ORIGINAL ARTICLE

An Exploratory Mixed-method Descriptive Analysis of Youth Coping during the First Wave of the COVID-19 Pandemic in Quebec

Martine Hébert[1] · Arianne Jean-Thorn[2] · Katherine Malchelosse[2]

Abstract

This study presents an exploratory mixed-method descriptive analysis of psychological distress, challenges encountered and coping strategies of youth during the first wave of COVID-19. A total of 4 914 Quebec youth, aged 14 to 25 recruited through social media completed an online survey on the impact of the pandemic on their daily life, psychological distress and post-traumatic growth. They were also invited to answer two open-ended questions regarding the difficulties they experienced and their coping strategies. Overall, 26.6% of youth showed serious psychological distress and 20.3% displayed probable PTSD symptoms related to the COVID-19. Comparative analyses revealed that youth identifying as gender and sexual minorities were more vulnerable to distress during the first wave of the pandemic. While few sociodemographic variables distinguish youth reporting post-traumatic growth from those who do not, the former group was more likely to seek and receive social support. Qualitative data highlighted difficulties that were common to many respondents including lack of social contacts, the lockdown itself, and problems related to disruptions of educational and academic activities. Youth also mentioned three main strategies they used to cope: maintaining social contacts, engaging in leisure activities and physical exercise. While many youths have encountered compelling challenges during the lockdown of the first wave of COVID-19, some report having relied on efficient coping strategies to deal with the situation. Support services should be implemented to help the youth cope with the pandemic while considering their diverse needs.

Keywords COVID-19 · Youth · Mixed-methods · Mental health · Coping strategies

The coronavirus outbreak began in Wuhan, China in December 2019. On January 30, 2020, the World Health Organization declared a health emergency and on March 11, 2020, a pandemic. Since then, over 621 million cases and 6 million deaths have been confirmed all around the world (Worldwide Health Organization, 2022).

Since March 2020, the COVID-19 pandemic and related sanitary measures have been affecting the mental health of individuals all over the planet. An earlier study on the mental health of adults exposed to COVID-19 in China found that living in the hot spots of the epidemic, more exposure to the media, and less cognitive and prosocial coping strategies were associated with more mental health problems (Guo et al., 2020). Another study found that 7% of a sample of 285 citizens from Wuhan and surrounding cities showed post-traumatic stress symptoms (Liu et al., 2020). Studies conducted in Italy found high levels of post-traumatic stress symptoms, ranging from 7.9% to 29.5% of different samples (Casagrande et al., 2020; Castelli et al., 2020; Forte et al., 2020). The psychosocial impacts of the COVID-19 pandemic are present worldwide. As shown in a review, exposure to the virus, forced quarantine and lockdowns, as well as media exposure are associated to anxiety, acute panic, obsessive behavior, depression, stigmatization, racism and xenophobia (Dubey et al., 2020; Racine et al., 2020).

These impacts may also be salient in adolescents and young adults who are in a fragile period of social and personal exploration, that the pandemic and associated consequences might hinder. Indeed, a study conducted in China following the COVID-19 outbreak found that 40.4% of youth aged 14 to 35 were likely to develop a psychological health problem (Liang et al., 2020). In Canada, a few studies have

✉ Martine Hébert
hebert.m@uqam.ca

1   Département de sexologie, Université du Québec à Montréal, C.P. 8888, Succursale Centre-Ville, Montréal, Québec H3C 3P8, Canada

2   Département de psychologie, UQAM, Montréal, Québec, Canada

been conducted with youth, browsing the consequences and the challenges related to the pandemic (Courtney et al., 2020; Hawke et al., 2020). One of these studies, conducted among youth with a history of addictions, showed a significant deterioration between prepandemic mental health and intrapandemic mental health. Furthermore, participants reported unmet needs for help and disruptions of health services (Hawke et al., 2020). The detrimental impact of the COVID-19 pandemic could also be particularly salient among gender-diverse (i.e., transgender, queer) and sexually diverse (i.e., gay, bisexual or asexual orientation) youth who are already struggling with their access to health and social services and experiences of violence and stigma (Dysart-Gale, 2010; Hatzenbuehler & Pachankis, 2016). A study conducted by Hawke et al. (2021) showed that gender and sexual diversity (GSD) youth reported more disruptions in mental health services and less support from their families than cisgender youth.

While the bulk of studies conducted to date has underscored the negative impact associated with COVID-19, some studies have also explored the possible positive adaptation of the population in the face of the pandemic (Barzilay et al., 2020; Shanahan et al., 2020). Indeed, in the face of adversity, some individuals may display a profile of resilience (Chen & Bonanno, 2020), use effective coping strategies or be able to navigate towards supportive resources to deal with difficult times and maintain a positive adaptation. Some may even develop post-traumatic growth, which is the ability to find meaning in stressful experiences and gain a positive insight into one's perception of themselves, others and the world (Tedeschi & Calhoun, 2004). While resilience develops during exposure to adversity, post-traumatic growth may be an outcome of that experience. In a study conducted by Barzilay et al. (2020), a high level of resilience was found to be associated with fewer COVID-19-related concerns among 3 042 respondents. In a cohort study of 768 participants (Shanahan et al., 2020), the coping strategies associated to lower levels of distress during the COVID-19 pandemic were maintaining a daily routine, physical activity and making use of strategies such as positive reappraisal or reframing.

