missing	67 (2.0%)

**TABLE 3: VIOLENCE**

Total (N=3431)	
Violence	
No	1676 (48.8%)
Yes	1738 (50.7%)
Missing	17 (0.5%)

**TABLE 4: VISION OF THE FUTURE**

Total (N=3431)	
Presence of meaning in life	
Mean (SD)	22.1 (7.46)
Median [Min, Max]	22.0 [5.00, 35.0]
Missing	32 (0.9%)
Future orientation	
Mean (SD)	13.3 (4.25)
Median [Min, Max]	14.0 [3.00, 21.0]
Missing	52 (1.5%)

**TABLE 5: IMPORTANCE OF COLLECTIVE IDENTITY FOR PERSONAL IDENTITY AND PUBLIC SELF-ESTEEM**

Total (N=3431)	
Importance of identity	
Mean (SD)	17.2 (5.44)
Median [Min, Max]	17.0 [4.00, 28.0]
Missing	95 (2.8%)
Public self-esteem	
Moyenne (SD)	18.2 (5.70)
Médiane [Min, Max]	18.0 [4.00, 28.0]
Missing	98 (2.9%)

**TABLE 6: INTERNET TIME AND PREFERENCE FOR ONLINE SOCIAL INTERACTIONS**

Total (N=3431)	
Internet Time (Mean per day)	
Mean (SD)	3.58 (3.37)
Median [Min, Max]	3.00 [0, 24.0]
Missing	93 (2.7%)
Confort social en ligne	
Mean (SD)	41.0 (14.6)
Median [Min, Max]	40.0 [13.0, 91.0]
Missing	598 (17.4%)

**TABLE 7: DEPRESSION, ANXIETY AND STRESS**

Total (N=3431)	
<b>Depression</b>	
Mean (SD)	22.1 (7.46)
Median [Min, Max]	22.0 [5.00, 35.0]
Missing	32 (0.9%)
<b>Depression cutoff</b>	
Below clinical cutoff	1288 (37.5%)
Above clinical cutoff	2002 (58.4%)
Missing	141 (4.1%)
<b>Anxiety</b>	
Mean (SD)	1.91 (0.656)
Median [Min, Max]	1.80 [1.00, 4.00]
Missing	158 (4.6%)
<b>Anxiety cutoff</b>	
Below clinical cutoff	1567 (45.7%)
Above clinical cutoff	1706 (49.7%)
Missing	158 (4.6%)
<b>Stress associated with academic performance in college</b>	
Not at all stressful	123 (3.6%)
A little stressful	350 (10.2%)
Moderately stressful	595 (17.3%)
Stressful	1168 (34.0%)
Extremely stressful	1156 (33.7%)
Missing	39 (1.1%)
<b>Stress associated with study load in college</b>	
Not at all stressful	119 (3.5%)
A little stressful	290 (8.5%)
Moderately stressful	581 (16.9%)
Stressful	1179 (34.4%)
Extremely stressful	1221 (35.6%)
Missing	41 (1.2%)
<b>Stress associated with the social environment in college</b>	
Not at all stressful	1157 (33.7%)
A little stressful	796 (23.2%)
Moderately stressful	667 (19.4%)
Stressful	459 (13.4%)
Extremely stressful	307 (8.9%)
Missing	45 (1.3%)

# Appendix 3: Results of multivariate analyses (Mixed-effect regression models)

All of the regression models below control for the nested nature of the data (students nested within colleges, mixed effect models). All models control for gender, age, generation, religion, socioeconomic status, primary language and program (pre-university or technical).

**TABLE 1: REGRESSION MODEL OF SOCIO-DEMOGRAPHIC VARIABLES ON SUPPORT FOR VIOLENT RADICALIZATION (RIS AND SYFOR) AND DEPRESSION**

