

Overcoming Isolation: Teenagers' Connectedness to Others During the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic was characterized by loneliness, especially among teenagers. This study explored the coping mechanisms, activities, challenges, places visited, and sources of support that predicted teenagers feeling connected to others during COVID-19. Data come from surveys administered in the United States and Canada in summer 2022. Multivariate logistic regression showed that producing personal protective equipment, supporting siblings, getting involved in the local community, becoming more politically active, and taking language classes were positively associated with connectedness. In addition, teens in Canada were more likely to feel connected to others than teens in the United States. These findings can inform policies to enhance resilience in teenagers during protracted crises.

Keywords: COVID-19, teenagers, connectedness, isolation, resilience

Introduction

The COVID-19 pandemic highlighted the adolescent mental health epidemic in the United States and Canada, and the ways in which social isolation and connectedness can shape the resilience of teenagers during protracted crises. Research has mostly focused on the *negative* effects of social isolation during the pandemic: poor academic performance, difficulty making friends, increased anxiety, behavioral problems, emotional distress, and suicide (Garriguet, 2021; Government of Canada, 2020; O'Sullivan et al., 2021). This negative focus, and a corresponding dearth of studies on the potential for adolescent resilience and agency, reinforce a discursive framing of adolescents as passive, vulnerable recipients of policies, programs, and circumstances beyond their control. Like Fothergill and Peek (2015), Masten and Motti-Stefanidi (2020), Percy-Smith et al. (2022), and Zhang et al. (2020), we foreground the possibility that adolescents possess and deploy capabilities in crises in addition to vulnerabilities. This article explores the relationship between social isolation, connectedness, and resilience in the context of the COVID-19 pandemic, with a specific focus on how teenagers cultivated resilience through building and maintaining social connections. Expanding on the work of other scholars (Bond et al., 2007; Orben et al., 2020), our starting point is that connectedness is positively associated with resilience and coping capacity (Brown & Westaway, 2011; Parsons et al., 2016). Our inquiry thus centers on what fosters a sense of connection in teenagers.

Amplification of Teenage Mental Health Challenges During the Pandemic

Pre-pandemic, 10-20% of teenagers worldwide encountered mental health challenges (Kieling et al., 2011). However, in Canada as of 2020, 4% of children and teenagers had only fair or poor mental health as reported by their parents and guardians. This rate was much higher among older youth ages 15-17, with stark gender differences—10% of boys compared to 24% of girls reported fair or poor mental health (Government of Canada, 2020). Youth from lower-income Canadian households were also less likely to report excellent or very good mental health and were more likely to contemplate suicide than their more affluent counterparts (Garriguet, 2021). In the United States, the pre-pandemic state of the mental health crisis among teenagers was even more acute. In 2016-2019, over one in five children living below the federal poverty level had a mental, behavioral, or developmental disorder (CDC, 2022). Twenty-one percent of all 12-17-year-olds reported experiencing a "major depressive episode," and 36.7% of high school students reported persistent feelings of sadness or hopelessness (Bitsko, 2022). Girls in high school were more likely than boys to report suicidal ideation, attempt suicide, and require medical treatment after a suicide attempt (Bitsko, 2022). Black and Hispanic children ages 5-17 were nearly 50% less likely to seek mental health services in comparison to non-Hispanic Whites (Marrast et al., 2016). These findings underscore the urgency of delving deeper into both the amplifying impact of protracted crises on adolescent mental health, and the ways in which sociodemographic factors including age, gender, race, and class intersect to produce different outcomes.

The COVID-19 pandemic has exacerbated the youth mental health crisis worldwide (de Figueiredo et al., 2021; Imran et al., 2020). Notwithstanding the physical harm

wrought by COVID-19, shelter-in-place orders magnified the effects of social isolation and resulted in a total disruption of normal routines among teens living in the United States, the United Kingdom, and Australia (Gruber et al., 2021; Hyde et al., 2021; Shukla et al., 2023). The pandemic illuminated significant barriers to accessing mental health care, including breaks in care, limited access to telehealth resources, mental health professional shortages, and societal stigma (Panchal et al., 2021). Pre-existing mental health conditions worsened due to isolation, uncertainty, lack of daily routines, and limited access to health services (Jones et al., 2021). In a rapid scoping review of 63 studies, Loades et al. (2020) found that children and adolescents were more likely to experience high rates of depression and anxiety during and after enforced isolation early in the pandemic, which the researchers anticipated would escalate with ongoing isolation. Relatedly, an Irish study found that adverse mental health effects such as social isolation, depression, and anxiety were particularly pronounced among young people (O'Sullivan et al., 2021).

Such findings are also reflected in empirical evidence in both the United States and Canada. Magson et al. (2021) observed significant increases in symptoms of depression, anxiety, and suicidality reported among American teenagers ages 13-16. The U.S. Centers for Disease Control and Prevention (CDC) described a similarly worrying trend among American teenagers, where 37% of high school students reported experiencing poor mental health during the COVID-19 pandemic, and 44% reported persistently feeling sad or hopeless during the past year (CDC, 2022). In Canada, 57% of study participants ages 15-17 reported a decline in their mental health during the pandemic (Government of Canada, 2020). The findings from these studies underscore the need to not only pursue solutions from governmental agencies and health authorities, for example, but also to investigate the strategies that teenagers themselves can adopt to develop resilience.

Connection and Resilience through Social Capital

As highlighted by Magson et al. (2021), promoting connection and a sense of belonging among adolescents during and after periods of isolation is a promising approach in building resilience. Encouraging engagement and connectedness enables teenagers to cultivate agency and resilience, thereby enhancing their control over their own mental health outcomes (Bond et al., 2007; Orben et al., 2020). We can use social capital theory to help us understand the mechanisms behind building and maintaining these crucial connections.

Social capital theory provides a valuable framework for exploring how one builds connectedness. *Bonding social capital* involves relationships within a group or community, *bridging social capital* refers to connections between different social groups, and *linking social capital* pertains to relationships among individuals or institutions at different levels of the societal power hierarchy (Szreter & Woolcock, 2004; Woolcock, 2001).

Social capital, including the networks, norms, and trust that facilitate cooperation and coordination among people and groups, can positively impact resilience during and after disasters. Research by Hawkins and Maurer (2010) on disaster resilience

after Hurricane Katrina found that strong ties within a group or community (bonding social capital) were more important for emotional support, while connections between different groups or communities (bridging social capital) were more critical for accessing crucial resources and information needed in recovery. Similar findings were observed in Pitas and Ehmer's (2020) study in Puerto Rico after Hurricane Maria. Alternatively, Poortinga's (2012) study on floods in the U.K. suggested that bridging social capital was a more effective predictor of fostering resilience and connectedness than in-group, bonding social capital. Wong and Kohler's (2020) research on the 2011 earthquake and tsunami in Japan found that bridging social capital was more crucial than bonding social capital for disaster recovery and building resilience. Social capital clearly shapes disaster outcomes, which elicits the question: what activities, interactions, and coping mechanisms can teenagers embrace to develop social capital and a sense of connection during times of crisis?