To date, Canada counts more than 4 million confirmed cases within its borders (Worldwide Health Organization, 2022). In Quebec, the first case was confirmed on February 27, 2020, which marks the beginning of the first wave of COVID-19 outbreaks in Quebec. As of March 11, 2020, and over the course of several months, the Prime Minister held a daily press briefing to keep the population informed. That day, the Quebec government announced the first health measures: mandatory 14-day isolation for travelers, a ban on gatherings of more than 250 people, and encouragement of teleworking. On March 16th, daycares, schools and Canadian borders were closed. On March 22nd, the first lockdown in Quebec was announced. On March 24th,

all non-essential services (restaurants, bars, entertainment centers) were closed and on April 5th, this measure was extended. It was not until May 6th that a gradual resumption of services was initiated following the drop in outbreaks. In Quebec, the second wave of cases began in the fall of 2020 and other sanitary measures were undertaken to reduce the contamination curve.

Against this backdrop, this exploratory study, relying on a mixed-methods design, aimed to assess the impact of the first wave of the COVID-19 pandemic on Quebec youth, the difficulties they encountered and the strategies they used to deal with the situation. The primary objective of this study was to assess the frequency of psychological distress and PTSD symptoms related to the COVID-19 pandemic among cisgender youth and GSD youth as well as to document the perceived impact of the pandemic on their daily lives and routines and to observe possible post-traumatic growth. The second objective was to explore, through qualitative responses, the difficulties encountered by youth and the strategies they used to get through challenging times during the lockdown of the first wave of COVID-19 in Quebec. The purpose of this exploratory study was to provide an initial portrait of the psychosocial adaptation of young people at the beginning of the pandemic.

Methodology

Participants and Procedure

Participants were recruited through an online questionnaire, which was posted on various social networks (Facebook, Instagram, Snapchat, Reddit). Recruitment took place between April 21 and May 25, 2020, during mandatory confinement in Quebec. The Qualtrics platform was used to create the online questionnaire. This platform enables the use of parameters allowing anonymity for participants by giving them a random alphanumeric code. On social networks, the project was presented to participants as a study of adaptation during the COVID-19 pandemic. After completing the questionnaire, as a financial compensation, participants could enter a contest to win one of the $50 gift cards. The study design was approved by the ethics committee of the Université du Québec à Montréal. Informed consent was obtained electronically from participants after the nature of the procedures had been thoroughly described at the beginning of the questionnaire. In the province where the study was conducted, minors aged 14 and over can consent to research and no parental consent is required. The average time to complete the survey was 20 min ($SD = 34$).

There were 7 123 answers registered on the Qualtrics platform. Following preliminary analyses, 489 participants showed invalid responses due to duplicates,

similar responses throughout the questionnaire, or too short a completion time. Also, 2 177 participants had incomplete responses on the measures considered for the present analyses. The final convenience sample thus involved 4 914 Francophone youth aged 14 and 25 from the province of Quebec. The average age of participants was 19.94 (*SD* = 3.14). The majority of participants identified themselves as cisgender girls (64.2%), 33.5% as cisgender boys, and 2.3% identified themselves as gender diversity (trans, gender queer). A total of 78.1% of the sample reported heterosexual orientation, 6.2% homosexual orientation, 11.4% reported being bisexual, and 4.3% were questioning their sexual orientation. The vast majority of participants (91.6%) were of Quebec or Canadian origin. Participants reported being in school (31.1%), in school but also working part-time (41.0%), working full time (22.0%) or neither presently in school or working (5.9%). Of those in school, 22.6% attended high school, 30.1% attended CEGEP or a professional training center and 19.3% attended university.

Measures

Sociodemographic Variables Participants reported sociodemographic information (age, sexual orientation, occupation, etc.) at the beginning of the survey.

COVID-19-related Items These 21 items were specifically designed for this study and inspired by prior studies addressing the COVID-19 pandemic (Satici et al., 2020; Yildirim & Solmaz, 2020). They were used to assess how the pandemic and the confinement measures affected the behaviors and habits of youth. The items addressed several areas of daily life such as school, sleep, family and romantic relationships, entertainment, and fear and anxiety related to the virus. Participants could answer each item with a 4-point Likert scale ranging from Not true (0) to Mostly true (3). All COVID-related items are presented in Table 2.

Primary Care PTSD Screen for DSM-5 (PC-PTSD-5) PTSD symptoms were measured by the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5; Prins et al., 2016). The instrument usually starts with an item conceived to assess whether the participant has ever experienced a specific trauma. In the present study, the 5-item scale was answered in reference to the exposure to the COVID-19 pandemic. Participants were asked: "In relation to COVID-19, in the last month, have you …had nightmares about the event(s) or thought about the event(s) when you did not want to?", "Tried hard not to think about the event(s) or went out of your way to avoid situations that reminded you of the event(s)?", "Been constantly on guard, watchful, or easily startled?", "Felt numb or detached from people, activities, or your surroundings?"

and "Felt guilty or unable to stop blaming yourself or others for the events(s) or any problems the event(s) may have caused?". The participant could answer by yes or no to each item and the total score ranged from 0 to 5. A cut-off of 3 was identified as optimally sensitive to probable PTSD (Prins et al., 2016). In the present study, the internal consistency of the instrument measured by Cronbach's alpha was adequate (α = .70).