	Dependent variables		
	RIS VR Support $\beta$ (SE)	SYFOR VR Sympathy $\beta$ (SE)	Depression $\beta$ (SE)
Gender (Male)	-0.17 (0.24)	1.85*** (0.39)	-0.32*** (0.03)
Gender (TGD)	5.97*** (0.68)	8.62*** (1.14)	0.25*** (0.08)
Age (Years)	-0.11*** (0.03)	-0.28*** (0.04)	-0.02*** (0.003)
Generation (First generation)	0.48 (0.36)	0.68 (0.58)	-0.06 (0.04)
Generation (Second generation)	1.53*** (0.34)	1.95*** (0.55)	-0.02 (0.04)
Religion (Christianity)	-1.43*** (0.24)	-2.07*** (0.40)	-0.08** (0.03)
Religion (Islam)	-1.82** (0.59)	-2.29* (0.97)	-0.002 (0.07)
Religion (Other)	0.50 (0.48)	1.12 (0.78)	0.01 (0.05)
Financial difficulties (Sometimes)	0.74** (0.24)	1.47*** (0.39)	0.19*** (0.03)
Financial difficulties (Often)	1.07** (0.40)	2.54*** (0.65)	0.43*** (0.04)
Financial difficulties (Very often)	2.07*** (0.50)	3.29*** (0.82)	0.62*** (0.06)
Primary language (French)	-0.61 (0.43)	-1.57* (0.70)	-0.13** (0.05)
Primary language (Other)	-1.80*** (0.51)	-2.11* (0.83)	-0.12* (0.06)
Program (Technical)	-1.24*** (0.24)	-1.54*** (0.39)	-0.10*** (0.03)
Constant	14.17*** (0.65)	25.88*** (1.05)	2.52*** (0.07)

*Note.* SE = standard error. The base category for gender was "female." The baseline category for immigration status was "third generation immigrant/non-immigrant." The baseline category for religion was "non-religious." The baseline category for primary language was "English." The baseline category for financial difficulties was "never." The baseline category for education was "pre-university program."

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

**TABLE 2: REGRESSION MODEL OF SOCIAL ADVERSITY AND DEPRESSION ON SUPPORT FOR VIOLENT RADICALIZATION**

	Dependent variables	
	RIS VR Support $\beta$ (SE)	SYFOR VR Sympathy $\beta$ (SE)
Discrimination (Yes)	1.54*** (0.25)	1.96*** (0.40)
Violence (Yes)	0.48* (0.24)	0.84* (0.38)
Intimidation (Yes/Online)	0.02 (0.13)	
Intimidation (Yes/In person)	-0.06 (0.14)	-0.37 (0.20)
Depression	0.73*** (0.12)	1.35*** (0.20)

*Note.* *SE* = standard error. The base category for discrimination was "no." The baseline category for violence was "no." The base category for online bullying was "no." The baseline category for in-person bullying was "no."

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

**TABLE 3: REGRESSION MODEL OF SOCIAL ADVERSITY ON DEPRESSION**

	Dependent variables
	Depression $\beta$ (SE)
Discrimination (Yes)	0.18*** (0.03)
Violence (Yes)	0.08** (0.03)
Intimidation (Yes/Online)	0.10*** (0.01)
Intimidation (Yes/In person)	0.04** (0.01)

*Note.* *SE* = standard error. The baseline category for discrimination was "no." The baseline category for violence was "no." The base category for online bullying was "no." The baseline category for in-person bullying was "no."

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

**TABLE 4: REGRESSION MODEL OF INTERNET TIME AND PREFERENCE FOR ONLINE SOCIAL INTERACTIONS ON DEPRESSION AND SUPPORT FOR VIOLENT RADICALIZATION**

	Dependent variables		
	RIS VR Support $\beta$ (SE)	SYFOR VR Sympathy $\beta$ (SE)	Depression $\beta$ (SE)
Time spent on the Internet (Average time)	0.07 (0.04)	0.13* (0.06)	0.02*** (0.004)
Preference for online social interactions (Scale sum)	0.70*** (0.12)	1.51*** (0.20)	0.10*** (0.01)

*Note.* SE = Standard error.  
\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

**TABLE 5: REGRESSION MODEL OF COLLECTIVE SELF-ESTEEM ON SUPPORT FOR VIOLENT RADICALIZATION.**

	Variables dépendantes	
	RIS VR Support $\beta$ (SE)	SYFOR VR Sympathy $\beta$ (SE)
Importance of collective identity	0.89*** (0.11)	1.11*** (0.18)
Public self-esteem	-1.06*** (0.11)	-1.68*** (0.18)