Teens who participate in extracurricular activities, such as sports teams, clubs, or volunteering, build their social capital by connecting with community members and organizations (Darling et al., 2005; Eccles & Barber, 1999; Linver et al., 2009; Taylor et al., 2017). Community engagement such as volunteering and church activities has been linked to positive educational trajectories, particularly among racially diverse groups and those from both low- and middle-class families (Eccles & Barber, 1999; Taylor et al., 2017). Moreover, academically disadvantaged youth may derive greater benefit in terms of connections gained from extracurriculars than those from upper- or middle-class backgrounds (Linver et al., 2009).

Teenagers also build social capital through civic engagement and participation in political activities (Duke et al., 2009; Kahne et al., 2006; Kim & Morgül, 2017). High school student engagement plays a pivotal role in fostering norms for civic commitment and engagement, social trust, and knowledge of social networks (Duke et al., 2009; Kahne et al., 2006). Relatedly, Kim and Morgül (2017) emphasize that neighborhood resources and safety enhance adolescents' community involvement, while noting that socioeconomic disadvantages reduce their likelihood to volunteer.

Teens' social capital grows through the relationships they build with peers and adults, such as teachers and mentors; these people, in turn, can provide social support and enhance teens' feelings of connectedness (Hughes et al., 2001; Rhodes et al., 2000; Wentzel & Caldwell, 1997). Conversely, teenagers who do not engage in social (Scales et al., 2011; Shanahan et al., 2007), extracurricular (Wilson, 2009), or civic (Bohnert et al., 2010) activities feel less connected and experience more social isolation. These activities that foster connectedness, however, were greatly impacted by COVID-19 school closures and shelter-in-place orders (DiGiacomo et al., 2022).

Digital Opportunities Amid Pandemic Disruptions

The pandemic-catalyzed upheaval of routine activities and increased reliance on digital technologies have had mixed impacts on teens' connectedness. The shift to virtual formats did not provide the same level of engagement or social connection as in-person activities (Lee et al., 2021; Scott et al., 2021). The pandemic

disrupted traditional forms of civic and political engagement, such as volunteering and community service (Arya & Henn, 2021; Theocharis & Moor, 2021). It also led to social distancing guidelines and restrictions on in-person gatherings, which may have reduced opportunities for teens to build and maintain relationships with peers and adults. However, the pandemic also provided new situations and avenues for teenagers to reclaim control of their mental health outcomes. Many teens have used technology to build resilience through staying connected with friends and family, and some have even reported feeling closer to their family members during the pandemic (Ellis et al., 2020; Fish et al., 2020). Relatedly, recent literature has highlighted the numerous methods leveraged by teenagers in building relationships across online spaces such as music collaboration (Crooke et al., 2021), political engagement with Black Lives Matter (Estellés et al., 2022; Bishop et al., 2022), civic engagement (Mohamad, 2020), and online gaming (Hsu & Chang, 2022).

Building on this literature review, this study probes what enabled teenagers ages 12-18 in the United States and Canada to feel connected to other people during the COVID-19 pandemic based on nationally representative surveys administered in summer 2022.

Methods

Sample and Data Collection

Data for this analysis come from our *Life in COVID* Study (Gibb et al., 2023), a mixed-methods, multi-year study that aims to understand the lived experiences of children, teens, and older adults in the United States and Canada during the COVID-19 pandemic through the lenses of vulnerability, mobilities, and capacities. In July 2022, the research team conducted three, nationally representative online surveys in the United States and Canada of parents or guardians of children ages 5-11, teenagers ages 12-18, and older adults ages 65 and over. The analysis presented in the current paper solely uses the data collected from teenagers.¹ Respondents were asked about their challenges, coping strategies, activities, and relationships during the pandemic, as well as their history with COVID-19 and their sociodemographics.

Qualtrics recruited participants and administered the survey on their secure online platform in English, French, and Spanish in July and August 2022. Qualtrics identified potential participants through avenues such as website intercepts, referrals, email lists, gaming sites, customer loyalty portals, and social media platforms. Quotas were applied to ensure representativeness of respondents in terms of age, gender identity, race/ethnicity, and primary spoken language. All respondents provided informed assent/consent at the beginning of the survey and were compensated with an amount agreed upon with Qualtrics in the form of gift cards, airline miles, or rewards points at retail outlets. Parent or guardian consent

¹ The 12-year-olds are included in the teenager category for two reasons: (1) The age range of the first COVID-19 vaccines approved for minors was 12 to 17 years old, and (2) we determined that 12-year-olds can complete the survey on their own without assistance from an adult.

was also obtained for those respondents under the age of 18. Data were quality checked by both the research team and Qualtrics in the form of attention checks and assessment of short answer responses. There were 1,002 good quality responses by the close of the survey period for an incidence rate of 23%. Surveys took an average of five minutes to complete. All procedures were approved by the Institutional Review Board at the University of Vermont and the Research Ethics Board at the University of Ottawa.

Measures and Analytic Strategy

Our outcome of interest was whether teenagers felt connected to others during the pandemic. It was based on the question, "Which of the following best describes how you have felt during the pandemic?" where one of several response options was "Connected to other people." Those respondents who did not check this box were treated as not feeling connected to others. Our primary exposures of interest were teenagers' activities, challenges, coping strategies, sources of support, and places visited during the pandemic. Appendix A shows all the options for these questions in the survey, where each response was categorized as "yes" or "no."

Covariates of interest included the following sociodemographics: gender, age, race/ethnicity, religion, place of residence (including region in Canada), primary language spoken (in Canada only), annual household income (in USD), and parental marital status. Appendix A shows the response options for each of these variables. Covariates related to history with COVID-19 included personal and household experience with COVID-19 based on responding in the affirmative to any of the following: had COVID-19, was hospitalized, was symptomatic, or had long-term symptoms or other health problems. Respondents were also asked whether their household had experienced job loss or reduced working hours due to the pandemic; whether they had received a COVID-19 vaccine; and whether they would socialize with those who had not been vaccinated.

We conducted bivariate analyses using Pearson's chi-square tests followed by univariate and multivariate logistic regression to predict whether a teenage respondent felt connected to others. We built five multivariate models, each focusing on a different aspect of teenagers' COVID experiences: extracurricular activities (Model 1), sources of support (Model 2), coping mechanisms (Model 3), pandemic-related activities (Model 4), and challenges faced (Model 5). All analyses were conducted in Stata 17 (StataCorp, 2021).