Kessler Screening Scale (K6) Psychological distress was measured using Kessler screening scale (Kessler et al., 2002). The scale contains 6 items and participants had to answer how often they felt "nervous", "hopeless", "restless or fidgety", "so depressed that nothing could cheer you up", "that everything was an effort" and "worthless". Response options range from Rarely (1) to Always (4) with the total score ranging from 4 to 24. We used the same cut-off as Kessler et al. (2003) and McGinty et al. (2020) to qualify serious psychological distress (scores from 13 to 24). The scale showed good internal consistency (α = .83).

Post-traumatic Growth (PGI) Four items related to post-traumatic growth were drawn from the Life Paths version (Hamby et al., 2015) of the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). Items were: "I changed my priorities about what is important in life", "I have a greater sense of closeness with others", "Now I know that I can handle hard times" and "I have discovered that I am stronger than I thought I was". Participants were invited to answer each item with a 4-point Likert scale ranging from Not true (1) to Mostly true (4). The continuous score ranged from 1 to 4. A dichotomous score was created where a score of ≥ .5 standard deviation of the mean was used to assess the presence of post-traumatic growth. The scale showed good internal consistency (α = .73).

Social Support Social support was measured using the social support items from the *Resilience Portfolio Questionnaire* (Hamby et al., 2018). The Social support seeking scale (5 items) aims to measure efforts to obtain help and attitudes towards asking for help while the Social support received scale (6 items) is designed to assess help or encouragement provided by others in times of distress (Hamby et al., 2020). The items of the Social support seeking scale were "Talking it out with someone helps me when I'm upset", "It helps me to discuss ideas with someone when I have a problem", "I feel better when I talk to people about what's going on", "I talk to someone to help me solve problems", "I ask people to help me make tough decisions" and "Talking to someone who has been through the same thing helps me". The five items of the second scale were "Someone was there for me when I was having a hard time", "Someone gave me a place where I could get away for a while", "Someone helped me

get my mind off things", "Someone went with me to get some help" and "Someone comforted me". These items are answered on a 4-point Likert scale ranging from Not true (1) to Mostly true (4). Two continuous scores were created ranging from 1 to 4, one for Social support seeking scale and one for Social support received scale. From each score, a dichotomous score was created. To be considered receiving or seeking social support, a score of ≥ 0.5 standard deviation from the mean was required. The two subscales showed high internal consistency (Social support seeking scale: α = .90; Social support received scale: α = .90).

Open-ended Questions In order to gather strategies and challenges encountered during the pandemic, respondents were asked two open-ended questions: "What do you find most difficult in the current situation?" and "What strategies are helpful to you in the current situation?". Two research assistants coded the responses.

Data Analysis

Quantitative Data Descriptive analyses were conducted to assess the frequency of probable PTSD symptoms and psychological distress and the impact of the pandemic on the habits of participants in our sample. To compare cisgender heterosexual youth to GSD youth, we grouped the gender and sexual orientation variables and divided the sample into three categories: 1) cisgender heterosexual boys (CH boys), 2) cisgender heterosexual girls (CH girls), and 3) GSD youth. The third category included youth who identified as transgender, queer, gay, lesbian, bisexual, or asexual. Chi-square analyses were conducted to compare the three groups on their level of clinical distress and possible PTSD as well as on the COVID-19-related items. A logistic regression was then conducted on posttraumatic growth to assess if sociodemographic variables and social support were significant predictors.

Qualitative Data A thematic analysis was conducted to explore the qualitative data. Of the total sample, 4 405 participants responded to the question on the difficulties they encountered and 4 284 answered the question on the useful strategies. To classify these responses, two research assistants individually categorized the first 200 answers to each

question by grouping them under themes. An answer could appear in more than one category. Then, the 2nd author of the manuscript (AJT) identified similar categories between the two assistants. Responses that had been rated differently were discussed to identify the appropriate category. Research assistants then assigned a category to all the remaining responses to each question. Along the way, if a recurring theme seemed to emerge, a team discussion was held to decide whether it was appropriate to add a category. Each response was rated according to whether the theme was present in the response (score of 1) or not (score of 0). A total of 20 categories were created for each question. In these analyses, the three most popular themes in each question, i.e., the most recurrent themes in the responses, will be illustrated. These themes were identified on the basis of descriptive data (i.e., frequencies).

Results

Psychological Distress and PTSD Symptoms Overall, 26.6% of the sample showed serious psychological distress. Applying the cut-off score proposed by Prins et al. (2016), findings revealed that 20.3% displayed probable PTSD symptoms. Chi-square analyses were performed on the percentage of cases reaching clinical levels of psychological distress and probable PTSD by groups. Results of the chi-square analyses and adjusted standardized residuals are presented in Table 1. Values greater than 1.96 flag observed values that are significantly different than expected. Inspection of these values revealed that CH boys were less likely to report serious psychological distress levels while GSD youth were more likely to achieve scores reflecting serious psychological distress. Results regarding probable PTSD symptoms showed that CH boys obtained lower rates than expected values, and both CH girls and GSD youth obtained higher values.