*Note.* SE = Standard error  
p<0.05; \*\*p<0.01; \*\*\*p<0.001

**TABLE 6: REGRESSION MODEL OF FUTURE ORIENTATION AND MEANING IN LIFE ON SUPPORT FOR VIOLENT RADICALIZATION**

	Dependent variables			
	RIS VR Support $\beta$ (SE)	SYFOR VR Sympathy $\beta$ (SE)	RIS VR Support $\beta$ (SE)	SYFOR VR Sympathy $\beta$ (SE)
Positive vision of the future	-0.80*** (0.11)	-1.46*** (0.18)		
Search for meaning in life			0.22 (0.12)	0.29 (0.19)
Presence of a meaning in life			-0.73*** (0.12)	-1.41*** (0.20)

*Note.* SE = Standard error  
p<0.05; \*\*p<0.01; \*\*\*p<0.001

TABLE 7: REGRESSION MODELS OF IDENTITY GROUPS ON SUPPORT FOR VIOLENT RADICALIZATION

	Dependent variables	
	RIS VR Support β(SE)	SYFOR VR Sympathy β(SE)
Group (national/ethnicity)	0.04 (0.26)	0.59 (0.43)
Group (political movement)	3.66*** (0.30)	4.18*** (0.50)
Group (religion)	-0.71 (0.44)	-0.90 (0.74)
Group (age)	-0.001 (0.24)	-0.56 (0.39)
Groupe (gender)	1.05*** (0.27)	0.75 (0.44)
Group (sexual orientation)	2.19*** (0.29)	3.74*** (0.47)
Group (professional)	-1.31*** (0.25)	-1.56*** (0.42)
Group (hobbies)	-0.09 (0.21)	-0.09 (0.34)

Note. SE = Standard error  
p<0.05; \*\*p<0.01; \*\*\*p<0.001

TABLE 8: REGRESSION MODEL OF STRESS ON THE VARIABLES OF INTEREST

	Dependent variables			
	RIS VR Support β(SE)	SYFOR (Sympathie à la RV) β(SE)	Depression β(SE)	Anxiety β(SE)
Stress (academic performance in college)	-0.41** (0.14)	-0.53* (0.22)	0.13*** (0.02)	0.12*** (0.02)
Stress (academic workload)	0.38** (0.14)	0.46* (0.22)	0.16*** (0.02)	0.12*** (0.02)
Stress (social environment in college)	0.08 (0.09)	0.15 (0.14)	0.18*** (0.01)	0.17*** (0.01)

Note. SE = Standard error  
p<0.05; \*\*p<0.01; \*\*\*p<0.001

**TABLE 9: REGRESSION MODEL OF SOCIODEMOGRAPHIC  
ON DISCRIMINATION AND VIOLENCE**

	Dependent variables	
	Discrimination $\beta$ (IC)	Violence $\beta$ (IC)
Gender (Male)	-0.459*** (-0.632, -0.285)	-0.111 (-0.280, 0.058)
Gender (TGD)	1.235*** (0.608, 1.861)	0.524* (0.027, 1.021)
Age (Years)	0.051*** (0.030, 0.071)	0.037*** (0.018, 0.056)
Generation (First generation)	0.352** (0.094, 0.610)	0.231 (-0.017, 0.479)
Generation (Second generation)	0.430*** (0.184, 0.677)	0.257* (0.024, 0.489)
Religion (Christianity)	-0.044 (-0.217, 0.129)	0.011 (-0.157, 0.179)
Religion (Islam)	0.914*** (0.412, 1.416)	0.449* (0.019, 0.879)
Religion (Other)	0.494** (0.121, 0.867)	0.199 (-0.143, 0.541)
Financial difficulties (Sometimes)	0.788*** (0.618, 0.957)	0.830*** (0.665, 0.994)
Financial difficulties (Often)	1.273*** (0.967, 1.578)	1.373*** (1.082, 1.664)
Financial difficulties (Very often)	1.957*** (1.484, 2.429)	1.750*** (1.342, 2.157)
Primary language (French)	-0.420** (-0.714, -0.127)	0.036 (-0.232, 0.304)
Primary language (Other)	-0.177 (-0.551, 0.198)	0.204 (-0.145, 0.553)
Program (Technical)	-0.141 (-0.315, 0.033)	-0.087 (-0.255, 0.081)

*Note.* IC = confidence interval. The base category for gender was "female." The baseline category for immigration status was "third generation immigrant/non-immigrant." The baseline category for religion was "non-religious." The baseline category for primary language was "English." The baseline category for financial difficulties was "never." The baseline category for education was "pre-university program."