Results

Appendix A shows the results of univariate and bivariate analyses. The vast majority of teenage respondents (92%) reported not feeling connected to others during the pandemic. Over half (52%) of participants identified as female, 46% as male, and 2% as gender non-binary or other. Twenty-five percent of respondents were 18 years old, while ages 12-17 were more evenly distributed. Exactly half lived in the United States and Canada, respectively, and among Canadians, the majority primarily spoke English (71%) as opposed to French (20%) or another language (8%) and resided in Central (61%) or Northern Canada (16%). Most respondents identified as White/Caucasian (75%), followed by Asian/Pacific

Islander (13%), Black/African American/Canadian (8%), Hispanic/Latinx (4%), and Indigenous/Native American/Alaska Native (3%). Most teenagers identified their religion as Christianity (57%), though sizable portions reported being Atheist/Agnostic (13%) or preferred not to share their religious beliefs (14%). Annual household income was relatively normally distributed, centered around the \$50,000-\$99,000 range (30%). Most teenagers' parents or guardians were married or in a domestic partnership (62%), though 26% lived in single-parent households.

In terms of experiences with the COVID-19 virus, 46% had become ill from the virus themselves and 61% had household members who had. Thirty-five percent reported that a member of their primary household had been economically impacted by the pandemic. The vast majority (77%) were vaccinated against COVID-19, followed by 14% who had not and would not be vaccinated. Of those who had been vaccinated, 42% said they would unconditionally socialize with those who had not been vaccinated, while 31% said they would do so, but only according to public health guidelines.

The most common extracurricular activities during the pandemic were sports or dance (28%), music (26%), and fine arts (23%). However, 34% of respondents had not participated in any of the listed extracurricular activities during the pandemic. It should be noted that the survey did not distinguish between virtual and in-person extracurricular activities. The most visited places during the pandemic included parks/natural environments (50%), grocery stores/pharmacies/retail stores (50%), school/childcare facilities (42%), neighborhood streets (39%), friends' homes (37%), and grandparents' (30%) and other family members' (30%) homes. The most endorsed challenges were the inability to visit friends (62%), go to school (49%), or do usual activities (46%), as well as missing important milestones (43%) and being afraid of going out and catching COVID-19 (42%). The most practiced coping mechanisms were connecting with friends remotely (69%), playing video games (51%), spending time with a pet (40%), and connecting with family members (36%) and teachers and classmates (32%) remotely. Only 5% percent reported engaging in harmful coping behaviors. Most teens reported that they sought help from family members (80%), followed by friends (54%), and teachers/coaches (22%). The most popular pandemic-related activities included reaching out/providing support to a friend or family member (30%), running errands for a friend or family member (28%), helping a sibling with homework (24%), and creating artwork or food for someone (23%). Nearly 24% did not participate in any of the listed activities.

Based on bivariate analyses, those who participated in several activities were more likely to report feeling connected to others, including music (e.g., lessons, band, choir) ($p = 0.01$), religious activities ($p = 0.04$), language classes ($p = 0.01$), volunteer or community service projects ($p = 0.03$), and general activities (e.g., Girl Scouts/Girl Guides) ($p = 0.01$). Those who did not report participating in any activities were less likely to feel connected to others ($p = 0.01$). Of places visited during the pandemic, only school or a childcare center was negatively associated with feeling connected to others ($p = 0.01$). In terms of challenges, those who were unable to visit their friends were less likely to feel connected ($p = 0.04$), while those

who missed summer camp were more likely to feel connected to others ($p < 0.01$). Those whose coping mechanisms included talking or playing with neighbors ($p = 0.01$), volunteering ($p = 0.03$), talking with a trusted adult ($p = 0.04$), or becoming more politically active ($p < 0.01$) were more likely to feel connected to others. Those whose sources of support included teachers or coaches ($p < 0.01$), neighbors ($p = 0.01$), or religious clergy ($p < 0.01$) were also more likely to feel connected to others. The following pandemic-related activities were associated with feeling more connected to others: taking on a job to help family with expenses ($p = 0.01$), making personal protective equipment to donate ($p < 0.01$), helping a sibling with homework ($p < 0.01$), and helping someone get a vaccine ($p < 0.01$). Those who reported not doing any activities ($p = 0.03$) or did not report any religious beliefs ($p = 0.01$) were less likely to feel connected to others.

Table 1 shows the results of univariate and multivariate logistic regression predicting the association between select extracurriculars and feeling connected to others. Controlling for gender, age, and country of residence, those who participated in language classes [aOR (adjusted odds ratio) 2.21, 95% CI (confidence interval) (1.22, 4.00)] were over twice as likely to report feeling connected to others compared to those who did not, while those who did not participate in any of the listed extracurriculars (aOR 0.42; 95% CI 0.20, 0.89) were over 60% less likely to feel connected.

Table 1. Logistic regression predicting the association between extracurriculars and feeling connected. 12-18 age group, N =1002

Factor	Crude Odds Ratio (95% CI)	p-value	Multivariate Odds Ratio (95% CI) ^a	p-value
Gender				
Male	1.00		1.00	
Female	0.62 (0.39, 0.99)	0.05	0.67 (0.42, 1.09)	0.11
Non-Binary or other	1.38 (0.39, 4.81)	0.62	1.26 (0.34, 4.64)	0.73
Age				
12 to 18	1.01 (0.90, 1.13)	0.90	1.04 (0.92, 1.18)	0.49
Country of Residence				
Canada	1.00		1.00	
United States	0.67 (0.42, 1.06)	0.08	0.6 (0.37, 0.99)	0.05
Extracurriculars				
Music activity (e.g., lessons, band, choir)	2.37 (1.49, 3.77)	0.01	1.54 (0.93, 2.54)	0.09
Religious activity	1.75 (1.03, 3.00)	0.04	1.37 (0.78, 2.43)	0.27
Language class	3.31 (1.88, 5.82)	0.01	2.21 (1.22, 4.00)	0.01
Volunteer or community service project	1.98 (1.07, 3.66)	0.03	1.38 (0.71, 2.65)	0.34
General activities (e.g., Boy/Girl Scouts/Guides)	2.57 (1.48, 4.48)	0.01	1.75 (0.97, 3.15)	0.06
None of the above	0.25 (0.13, 0.49)	0.01	0.42 (0.20, 0.89)	0.02

^a Controlling for gender, age, and country of residence

Table 2 shows the results of univariate and multivariate logistic regression predicting the association between sources of support and feeling connected to others. Controlling for gender, age, and country of residence, those who sought support from teachers or coaches (aOR 1.97; 95% CI 1.20, 3.25), neighbors (aOR 1.97; 95% CI 1.07, 3.62), and religious clergy (aOR 2.51; 95% CI 1.27, 4.95) were significantly more likely to feel connected to others. However, this association did not uniformly extend across all demographics. Interestingly, those teenagers who resided in the United States, regardless of their source of support, were over 40% less likely (aOR 0.57, 95% CI 0.34, 0.95) than their Canadian counterparts to feel connected.