Perceived Impact COVID-19 and Confinement Measures The questionnaire related to perceived impact of the pandemic first assessed whether participants respected the quarantine measures and findings showed that the vast majority (97.2%) of respondents respected the imposed measures. Overall, a high proportion of youth was afraid that a member of their family could be infected (71.8%) or that they could be infected themselves (59.1%). Exploration of possible

Table 1 Percentage (adjusted residuals) of Participants Reaching Clinical Levels

	CH boys $n = 1\ 364$	CH girls $n = 2\ 449$	GSD youth $n = 1\ 101$	Total sample $n = 4\ 914$	χ^2
Serious psychological distress	16.3% (-10.2)	26.1% (-0.7)	40.4% (11.8)	26.6%	182.42***
Possible PTSD	11.6% (-9.4)	22.0% (2.9)	27.3% (6.6)	20.3%	102.10***

*** $p < .001$

differences between groups revealed that CH boys were less likely to be impacted while CH girls were more likely to be.

Items assessing the perceived impact of COVID-19 revealed that the majority of participants in the sample were affected by the social distancing measures (61.1%), the pandemic itself (76.1%) and reported that thinking about the pandemic impacted their daily mood (73.6%), their concentration (67.2%) and their sleep (57%). For all items, comparative analyses revealed that both CH girls and GSD youth obtained results reflecting greater impact relative to CH boys.

Globally, more than half of youth (56.5%) reported being worried about the impact of the pandemic on their school and academic trajectory. The confinement measures also had a negative impact as 40% of participants mentioned experiencing more conflicts in their family and 29.6% more conflicts in their romantic relationships. Inspection of adjusted standardized residuals suggest that GSD youth reported greater conflicts in their family since the pandemic while CH girls were more likely to report greater conflicts in their romantic relationships relative to youth in the other groups.

The pandemic and related confinement measures also affected daily routines, as 58% of the total sample mentioned eating more junk food, 29.6% endorsed items related to an increase in their alcohol consumption and 13% in drug consumption. As can be expected, the vast majority of youth (93.2%) spent more time on the internet and social networks, and 60.3% more time playing online games. Comparative analyses on these sets of items did not identify a consistent pattern. CH girls were more likely and CH boys less likely to spend more time on social media. However, CH boys were found to be more likely (82.5%) to play online games than CH girls (48%). Compared to CH boys and girls, GSD youth were more likely to report drinking more alcohol since the start of the confinement. Both GSD youth and CH boys were more likely to report using more drugs compared to CH girls.

The items that assess possible positive aspects of the confinement highlight that, overall, close to two thirds of participants reported having more time with members of their family (65.2%), to develop new hobbies (62.4%) while a bit more than half (54.9%) mentioned exercising more since the confinement. Also 37.9% of participants considered they had more quality time with their romantic partner and 30% mentioned they had started volunteering and offering help. Analysis of possible differences between groups indicates that CH girls were more likely to report these positive aspects while no differences between groups were noted for the items relating to the development of new hobbies (Table 2).

Posttraumatic Growth Items assessing post-traumatic growth revealed that for some youth, the pandemic brought them to the realization that they are now able to handle difficult times (71.7%). COVID-19 also contributed to them changing their priorities about what is important in life (67.4%) and to

discover that they were stronger than they thought they were (54.7%). Close to half of participants also agreed that they now had a greater sense of closeness with others (47.1%).

A hierarchical logistical regression was conducted to identify possible predictors of posttraumatic growth. Results are presented in Table 3. In the analysis, sociodemographic variables were entered in the first block as control variables and the two indicators of social support were included in the second block. The final model was significant ($\chi^2_{(2)}$ = 169.66, $p < .001$). Results revealed that ethnicity, seeking social support and social support received were significant predictors of posttraumatic growth. Participants who reported belonging to the Quebec or Canadian cultural group were more likely to report posttraumatic growth. In addition, youth who reported high scores on the social support received and seeking social support scales were more likely to show posttraumatic growth.

Qualitative Data With respect to the difficulties encountered during the beginning of the pandemic, the four most recurring themes were concerns related to social contacts (50.5%), the confinement measures per se (13%) and education (10.6%). Among the participants who had concerns with social contacts, several felt a general lack of socialization and human physical contact while many others were missing their loved ones (family, friends and romantic partner). The participants who reported difficulty with the lockdown itself wrote about challenges in two main spheres: limited outings and being locked in alone. Among the statements from participants who had education-related challenges, three preoccupations were common: issues related to distance learning, concentration or motivation at home and the school being closed. The three categories are presented in Table 4 with citations for each subcategory.

In terms of the strategies most frequently used by participants, maintaining social contact was seen as the optimal strategy by many participants (33.1%). Among these, many reported taking the opportunity to spend more time with the people they lived with, while others used social networks to maintain ties despite isolation. Several participants mentioned that enjoying leisure activities kept them busy and that lockdown allowed them to take more time for themselves (27.7%). Engaging in a lot of sports or physical activity was also a strategy reported by many participants (8.8%). These strategies are presented in greater detail in Table 5, illustrated with quotations from the database.