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001



**TABLE 10: REGRESSION MODEL OF SOCIODEMOGRAPHIC VARIABLES ON STRESS**

	Dependent variables		
	Stress (school performance) $\beta$ (SE)	Stress (workload Studies) $\beta$ (SE)	Stress (college social environment $\beta$ (SE)
Gender (Male)	-0.65*** (0.04)	-0.59*** (0.04)	-0.40*** (0.05)
Gender (TGD)	-0.05 (0.12)	0.06 (0.12)	0.38** (0.15)
Age (Years)	-0.03*** (0.004)	-0.03*** (0.004)	-0.03*** (0.01)
Generation (First generation)	-0.14* (0.06)	-0.22*** (0.06)	-0.07 (0.08)
Generation (Second generation)	-0.005 (0.06)	-0.03 (0.06)	0.06 (0.07)
Religion (Christianity)	0.07 (0.04)	0.04 (0.04)	0.06 (0.05)
Religion (Islam)	0.18 (0.10)	0.15 (0.10)	0.13 (0.13)
Religion (Other)	-0.17 (0.10)	-0.09 (0.09)	-0.14 (0.12)
Financial difficulties. (Sometimes)	0.14*** (0.04)	0.16*** (0.04)	0.20*** (0.05)
Financial difficulties. (Often)	0.32*** (0.07)	0.40*** (0.07)	0.46*** (0.08)
Financial difficulties. (Very often)	0.50*** (0.09)	0.42*** (0.09)	0.76*** (0.11)
Primary language. (French)	0.02 (0.07)	0.14 (0.07)	-0.02 (0.08)
Primary language. (Other)	0.02 (0.09)	0.08 (0.09)	-0.08 (0.11)
Program (Technical)	-0.11* (0.04)	-0.03 (0.04)	-0.04 (0.05)

*Note.* SE = standard error. The base category for gender was "female." The baseline category for immigration status was "third generation immigrant/non-immigrant." The baseline category for religion was "non-religious." The baseline category for primary language was "English." The baseline category for financial difficulties was "never." The baseline category for education was "pre-university program."

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

## Appendix 4: Measurements scales for variables of interests

### *Sympathy for violent radicalization (Bhui et al., 2014)*

Scale (Syfor) was used to assess the student's degree of sympathy or condemnation for nine acts of protest ranging from nonviolence (e.g., participating in nonviolent political demonstrations) to increasingly extreme acts of violence (e.g., using bombs or weapons to fight injustice). The participant responds on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with a higher score signifying greater sympathy for violent radicalization. The Syfor was developed in a British context and the items were adapted slightly to the Canadian context (e.g., people in Canada instead of people in Britain to introduce the questions). The SyfoR provides a good internal consistency of  $\alpha = 0.88$ .

### *Radicalization Intentions (Moskalenko et McCauley, 2009)*

The Radicalism Intention Scale (RIS) is a subscale of the Activism and Radicalism Intention Scale (ARIS). This questionnaire assesses an individual's willingness to support illegal and violent behavior on behalf of their group or organization. It consists of four items rated on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with a higher total score indicating greater support for violent radicalization. A total score summing all items was used in this study. The scale has been previously validated with ethnically diverse populations ( $\alpha = 0.85$ ).

### *Perceived Discrimination (Noh et al., 1999)*

Explores the experience of structural discrimination in eight life domains (i.e., employment, workplace, housing, education, public services, health services, social services, and the judicial system). Participants were asked to indicate the experience of discrimination in any of the eight selected life domains in a questionnaire, in a dichotomous (yes/no) format. Two groups (1) those who experienced discrimination in at least one of the domains (i.e., at least one "yes" response), and (2) those who did not report discrimination in any domain (i.e., all "no" responses).

### *Exposure to violence (Rousseau et Drapeau, 2004)*

Exposure to violence (Rousseau et Drapeau, 2004)

Exposure to violence was measured using three questions taken from the Quebec Health Survey on Cultural Communities project. Participants were asked to indicate, in a yes/no format, whether they had (1) witnessed or been a victim of violence related to a social and/

or political context; (2) had a personal experience of persecution; and (3) witnessed or been a victim of violent events involving someone close to them (e.g., family, friend). Participants who answered "yes" to at least one of these questions were classified as exposed to violence.