Table 2. Logistic regression predicting the association between sources of support and feeling connected, 12-18 age group, N = 1002

Factor	Crude Odds Ratio (95% CI)	p-value	Multivariate Odds Ratio (95% CI)^a	p-value
Gender				
Male	1.00		1.00	
Female	0.62 (0.39, 0.99)	0.05	0.66 (0.41, 1.06)	0.08
Non-binary or other	1.38 (0.39, 4.81)	0.62	1.44 (0.40, 5.21)	0.57
Age				
12 to 18	1.01 (0.90, 1.13)	0.90	1.06 (0.93, 1.2)	0.39
Country of Residence				
Canada	1.00		1.00	
United States	0.67 (0.42, 1.06)	0.08	0.57 (0.34, 0.95)	0.03
Sources of Support				
Teacher/coach	2.26 (1.4, 3.65)	0.01	1.97 (1.20, 3.25)	0.01
Neighbor	2.21 (1.24, 3.92)	0.01	1.97 (1.07, 3.62)	0.03
Religious clergy	3.05 (1.62, 5.75)	0.01	2.51 (1.27, 4.95)	0.01

^a Controlling for gender, age, and country of residence

Table 3 shows the results of univariate and multivariate logistic regression predicting the association between coping mechanisms and feeling connected to others. Controlling for gender, age, and country of residence, those teenagers who coped with their pandemic-related challenges by talking or playing with neighbors (aOR 1.80; 95% CI 1.06, 3.05) were nearly twice as likely to feel connected to others, while those who became more politically active were over three times as likely to feel connected (aOR 3.24; 95% CI 1.54, 6.82).

Table 3. Logistic regression predicting the association between coping mechanisms and feeling connected, 12-18 age group, N = 1002

Factor	Crude Odds Ratio (95% CI)	p-value	Multivariate Odds Ratio (95% CI) ^a	p-value
Gender				
Male	1.00		1.00	
Female	0.62 (0.39, 0.99)	0.05	0.7 (0.43, 1.13)	0.14
Non-binary or other	1.38 (0.39, 4.81)	0.62	1.48 (0.40, 5.45)	0.56
Age				
12 to 18	1.01 (0.90, 1.13)	0.90	1.03 (0.91, 1.17)	0.59
Country of Residence				
Canada	1.00		1.00	
United States	0.67 (0.42, 1.06)	0.08	0.65 (0.39, 1.07)	0.09
Coping				
Connecting with teachers and classmates remotely	1.94 (1.17, 3.22)	0.01	1.49 (0.92, 2.41)	0.11
Talking or playing with neighbors	1.94 (1.17, 3.22)	0.01	1.80 (1.06, 3.05)	0.03
Volunteering	2.13 (1.05, 4.36)	0.04	1.81 (0.84, 3.87)	0.13
Talking with a trusted adult, such as a teacher, counselor, therapist, or social worker	1.83 (1.03, 3.22)	0.04	1.49 (0.82, 2.71)	0.19
Becoming more politically active	4.16 (2.07, 8.33)	0.01	3.24 (1.54, 6.82)	0.01

^a Controlling for gender, age, and country of residence

Table 4 shows the results of univariate and multivariate logistic regression predicting the association between engaging in pandemic-related activities and feeling connected to others. Controlling for gender, age, and country of residence, those who made personal protective equipment (aOR 2.26; 95% CI 1.06, 4.84) and those who helped a sibling with homework (aOR 1.85; 95% CI 1.11, 3.08) were both significantly more likely to feel connected.

Table 4. Logistic regression predicting the association between activities and feeling connected, 12-18 age group, N = 1002

Factor	Crude Odds Ratio (95% CI)	p-value	Multivariate Odds Ratio (95% CI)^a	p- value
Sex / Gender				
Male	1.00		1.00	
Female	0.62 (0.39, 0.99)	0.05	0.67 (0.41, 1.08)	0.10
Collapsed Gender (Non-Binary, Prefer not to say, Other)	1.38 (0.39, 4.81)	0.62	1.31 (0.36, 4.71)	0.68
Age				
12 to 18	1.01 (0.90, 1.13)	0.90	1.02 (0.90, 1.16)	0.76
Country of Residence				
Canada	1.00		1.00	
United States	0.67 (0.42, 1.06)	0.08	0.71 (0.43, 1.17)	0.18
Activities				
Take on a job to help your family with expenses.	2.12 (1.18, 3.8)	0.01	1.56 (0.83, 2.94)	0.17
Make personal protective equipment to donate (e.g., face masks, face shield)	2.8 (1.39, 5.62)	0.01	2.26 (1.06, 4.84)	0.03
Help a sibling with schoolwork	2.24 (1.40, 3.59)	0.01	1.85 (1.11, 3.08)	0.02
Help someone get a vaccine	2.66 (1.47, 4.82)	0.01	1.86 (0.97, 3.58)	0.06
None	0.48 (0.25, 0.93)	0.03	0.79 (0.39, 1.62)	0.52

Lastly, Table 5 shows the results of univariate and multivariate logistic regression predicting the association between experiencing various pandemic-related challenges and feeling connected to others. Those teenagers who reported missing summer camp were over twice as likely to feel connected to others (aOR 2.31; 95% CI 1.33, 4.01) than those who did not report this challenge.

Table 5. Logistic regression predicting the association between challenges faced and feeling connected, 12-18 age group, N = 1002

Factor	Crude Odds Ratio (95% CI)	p-value	Multivariate Odds Ratio (95% CI) ^a	p-value
Sex / Gender				
Male	1.00		1.00	
Female	0.62 (0.39, 0.99)	0.05	0.65 (0.40, 1.04)	0.07
Collapsed Gender (Non-Binary, Prefer not to say, Other)	1.38 (0.39, 4.81)	0.62	1.28 (0.36, 4.59)	0.71
Age				
12 to 18	1.01 (0.90, 1.13)	0.90	1.01 (0.89, 1.15)	0.85
Country of Residence				
Canada	1.00		1.00	
United States	0.67 (0.42, 1.06)	0.08	0.63 (0.38, 1.05)	0.07
Challenges				
Not being able to visit friends	0.63 (0.40, 0.99)	0.04	0.66 (0.41, 1.08)	0.10
Not being able to go to school	0.63 (0.39, 1.00)	0.05	0.65 (0.39, 1.08)	0.10
Missing summer camp	2.5 (1.47, 4.27)	0.01	2.31 (1.33, 4.01)	0.01
Ostracized	2.04 (1.03, 4.03)	0.04	1.93 (0.96, 3.89)	0.07