Discussion

The COVID-19 pandemic and associated health measures have significant psychosocial consequences. Previous studies have shown that the stress caused by the spread of the virus as well as adaptation to a new and

Table 2 Percentage of Participants Endorsing Items as Being True

Item	CH boys $n = 1\,364$	CH girls $n = 2\,449$	GSD youth $n = 1\,101$	Total sample $n = 4\,914$	χ^2
COVID-related					
I have respected the quarantine measures	94.9% (-6.0)	98.3% (4.8)	97.5% (0.7)	97.2%	37.51 ***
I am afraid that someone in my family is infected	61.4% (-10.0)	77.0% (8.0)	73.2% (1.2)	71.8%	106.26***
I am afraid of being infected with COVID-19	43.9% (-13.4)	67.4% (11.8)	59.5% (.3)	59.1%	199.83 ***
Mental health					
I am troubled by the social distancing measures	45.2% (-14.1)	67.9% (9.8)	65.5% (3.4)	61.1%	201.17 ***
Thinking about the pandemic affects my daily mood	57.9% (-15.4)	79.9% (10.1)	78.7% (4.4)	73.6%	237.69 ***
I have difficulty concentrating	58.7% (-7.8)	68.6% (2.1)	74.6% (5.9)	67.2%	73.46 ***
I am troubled by the COVID-19 pandemic	62.6% (-13.7)	82.4% (10.4)	78.7% (2.3)	76.1%	194.58 ***
I have trouble sleeping	43.0% (-12.3)	61.3% (6.1)	64.6% (5.8)	57.0%	153.39 ***
Relationships/School					
I am very worried about my school career	53.2% (-3.0)	57.4% (1.2)	58.8% (1.7)	56.5%	9.34 **
In my family there is more conflict because of the quarantine	36.4% (-3.2)	40.4% (0.6)	43.4% (2.6)	40.0%	12.80 **
Within my relationship, I experience more conflict	23.4% (-5.8)	32.7% (4.8)	30.2% (0.5)	29.6%	36.31***
Coping					
I spend more time on the internet and on social networks	90.9% (-4.0)	94.5% (3.6)	93.2% (0.0)	93.2%	17.79 ***
I play more online games	82.5% (19.7)	48% (-17.5)	60.1% (-0.1)	60.3%	433.98***
I eat more junk food	55.8% (-2.0)	58.4% (0.6)	59.9% (1.5)	58.0%	4.60
I've been drinking more alcohol since the start of the quarantine	28.4% (-1.1)	28.2% (-2.1)	34.1% (3.7)	29.6%	13.76**
I've been using more drugs since the beginning of the quarantine	15.2% (2.9)	9.2% (-7.8)	18.5% (6.2)	13.0%	66.55 ***
Positive aspects					
I have more quality time with my family members	63.9% (-1.2)	68.0% (4.2)	60.5% (-3.7)	65.2%	20.46***
I have developed new hobbies	61.1% (-1.2)	63.7% (1.8)	61.3% (-0.9)	62.4%	3.21
I exercise more	55.7% (0.7)	58.0% (4.4)	46.9% (-6.1)	54.9%	38.54 ***
I have more quality time with my boyfriend/girlfriend	28.3% (-8.5)	45.5% (10.9)	32.7% (-4.0)	37.9%	124.80 ***
I volunteer or have offered to help someone	26.4% (-3.5)	32.7% (4.1)	28.5% (-1.2)	30.0%	18.22 ***

$* \, p < .05$, $** \, p < .01$, $*** \, p < .001$

more restrictive lifestyle has caused great distress to the general population (Dubey et al., 2020; Guo et al., 2020). Some populations, including youth, may face particular challenges, as the pandemic could affect their social emancipation and identity (Courtney et al., 2020; Hawke et al., 2020). Through a mixed-methods design, the present exploratory study had two objectives. The first objective was to document the impact of the first wave of the pandemic on the mental health of youth in Quebec and identify how their habits were affected. The second objective was to identify what difficulties youth have encountered, and the strategies they used to cope with the situation.

Our results show that overall, 26.6% of youth presented serious psychological distress, which is similar to previous studies conducted in the general population during the pandemic (Casagrande et al., 2020; McGinty et al., 2020). Our results also revealed that 20.3% achieved scores qualifying probable PTSD symptoms, which is similar to the study by Castelli et al. (2020). However, studies show a great variability in rates (7% to 29%). This variability may be related to different factors, including the different scales used, the impact of the pandemic varying from one country to another, or from one cultural context to another (Casagrande et al., 2020; Forte et al., 2020; Liang et al., 2020; Liu et al., 2020). Our findings revealed that cisgender heterosexual boys are less likely to show distress while youth identifying as gender and sexual minorities are more vulnerable to distress. These findings corroborate those of Hawke et al. (2020) and suggest that sexually and gender-diverse youth are at greater risk in a pandemic context. In addition to restricting access to health care or psychological services, health recommendations and lockdowns may force them to stay at home with their families. In some cases, these families may not be respectful of their identities and the lockdown may keep them away from the LGBTQ+ community which offers support. This social isolation, in the context of a search for identity and self-assertion, may be related to increased distress.