### *Psychological distress*

#### *Depression and anxiety (Derogatis et al., 1974)*

Depression and anxiety were assessed using the Hopkins Symptom Checklist-25 (HSCL-25) depression (15 items) and anxiety (10 items) subscales. We asked participants to rate the extent to which they were bothered by symptoms of depression and anxiety in the past week (e.g., sleep difficulties, eating difficulties, negative mood) on a 4-point Likert scale ranging from 1 (not at all) to 4 (extremely). Symptom severity was calculated by averaging responses, with scores of 1.75 and above indicating high anxiety or depression symptoms (above clinical threshold). Internal reliability measured by Cronbach's alpha for this scale was  $\alpha = .92$  for depression and  $\alpha = .89$  for anxiety.

#### *Bullying victimization*

Bullying victimization was measured using statements that offered a choice of responses (yes/no) on a 4-point Likert scale ranging from 1 = never to 4 = very often. Sample statements include:

- Have you been cyberbullied or harassed (i.e., email, social media, or texting)? Never / Sometimes / Often / Very often
- Have you been bullied or harassed in person? Never / Sometimes / Often / Very often

#### *Stress of the school environment*

School stress was divided into three sub-questions using statements measured with a 5-point Likert scale ranging from 1 (Not at all stressful) to 5 (extremely stressful):

To what extent are the following factors important stressors for you?

- Your academic performance in college (performance)
- The workload associated with your studies
- The social environment in college.

## *Internet*

### *Time spent on social media*

Time spent on social media was measured via two questions:

- How many hours do you spend on social media per day during the week?
- How many hours do you spend on social media per day on the weekend?

### *Preference for online social interaction (Davis et al., 2002)*

Preference for online social interaction is measured using the Online Cognition Scale (Davis et al., 2002). Using 13 items, respondents are asked how they feel when they are online, using a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicate that the respondent feels more comfortable in online than in offline interaction.

The internal reliability measured by Cronbach's alpha for this scale was  $\alpha = 0.88$

Here are some example items:

- I am most comfortable online
- I feel safest when I am on the Internet
- People accept me for who I am online

### *Collective Identity (Luhtanen et Crocker, 1992)*

Collective identity was assessed using 8 items grouped into two subscales of the Collective Self-Esteem Scale (CSES) measuring individual perception of the importance of group identity in two domains i.e., the importance of belonging to a social group to one's identity, and public collective self-esteem (i.e., the value attributed by other people to one's social group). Responses were scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scale showed good internal reliability for importance to identity ( $\alpha=0.75$ ) and public collective self-esteem ( $\alpha=0.86$ ).

## *Vision of the future and meaning in life*

### *Future orientation (Saigh, 1997)*

Positive future orientation was measured using an adaptation of the Children's Future Orientation Scale (CFOS). It is assessed using three items regarding future views of the world, community, and self, scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). A total score was obtained by averaging all questions. Higher scores indicate more positive attitudes toward the future. The internal reliability of the positive view of the future was  $\alpha=0.78$ .

Items included:

- I feel that the future offers me many opportunities
- I feel that the future offers many opportunities for my community
- I have confidence in the future of the world

### *The presence and search for meaning in life (Steger et al., 2006)*

The presence and search for meaning in life is assessed using the Meaning in Life Questionnaire (MLQ). The Meaning in Life Questionnaire includes five items that measure the degree to which individuals feel their lives are meaningful (Presence subscale) and five items that reflect individuals' motivation and desire to find or deepen meaning in their lives (Search subscale). Items are scored on a five-point Likert-type scale ranging from 1 (almost never) to 5 (almost always). The MLQ has been used with both adolescent and adult samples and has shown good reliability, validity and stable factor structure. In our sample, the Cronbach's Alpha for the Presence of and Search of a Meaning in Life scales were both  $\alpha = .89$ .

Some of the items include:

- I understand the meaning of my life
- My life clearly has a purpose
- I have found satisfying meaning in my life
- I am searching for a purpose or vision for my life
- I am looking for meaning in my life