Discussion

During the COVID-19 pandemic, teenagers have struggled with social connection and mental health. This study investigated how teenagers in the United States and Canada fostered a sense of connectedness during the pandemic by engaging in various activities and relationships, both within their immediate social circles and beyond. By examining the coping strategies teens adopted, the people with whom they interacted, and the activities they did or did not do, we aimed to shed light on the factors that contribute to teenagers' resilience and social connection in times of crisis. We found that production of personal protective equipment (PPE), support to siblings, engagement with mentors, involvement in their local communities, political activity, and participation in extracurricular activities—especially language classes, fostered teens' sense of connection. Our findings thus highlight the importance of social and civic engagement in promoting a sense of connection and building resilience in protracted crises. Crucially, our survey results challenge the narrative that depicts teenagers as a homogenous group that relies solely on adults for their resilience. This assertion does not undermine the very valid and salient calls for dedicated support for teens during disasters. Rather, it points to teens' capacity for agency, as demonstrated through the ways in which they *actively* constructed elements of their COVID-19 disaster experiences. Moreover, it underscores that, to truly promote adolescent health and wellbeing, resources must be directed towards

opening and enhancing spaces (physical and virtual) for teens to construct and develop their own resilience.

Building Connections Through Social and Civic Engagement

Numerous studies highlight the importance of social and civic engagement in promoting a sense of connection (Darling et al., 2005; Eccles & Barber, 1999; Linver et al., 2009; Taylor et al., 2017). It is thus unsurprising that we found that teenagers who did not participate in any extracurricular activities were less likely to feel connected. This finding raises crucial inquiries regarding access, for as recent research has shown (cf. Cardenas et al., 2020; Ragavan et al., 2020; Richmond et al., 2022; Samji et al., 2022), both novel and pre-existing barriers to accessing extracurricular programs have emerged and been amplified amid the pandemic. Still, in line with critical disaster scholarship (cf. Panchal et al., 2021; Jones et al., 2021; Loades et al., 2020; O'Sullivan et al., 2021; Magson et al., 2021), we call for an intersectional approach in further research into the obstacles that obstruct adolescents' ability and willingness to engage in extracurricular activities during crises.

Enduring Impact of Summer Camp on Teenage Connections

Our results revealed an interesting connection between missing summer camp and an increased feeling of connection among teenagers. Children and teens who attend summer camp may have already established ways to connect with camp friends during the off-season, and thus may have been able to use those strategies to keep in touch with other teens during the pandemic (Owens & Adkins, 2022). Adler and Adler (2001) found that children have "compartmentalized friendships" (p. 148) with children from places other than school, such as vacation and summer camp friends. These friendships are often deep, and can feel like "safer havens" where they can share private feelings outside their regular home environments (Adler & Adler, 2001, p. 150). Notably, these researchers also found that children learned how to stay in touch with these friends, such as calling them or writing letters. Perhaps these findings provide insight into why teens in our study who missed summer camp also reported feeling connected to others.

Teens as Active Agents in Fostering Connections

In highlighting the active role teenagers played in fostering their own sense of connectedness, our study challenges the prevailing narrative of adolescents as passive recipients of social policies. We examined a range of activities—such as creating protective items for others, engaging in online language classes, and becoming more politically active—that not only situate teenagers as active subjects within their own narratives, but also serve to strengthen their sense of connection during a crisis.

The specific activities in which they engaged, and with whom they engaged, mattered for engendering connectedness. Notably, survey respondents were more likely to experience a sense of connection during the pandemic when they took an active part in activities like creating PPE. The survey results do not illuminate why making PPE, and not other items, had this effect. The results, however, dovetail with Mohamad's (2020) observation that youth leaders in Brunei played a large role

in the *#stayathome* social media campaign popularized during the pandemic that helped organize communities around the production and distribution of PPE to frontline workers. These findings suggest that enabling young people to directly tackle what they perceive to be a pressing need in a crisis may support a sense of connectedness.

We found that teenagers who participated in a language class during the pandemic were more likely to feel connected than those who did not. Extant literature suggests that online language classes were a way for students to feel connected amid restrictions, offering a break from the monotony of traditional school classes and providing an opportunity to have virtual connections with peers through sociocultural language exchange and sharing of ideas (Sitar-Taut et al., 2021). Moreover, the design and context of online education platforms may determine whether or not teenagers feel isolated, for example, in large seminars versus intimate groups, suggesting a need to examine the nature of online education and how it can support or hinder teenagers in fostering connection (Peimani & Kamalipour, 2021). Our results demonstrate that not all online classes necessarily exacerbate social isolation.

Connecting through Political Engagement

Our findings underscored a significant correlation between political participation and teenagers' feeling of connectedness. The teens' own categorization of their activities as "political" thus matters to feelings of connectedness. Building on previous research, our study highlighted the role of political engagement in fostering connectedness among teenagers, specifically in the context of disasters (Duke et al., 2009; Kahne et al., 2006; Kim & Morgül, 2017). Political activity can serve as a means for expressing dissatisfaction with the prevailing sociopolitical order, especially during extended periods of economic instability and social isolation. The COVID-19 pandemic was no exception, with tensions across societies inflaming political crises and revealing asymmetrical effects on various groups. The Black Lives Matter movement reflected how the psychological burden of the COVID-19 pandemic ignited anti-systemic attitudes across racial lines in the form of political activism and radicalism intentions (Bartusevičius et al., 2021). Relatedly, the biological impacts of COVID-19 were intertwined with fractured perceptions of political inequality, leading to misunderstandings related to xenophobia and racism in the Black Lives Matter movement. In the United States, the pandemic was not understood merely in biological terms, but also as a manifestation of political affiliation, difference, connection, and disconnection (Hardy, 2020). In Canada, the "discovery"² of unmarked graves near residential schools catalyzed conversations about social inequality and the marginalization and vulnerability of Indigenous

² For decades, Indigenous Peoples across Canada have known about unmarked graves of Indigenous children, as reported in the Truth and Reconciliation Commission reports (Hamilton, 2021; Truth & Reconciliation Commission of Canada, 2015). Yet, it took the Tk'emlups te Secwepemc reporting that ground-penetrating radar had detected the likely remains of up to 215 children around the former Kamloops Indian Residential School in British Columbia in May 2021 to spark massive public outcry and to spur government action. Since then, hundreds more confirmed or suspected unmarked graves have been found.

groups (d'Alpoim Guedes et al., 2021; Government of Canada; Crown-Indigenous Relations and Northern Affairs, 2022).