Table 3 Results of the Hierarchical Logistic Regression Predicting Post-traumatic Growth

Variables	B	S.E	Wald's	p	OR	95% CI
Age: 14–18	.11	.07	2.16	.141	1.11	.97–1.27
(Reference group: 18 – 25)						
Occupation: not studying or working	.22	.14	2.56	.110	1.25	.95–1.65
(Reference group: Studying and/or working)						
Group: CH girls	.04	.08	0.29	.591	1.05	.89–1.22
Group: GSD youth	-.16	.10	2.66	.103	0.85	.70–1.03
(Reference group: CH boys)						
Ethnicity: Other	.37	.12	10.07	.002	1.45	1.15–1.82
(Reference group: Quebec or Canadian cultural group)						
No social support requested	.44	.07	36.89	< .001	1.55	1.35–1.79
(Reference group: social support requested)						
No social support received	.63	.07	77.32	< .001	1.88	1.63–2.16
(Reference group: social support received)						

Final model: $\chi^2_{(7)}$ = 188.95, p < .001; *OR* odds ratio

The COVID-19 pandemic is a major stress associated with a fear of infection, as overall 59% of young people are afraid of being infected and 72% fear that a family member may be infected. In addition, youth report that during confinement, the pandemic has affected their daily mood, sleep and concentration and has had an impact on their habits. Indeed, COVID-19 and subsequent confinement measures appear to have resulted in increased consumption of junk food, alcohol and, to a lesser extent, drugs. Several studies have found that there is a change in the population's eating habits and in their consumption of alcohol and drugs during the pandemic (Biddle et al., 2020; Kim et al., 2020; Ruiz-Roso et al., 2020). For some individuals, this is an opportunity to reduce their intake, while for others, the confinement may be driving them to consume more. One study showed that some families had more time to cook healthy foods, but the results showed no improvement in the quality of the overall diet (Ruiz-Roso et al., 2020). Also, for some more vulnerable individuals with a history of problematic substance use, confinement may increase the risk of relapse (Kim et al., 2020).

Half of the youth had concerns about their education, which can be explained by the reorganization of institutions to adapt to the health measures related to the pandemic. During the lockdown of the first wave of COVID-19 in Quebec, schools were forced to close. As a result, the education system underwent major changes to adapt to distance learning, leaving youth without structured support and guidance for several weeks.

The results of the present study also highlight the diversity of reactions and perceptions of the impact of the pandemic. For example, some youth report that being locked in has been an adversity that allowed to consolidate bonds with family members in some way, and that they have had the opportunity to spend more quality time with their romantic partner. It should be noted that these are outcomes more often reported by cisgender heterosexual girls and less likely reported by GSD youth. Indeed, GSD youth are more likely to report that the situation may have exacerbated existing family conflicts.

Qualitative data on the difficulties encountered by youth revealed three recurring themes. Lack of social contact was the most cited difficulty. Some participants missed their loved ones while others felt a general lack of socialization. These results are not surprising considering that social support is an important protective factor among youth (Chu et al., 2010) and that the lockdown increased isolation for some specific populations (Van Gelder et al., 2020). The qualitative data from our study reflects well on the results of the pandemic-related items of the survey. Responses to items related to the impact of the pandemic on habits also showed that the majority of the sample were troubled by the social distancing measures related to the pandemic. The testimonies also highlight the frustration of young people of missing out on landmark events such as graduation, childbirth or the beginning of higher education.

The lockdown itself was also considered particularly challenging for some participants. Indeed, some youth felt trapped because they were not able to go out and others, living alone, found it difficult to be alone with one's thoughts. Studies show that this lockdown-related distress may be caused by several elements. Confinement may increase the risk of victimization for the LGBTQ+ community (Silliman & Bosk, 2020), people living with domestic violence (Van Gelder et al., 2020) or abuse. For others presenting with pre-existing mental health issues or physical disabilities,

Table 4 Sample Quotes – What is Most Difficult in the Current Situation?

Main Themes	Description	Quotes
Social contacts (50.5%)		
Human contact in general	Lack of socialization in general is one of the difficulties encountered during confinement. Not seeing people, not having a social circle outside of their family was highlighted by participants as being challenging	"To no longer see people other than my family"
		"Lack of human contact on a daily basis"
		"No longer have social contact with the general population"
		"What I find the most difficult is not seeing my friends because with friends the relationship is different than that with your family members. I talk about things that I am passionate about, things we have in common"
		"What I find most difficult is not having my last moments with my friends with whom I spent all my high school years. Not having a prom makes me cry because I've been waiting for this moment since I started high school"
Not being able to see those they love	The inability to see loved ones, friends, family or romantic partners was considered a concern during lockdown	"Not being able to go see my dad who is sick"
		"Not being able to hug my loved ones, not being able to go and spend time with my friends at home or in a bar as well"
		"Not being able to see my boyfriend because we don't live together and not being able to see my sisters because they no longer live with my mother. Also, I find it difficult not being able to have physical contact with people at work and not being able to get close to them"
		"Not being able to visit my mother whom I love more than anything. She can no longer spend time with my 10-month old baby. Not being able to see my friends and their children growing up so fast. These are moments that will not come back. Not being able to see my grandfather who recently had surgery"
Lockdown (13%)		
Limited outings	«Not being able to go out» is considered to be one of the hardest things to experience during the pandemic	"Being locked in my house"
		"Being cut off from the outside world"
		"[...] I am trapped in my own home with a lazy father who lets my mother do all the work, and a brother who has anger management problems. The clutter is suffocating me, so I spend most of my time in my bedroom, which is the only room that is not a mess. The mess is so big that you have to sneak into the house. There are smells. There are mice living in the walls. The insects invade the house and my parents don't seem to be bothered"
		"What I find difficult is not being able to leave my house. Being at the end of the semester; I do homework all day, but I can't reward myself by doing an activity such as going to a movie or a restaurant"
		"No possibility to isolate oneself to calm down after a conflict or a fight. I can't go outside, I can't go to a friend's house. The fact that that we don't have time to be alone make the problems worse"