Extant literature has conceptualized politics during the pandemic as divisive for teenagers (Bengtsson et al., 2021); lesbian, gay, bisexual, transgender, and/or queer (LGBTQ+) groups (Schmitz et al., 2023); and along racial lines (Luttrell et al., 2022). Contrastingly, our results suggest that teenagers may find a sense of connection through political engagement. This connection is particularly important in crisis contexts, as inequalities become magnified and risk further dividing society. By reframing teenagers as active agents seeking to build connections around political engagement, our study underscores the ways in which teens foster resilience.

The salience of political participation to the feeling of connectedness among teenagers prompts further exploration into how teenagers may leverage social media and other forms of political engagement to connect with others virtually. Extant literature found that teenagers expanded the scope of political activities during COVID-19, leveraging platforms like Instagram, TikTok, and Twitter to challenge narratives on social distancing measures, question public health information, and address issues around climate change (Calabrese Barton et al., 2021; Mohamad, 2020; Von Storch et al., 2021). Relatedly, political activities in the online realm are a means to foster youth activism (Wilf & Wray-Lake, 2021). Through case studies of youth-led online campaigns, Wilf and Wray-Lake (2021) highlighted how young people use their digital platforms to challenge dominant power structures and promote social change. Through these activities, teenagers actively build resilience by connecting virtually with other politically engaged individuals.

Role of Social Capital in Fostering Connections

The preceding discussion can be read to argue that participation in specific social activities bolsters one's social capital. Amidst the changing landscape of social interactions brought on by the pandemic, our study underscores the paramount importance of bridging social capital in teenagers' sense of connectedness, surpassing the role of bonding capital and shedding light on the lack of established linking social capital.

Bonding social capital, referring to relationships within a group or community (Szreter & Woolcock, 2004), featured in teenagers' pandemic lives. Our results demonstrated a significant correlation between helping siblings and a heightened sense of connectedness amongst teenagers. The relevance of sibling assistance was notably amplified during the pandemic, given the disparate structures and methodologies of online education across Canada and the United States. A possible explanation for why adolescents took to helping their younger siblings was to help them adapt to the new norm, and to access information and resources (Ashikkali et al., 2020). Indeed, recent literature has noted an increase in family-based social capital as lockdown measures simultaneously reduced access to teenagers' immediate social circles (Dávid et al., 2023; Percy-Smith et al., 2022). However, previous research indicates that while bonding capital provides emotional support,

it may not contribute significantly to long-term recovery or resilience (Poortinga, 2012; Wong & Kohler, 2020). Echoing this claim, our study revealed that the teenagers who felt more connected extended beyond their immediate social circles and sought to establish relationships characterized by bridging social capital.

The categories of people with whom teenagers developed bridging social capital reflect both aspirational and practical dimensions of their pandemic lives. Earlier pre-pandemic research has found that seeking guidance from adult mentors was related to social-emotional wellbeing and connections to social capital (Grossman & Bulle, 2006). Our study found a similar role for adult mentors; there was a positive correlation between adolescents' sense of connectedness and the support received from teachers/coaches, neighbors, and religious clergy. Other scholars have similarly underscored the strengthening and salience of these relationships in the pandemic. Sitar-Taut and colleagues (2021) found that associating with teachers and coaches in online contexts fostered a greater sense of community among teens. Barker and colleagues (2022) noted that teenagers connected with their neighbors. Bryson and colleagues (2020) argued that pandemic restrictions catalyzed shifts in the geographies of the home as some people used their homes not only in the traditional sense, but also as places of worship. Thus, as reflected in our findings, teenagers may have sought a larger sense of community through interacting with clergy in online contexts. We posit that the importance of teenagers' engagement with teachers, coaches, neighbors, and religious clergy is partially a product of pandemic restrictions and the resulting limitations of the people with whom teens could interact; for example, through online schooling and religious services, or through outdoor, physically distanced face-to-face interactions with neighbors in close proximity to one's home. But it was also a product of teens' aspirational desire for meaningful connection with other groups and causes greater than themselves, as evidenced by the significance of political engagement and creating PPE for others in promoting teens' sense of connectedness.

Given the strength of the association between teens' reported political engagement in the pandemic and their sense of connectedness, it is notable but not surprising that our study did not find evidence of teenagers establishing connections through linking social capital. Recall that linking social capital connects individuals or institutions at different levels of societal power hierarchy. Drawing from Warren et al.'s (2001) concept of linking social capital, one possible explanation for this absence could be the COVID-19 disaster context. The closure of most businesses and institutions likely reduced opportunities for teenagers to establish these types of connections. Another explanation could be a lack of accessible infrastructure—institutional, virtual, and social—through which teens could navigate and establish linking social capital.

Study Limitations and Considerations

This study has several limitations. Age stratification, such as comparing a 12-year-old to an 18-year-old, was not performed in the study. The study did not account for potential regional differences within Canada. There was an overrepresentation of White/Caucasian and 18-year-old survey respondents, making the study's sample less representative of the age and racial/ethnic diversity in both the United States

and Canada. While the survey included questions on political engagement, it failed to inquire about specific types of political activities. This lack of specificity might introduce some ambiguity regarding what is understood as “political activity.” In addition, the number of teenagers who reported feeling connected was relatively low, which may be related to incidences of other negative emotions recorded in the survey. Notably, a similar number of respondents self-reported negative emotions such as anger (12.3%) and an even higher amount for feelings of isolation (45.8%). The widespread economic and social impacts of the COVID-19 pandemic as a protracted crisis distinguish it from more localized events like Hurricane Katrina or the Haiti earthquake. Therefore, the findings from this study are likely more relevant to situations involving extended lockdowns and recovery periods.

Conclusion

In conclusion, this study illuminates the agency exhibited by teenagers during the COVID-19 pandemic. Rather than merely depending on adults, teenagers actively nurtured their own sense of connection, whether through assisting siblings, engaging with mentors, or partaking in extracurricular activities. These actions underscored the significance of social and civic engagement in constructing resilience and a sense of community in crisis situations. The diversity of activities—ranging from making protective equipment for others and engaging in political activism, to participating in language classes—demonstrates the myriad ways in which teenagers exert their agency and foster connections. To whom teens are connected matters. Bridging social capital plays a vital role in fostering an enhanced sense of connectedness among teenagers, going beyond the bounds of immediate family relationships.

However, it is important to note that the path to fostering this sense of connection had challenges. Issues such as the disparity in connectedness between teenagers living in the United States and Canada underline the need for further investigation. Furthermore, barriers inhibiting adolescents' involvement in extracurriculars during the pandemic point to the necessity for an intersectional approach in future research with particular attention to possibilities for linking social capital, which was notably lacking in our findings. Ultimately, this study refutes the notion of teenagers as mere passive beneficiaries of social policies, instead championing their active role in building resilience and fostering connections amid the pandemic.

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Appendix A. Descriptive statistics overall and by teenagers feeling connected. N = 1,002, Life in COVID study, August 2022

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Gender				
Female	521 (51.99)	488 (52.99)	33 (40.74)	0.38
Male	458 (45.71)	413 (44.84)	45 (55.56)	
Non-binary or other	23 (2.30)	20 (2.17)	3 (3.70)	
Age				
12	101 (10.08)	92 (9.99)	9 (11.11)	0.73
13	108 (10.78)	98 (10.64)	10 (12.35)	
14	111 (11.08)	104 (11.29)	7 (8.64)	
15	143 (14.27)	130 (14.12)	13 (16.05)	
16	156 (15.57)	148 (16.07)	8 (9.88)	
17	133 (13.27)	123 (13.36)	10 (12.35)	
18	250 (24.95)	226 (24.54)	24 (29.63)	
Primary Language^a				
English	356 (71.06)	322 (71.71)	34 (72.34)	0.85
French	98 (19.56)	88 (19.60)	10 (21.28)	
Other	42 (8.38)	39 (8.69)	3 (6.38)	
Race/Ethnicity^b				
White/Caucasian or Mixed White/Caucasian	750 (74.85)	693 (92.4)	57 (7.60)	0.33
Black/African American/Canadian	76 (7.58)	68 (89.47)	8 (10.53)	0.42
Indigenous/Native American/Alaska Native/ First Nations/ Métis/ Inuit	29 (2.89)	26 (89.66)	3 (10.34)	0.65
Hispanic/Latinx	36 (3.59)	32 (88.89)	4 (11.11)	0.50

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Asian/Pacific Islander	133 (13.27)	120 (90.23)	13 (9.77)	0.44
Prefer not to say	7 (0.70)	7 (100.00)	0 (0.00)	0.43
Religion^b				
Christianity	573 (57.19)	525 (91.62)	48 (8.38)	0.69
Judaism	21 (2.10)	21 (100.00)	0 (0.00)	0.17
Islam	30 (2.99)	25 (83.33)	5 (16.67)	0.80
Buddhism	19 (1.90)	18 (94.74)	1 (5.26)	0.65
Hinduism	19 (1.90)	16 (84.21)	3 (15.79)	0.21
Atheist/Agnostic	135 (13.47)	121 (89.63)	14 (10.37)	0.30
Secular Humanist/Spiritual	37 (3.69)	34 (91.89)	3 (8.11)	1.00
Other	53 (5.29)	49 (92.45)	4 (7.55)	0.51
Prefer Not to Say	140 (13.97)	136 (97.14)	4 (2.86)	0.01
Country of Residence				
United States	501 (50.00)	468 (50.81)	33 (40.74)	0.08
Canada	501 (50.00)	453 (49.19)	48 (59.26)	
Canadian Region^a				
Atlantic Canada	33 (6.59)	32 (7.06)	1 (2.08)	0.58
Central Canada	305 (60.88)	274 (60.49)	31 (64.58)	
Western Canada	2 (0.20)	2 (0.44)	0 (0.00)	
Northern Canada	161 (16.07)	145 (32.01)	16 (33.33)	

Table continues

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Household Income				
Below \$25,000	106 (10.58)	98 (10.64)	8 (9.88)	0.80
\$25,000-\$49,999	164 (16.37)	148 (16.07)	16 (19.75)	
\$50,000-\$99,999	303 (30.24)	277 (30.08)	26 (32.10)	
\$100,000-\$149,999	190 (18.96)	176 (19.11)	14 (17.28)	
Over \$150,000	109 (10.88)	99 (10.75)	10 (12.35)	
Do not know/prefer not to answer	130 (12.97)	123 (13.36)	7 (8.64)	
Parent Marital Status				
Single	268 (26.75)	246 (26.71)	22 (27.16)	0.41
Married or common-law	625 (62.38)	575 (62.43)	50 (61.73)	
Separated or divorced	78 (7.78)	69 (7.49)	9 (11.11)	
Widowed	25 (2.50)	25 (2.71)	0 (0.00)	
Other	6 (0.60)	6 (0.65)	0 (0.00)	
Extracurriculars^b				
Music activity (e.g., lessons, band, choir)	259 (25.85)	224 (86.49)	35 (13.51)	0.01
Sports or dance activity (e.g., class, team)	281 (28.04)	253 (90.04)	28 (9.96)	0.17
Arts activity (e.g., painting lessons, choir, drama club)	234 (23.35)	208 (88.89)	26 (11.11)	0.05
Religious activity	165 (16.47)	145 (87.88)	20 (12.12)	0.04
Language class	97 (9.68)	78 (80.41)	19 (19.59)	0.01
Volunteer or community service project	102 (10.18)	88 (86.27)	14 (13.73)	0.03
General activities (e.g., Boy/Girl Scouts/Guides)	117 (11.68)	98 (83.76)	19 (16.24)	0.01
None of the above	342 (34.13)	332 (97.08)	10 (2.92)	0.01
Places^b				
School/childcare center	422 (42.12)	389 (92.18)	33 (7.82)	0.01

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Park/natural environment	502 (50.10)	458 (91.24)	44 (8.76)	0.43
Neighborhood streets	392 (39.12)	353 (90.05)	39 (9.95)	0.08
Sports facility/recreational center	133 (13.27)	120 (90.23)	13 (9.77)	0.44
Friend's place of residence	378 (37.72)	347 (91.80)	31 (8.20)	0.92
Grandparent's place of residence	303 (30.24)	279 (92.08)	24 (7.92)	0.90
Other family member's place of residence	305 (30.44)	285 (93.44)	20 (6.56)	0.24
Entertainment (e.g., movies, arcades, museums, etc.)	154 (15.37)	138 (89.61)	16 (10.39)	0.25
Shopping mall	245 (24.45)	224 (91.43)	21 (8.57)	0.75
Grocery store/pharmacy/retail	501 (50.00)	467 (93.21)	34 (6.79)	0.13
Place of worship	145 (14.47)	128 (88.28)	17 (11.72)	0.08
Site of employment	147 (14.67)	137 (93.20)	10 (6.80)	0.54
None of the above	71 (7.09)	67 (94.37)	4 (5.63)	0.43
Challenges^b				
Not being able to visit grandparents/other relatives	400 (39.92)	369 (92.25)	31 (7.75)	0.75
Not being able to visit friends	624 (62.28)	582 (93.27)	42 (6.73)	0.04
Not being able to go to school	488 (48.70)	457 (93.65)	31 (6.35)	0.05
Missing important milestones (e.g., birthdays, graduations)	430 (42.91)	397 (92.33)	33 (7.67)	0.68
Missing summer camp	134 (13.37)	113 (84.33)	21 (15.67)	0.00
Not being able to do their usual activities	456 (45.51)	423 (92.76)	33 (7.24)	0.37
Difficulty using technologies (e.g., Zoom, webinars)	165 (16.47)	155 (93.94)	10 (6.06)	0.30
Fear of going out and catching COVID-19	418 (41.72)	387 (92.58)	31 (7.42)	0.51
Not being able to go to the park or other recreational facility	130 (12.97)	119 (91.54)	11 (8.46)	0.87
Conflict with family members or friends	143 (14.27)	133 (93.01)	10 (6.99)	0.61