Table 4 (continued)

Main Themes	Description	Quotes
Being alone	Being in isolation alone is also a significant negative aspect of lockdown	*"Staying 24/7 alone in my apartment without anybody"*
		"I find the most difficult thing is to be with myself 24 h a day"
		"Not being able to go outside and see people… I feel like I'm trapped inside and not being able to see people scares me because when I'm alone at home I'm scared of what's going through my head"
		"To be alone in my 1 1/2 apartment when the rest of my family and my boyfriend are in another province"
		"Lack of human contact. Staying alone in my apartment. Having got separated, it's hard to adjust to being alone, considering that I can't see my friends who might be able to support me in this transition"
Education (10.6%)		
Distance learning	Completing a school year at a distance either through videoconferencing or self-directed learning is a challenge for some participants. The lack of institutional supervision is also highlighted	*"I hate distance learning"*
		"The CEGEP now requires me to teach the subject myself and has tried to offer the same performance as when I had teachers to support me and answer my questions [...]"
		"The distance school, the overload of university work and the indifference of teachers to the situation"
		"Staying at home and not seeing my friends anymore. I find it sad that I couldn't really live the end of my CEGEP at the CEGEP. I also find it sad that I won't be starting university in person. It's like I'm missing out on part of education and it's also difficult because I don't know when everything will go back to the way it was before"
Difficulty concentrating and being motivated	Many participants also have difficulty concentrating and finding the motivation to do assignments and studies at home	*"Find the motivation to continue and finish my session at the university and not spend whole days in front of my computer"*
		"The overload of school work when it is very difficult to concentrate at home"
		"I find it really difficult to study and concentrate at home; I usually manage to do all my work and study at the library or in a restaurant"
School on pause	The youth also found it difficult to have school on break	*"Not being able to continue my schooling"*
		"Having to drop out of school because I am not able to go to school remotely"
		"Being unable to go to school"

Table 5 Sample Quotes – What Strategies are Helpful for You in the Current Situation?

Main Themes	Description	Quotes
Social contacts (33.1%)		
Interactions with close ones who live with them	For some participants, contact with those with whom they live (love partner, family, roommates) is a strategy for feeling better in times of pandemic	*"I live with my girlfriend so we encourage each other, we cook a lot, we take advantage of the good weather (when it is there). She encourages me a lot in my studies"* *"I try to make the most of the time I have with my family and my lover"* *"Having my roommates with whom I share more things now also helps the time pass quickly until we can join our respective families"*
Maintain contact trough social networks, videoconference and phone calls	The use of social networks, videoconferencing platforms and telephone calls serve as a strategy for maintaining contact with loved ones	*"I did some video conferences with my friends on Zoom. I often text my family by messenger"* *"Frequent calls with family and friends, wondering how things are going and supporting each other"* *"Do a lot of Facetime with my father. I also started writing him letters that I send by mail and we correspond that way. It's even better than talking on the phone about me. It puts a balm on our days"* *"Talking with my teachers helped me a lot. Several of them helped me. We need to reflect on how we tackle this adversity and learn about this situation"* *"Chat with my friends and talk to people I don't know on common interest groups online"*
Leisure (27.7%)		
Time for hobbies	A popular strategy to get through the pandemic is to keep busy with hobbies and to take time for oneself	*"Have small projects like drawing, gardening, building stuff or playing video or online board games with my friends. These are often the best times I spend during confinement"* *"I try to occupy my mind as much as possible. I read, I play the piano, I write, I draw, I learn Spanish, I learn about something else…"* *"To take my mind off things by drawing, reading, listening to shows or movies, playing video games or taking walks with my dog"* *"I continue to live my life and keep myself busy. I also like to think that what I am going through is an experience that will make me a better person. I have started new activities like cooking, playing games, and reading"* *"I take the time to dance, sing, read books, listen to music, watch series, escape in videogames. And all of these things in mindfulness! Always stay conscious about the chance we have (most of us) to access all of things in a time of crisis"*

Table 5 (continued)

Main Themes	Description	Quotes
Sports (8.8%)		
Time for sports	Physical exercise is another pandemic coping strategy that many participants used	"I train almost every day, which helps my mood and energy level" "Physical training helps me regain the upper hand" "I am much more physically active than I used to be. It helps to clear my mind" "Enjoy the free time we have to do more physical activities"

confinement is also challenging as the availability and provision of support services may be impacted.