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Financial challenges or worries	159 (15.87)	144 (90.57)	15 (9.43)	0.50
The death of a close family member or friend	153 (15.27)	138 (90.20)	15 (9.80)	0.40
Ostracized for pandemic views	77 (7.68)	66 (85.71)	11 (14.29)	0.04
Keeping close relationships	181 (18.06)	167 (92.27)	14 (7.73)	0.85
None	43 (4.29)	30 (90.70)	4 (9.30)	0.76
Coping				
Connecting with friends remotely	690 (68.86)	633 (91.74)	57 (8.26)	0.76
Connecting with grandparents and other family members remotely	360 (35.93)	334 (92.78)	26 (7.22)	0.45
Connecting with teachers and classmates remotely	322 (32.14)	288 (89.44)	34 (10.56)	0.05
Talking or playing with neighbors	188 (18.76)	164 (87.23)	24 (12.77)	0.01
Volunteering	67 (6.69)	57 (85.07)	10 (14.93)	0.03
Playing video games	508 (50.70)	470 (92.52)	38 (7.48)	0.48
Participating in web-based activities (e.g., online arts, music, fitness, or other activities)	191 (19.06)	177 (92.67)	14 (7.33)	0.67
Learning a new skill or hobby	222 (22.16)	203 (91.44)	19 (8.56)	0.77
Keeping a diary, creating art, writing poetry, songs, memes, etc.	154 (15.37)	144 (93.51)	10 (6.49)	0.43
Talking with a trusted adult, such as a teacher, counselor, therapist, or social worker	134 (13.37)	117 (87.31)	17 (12.69)	0.04
Spending time with a pet	399 (39.82)	362 (90.73)	37 (9.27)	0.26
Becoming more politically active	49 (4.89)	37 (75.51)	12 (24.49)	0.00
Sources of Support^b				
Family member	801 (79.94)	737 (92.01)	64 (7.99)	0.83
Friend	540 (53.89)	502 (92.96)	38 (7.04)	0.19
Teacher/coach	220 (21.96)	190 (86.36)	30 (13.64)	0.00
Neighbor	116 (11.58)	99 (85.34)	17 (14.66)	0.01

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Religious clergy	73 (7.29)	59 (80.82)	14 (19.18)	0.00
Medical provider (e.g., pediatrician, psychologist)	123 (12.28)	110 (89.43)	13 (10.57)	0.28
None of the above	99 (9.88)	92 (92.93)	7 (7.07)	0.70
Activities^b				
Hang a rainbow, heart, or other sign or a bear on your window or door	135 (13.47)	119 (88.15)	16 (11.85)	0.08
Clap, bang pots, use noise makers, or sing outside to support essential workers/healthcare workers	105 (10.48)	93 (88.57)	12 (11.43)	0.18
Reach out/provide support (listening, comforting) to a friend or family member	300 (29.94)	270 (90.00)	30 (10.00)	0.15
Take on a job to help your family with expenses.	112 (11.18)	96 (85.71)	16 (14.29)	0.01
Create artwork or food for someone	233 (23.25)	210 (90.13)	23 (9.87)	0.25
Create pandemic-related educational or inspiration videos or content, and post it online	47 (4.69)	43 (91.49)	4 (8.51)	0.91
Create outdoor pandemic-related artwork or treasures/notes for others to find	56 (5.59)	48 (85.71)	8 (14.29)	0.08
Volunteer with a community agency	44 (4.39)	39 (88.64)	5 (11.36)	0.41
Deliver food packages or other goods to people in need	91 (9.08)	84 (92.31)	7 (7.69)	0.89
Make personal protective equipment to donate (e.g., face masks, face shield)	60 (5.99)	49 (81.67)	11 (18.33)	0.00
Raise money for/donate to organizations helping people impacted by COVID-19	49 (4.89)	42 (85.71)	7 (14.29)	0.10
Help a sibling with schoolwork	240 (23.95)	208 (86.67)	32 (13.33)	0.00
Attend a protest or rally	19 (1.90)	18 (94.74)	1 (5.26)	0.65
Run errands for a friend or family member	282 (28.14)	256 (90.78)	26 (9.22)	0.41
Help someone get a vaccine	94 (9.38)	78 (82.98)	16 (17.02)	0.00
None	237 (23.65)	226 (95.36)	11 (4.64)	0.03

Category	n (%), N = 1002	Feeling Connected		p-value ^c
		No 921 (91.92)	Yes 81 (8.08)	
Household Job Loss/Hour Reduction				
Yes	353 (35.23)	326 (92.35)	27 (7.65)	0.70
No	649 (64.77)	595 (91.68)	54 (8.32)	
Personal Experience with COVID-19				
Yes	463 (46.21)	426 (37.90)	37 (34.26)	0.92
No	539 (53.79)	495 (44.04)	44 (40.74)	
Household Experience with COVID-19				
Yes	610 (60.88)	564 (50.18)	46 (42.59)	0.43
No	392 (39.12)	357 (31.76)	35 (32.41)	
Received Vaccine				
Yes	767 (76.55)	706 (76.66)	61 (75.31)	0.45
No, but will receive a vaccine	40 (3.99)	36 (3.91)	4 (4.94)	
No, will not receive a vaccine	144 (14.37)	135 (14.66)	9 (11.11)	
I am not sure whether I will receive a vaccine	41 (4.09)	36 (3.91)	5 (6.17)	
Prefer not to answer	10 (1.00)	8 (0.87)	2 (2.47)	
Socialize with non-vaccinated				
No	138 (13.77)	127 (13.79)	11 (13.58)	0.90
Yes, unconditionally	423 (42.22)	387 (42.02)	36 (44.44)	
Yes, but only according to public health guidelines (e.g., wearing masks, social distancing around those who have not been vaccinated)	306 (30.54)	280 (30.40)	26 (32.10)	
I don't know	121 (12.08)	114 (12.38)	7 (8.64)	
Prefer not to answer	14 (1.40)	13 (1.41)	1 (1.23)	