The third most cited difficulty was related to education. Answers to open-ended questions revealed that many youth had issues adjusting to distance education and the lack of supervision. Others faced difficulties in concentration and experienced a significant drop in motivation, while some worried about having their schooling on break. This is consistent with the quantitative responses to items related to the impact of the pandemic on habits, as the majority of participants reported being worried about their educational trajectory and having difficulty concentrating.

Although many of the participants faced challenges associated with the pandemic, many also found strategies that helped them adapt to this new reality. According to the responses to the open-ended question, maintaining social contact was the most prevalent strategy. Several participants took the opportunity to spend time with their loved ones living in the same household, which is in line with the quantitative data indicating that many participants spent more time with their families and romantic partners. Others maintained contact through social media, phone calls, and videoconferencing. The quotes also highlight the benefits of support from various sources such as teachers, family and friends as well as strangers sharing similar interests on online support groups.

The other strategies used were engaging in leisure activities (e.g. reading, painting, playing piano, learning a new language) and physical exercise. These strategies mentioned by the participants also fit the items on the impact of the pandemic on daily life. Indeed, more than half of the sample reported discovering new hobbies and getting more exercise.

The qualitative data do not allow us to assess the quality of the strategies used and the link to participants' psychological distress. However, previous studies show that some factors may promote resilience, such as social support (Bonanno et al., 2007; Lai et al., 2015) and finding distractions to laugh and have fun (Keltner & Bonanno, 1997). Also, Shanahan et al. (2020) found that physical exercise as a coping strategy during the COVID-19 pandemic was associated with reduced distress. These results are consistent with the strategies employed by participants in this study.

Adverse life events may also serve to foster post-traumatic growth. Tedeschi and Calhoun (1996, 2004) propose that post-traumatic growth may occur when an event comes to question the individual's beliefs about themselves, others and the world, and reflections on the situation allow for growth in recognizing personal strengths (Robles-Bello et al., 2020). A significant proportion of youth realized they could handle hard times and discovered they were stronger than they thought they were. As one youth mentioned: "I also like to think that what I am going through is an experience that will

make me a better person". In exploring factors related to post-traumatic growth, the results of the hierarchical logistic regression highlight the importance of social support in the youth's environment. Our findings show that, during the first wave of the pandemic, the critical factors related to more post-traumatic growth are seeking and receiving social support. These findings are similar to those obtained in the literature which highlight social support being related to higher psychological functioning (Chu et al., 2010; Hamby et al., 2020). In fact, one study shows that youth who receive social support, but also seek it, show the most psychosocial strength (Hamby et al., 2020). Therefore, in conceptualizing resources for youth in the context of a pandemic, it would be important to offer support to more vulnerable youth (ethno-cultural, sexual, and gender diversity) to compensate for the realities that some families may not offer them an optimal level of social support. However, it would also be important to ensure that follow-up is offered when a youth request support and that organizations are available to meet their needs since we also want to encourage seeking social support among youth.

Limitations

This study needs to be considered in the light of certain limitations. First, the use of a convenience sample limits the generalizability of the results. The sample is exclusively French-speaking and composed of individuals from Quebec, therefore the findings are not necessarily representative of youth in other countries. Second, the cross-sectional design does not allow to establish a causal relationship over time, which means that these results are strictly representative of the lockdown of the first wave of COVID-19 in Quebec and further studies are needed to assess the evolution of the situation during the subsequent waves of the pandemic. Finally, it is impossible to determine whether PTSD and psychological distress symptoms related to the pandemic are due to fear of the virus itself or to health measures (confinement, social distancing, restriction of access to services), as the items are general and do not specifically measure either one or the other. The PTSD scale used in this study is designed to screen individuals with probable PTSD, and further assessment with a structured interview or a more comprehensive self-report measure is generally warranted following a positive screen. In addition, the rates of probable PTSD might have been overestimated given that the life-threat trauma criterion was not directly assessed.

Despite these limitations, this study documents a wide range of behaviors, attitudes, and thoughts related to the pandemic among a large sample of youth. The richness of the qualitative data allowed us to add to the quantitative data and describe well the experiences of the participants during the confinement from both a positive and negative perspective.

The present study offers some cues to better understand the challenges faced by youth, which may be useful, namely for professionals working with vulnerable populations such as gender-diverse youth. For example, being aware that not all youth benefit from support from their peers and families, may facilitate a more personalized approach in implementing resources during the pandemic. Further data on vulnerable youth, such as youth with a history of trauma, is warranted. Research must also continue assessing how COVID-19 impacts the lives of youth, as adaptation to the pandemic may reflect an important indicator of resilience in individuals. Future studies should also rely on standardized measures of the impacts of COVID-19 considering the virus may be part of everyday life due to its many mutations.

Conclusion

In conclusion, this study allowed for an exploration of the difficulties encountered and strategies used by youth during the lockdown of the first wave of COVID-19 in Quebec. Youth faced specific challenges and some experienced psychological distress and probable PTSD symptoms that need to be considered. It is also essential to highlight their adaptability, as some youth have used coping strategies or benefited from support in the face of adversity. While the pandemic has negative psychological consequences among the population, it is also important to understand what helps youth overcome the challenges. Such information could offer cues for the design of services addressing the needs of all youth.

Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

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