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Psychosocial Effects of the COVID-19 Pandemic and Mental Health among LGBTQ+ Young Adults: A Cross-Cultural Comparison across Six Nations

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ABSTRACT

Across the world, people have seen their lives interrupted by the COVID-19 pandemic. Using an online survey, we explored how the psychosocial effects of the pandemic affected the mental health of LGBTQ+ young adults who were confined with their parents during the lockdown period ($N = 1,934$), from six countries: Portugal, UK, Italy, Brazil, Chile, and Sweden. South American participants experienced more negative psychosocial effects of the pandemic. Depression and anxiety were higher among participants who were younger, not working, living in Europe and who reported feeling more emotionally affected by the pandemic, uncomfortable at home, or isolated from non-LGBTQ friends. Not attending higher education predicted depression while not being totally confined at home, residing habitually with parents, and fearing more future infection predicted anxiety. LGBTQ+ community groups, as well as health and educational services should remain particularly attentive to the needs of LGBTQ+ young adults during health crises.

KEYWORDS

LGBTQ+; COVID-19; cross-cultural; depression; anxiety; psychosocial effects

The COVID-19 pandemic has led to many governments implementing stay-at-home measures, closure of public services, or teleworking recommendations (European Centre for Disease Prevention and Control—ECDPC, 2020). However, quarantine situations have been associated with increased rates of

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mental health symptoms, amplified by quarantine duration, fear of infection, frustration, boredom, inadequate information, financial loss, and stigma (Brooks et al., 2020). These stressors, along with other uncertainty and fear related to the pandemic, are likely to increase anxiety (Rubin & Wessely, 2020) and depression (Brooks et al., 2020; Holmes et al., 2020) in the general population.

Lesbian, gay, bisexual, trans, queer, and other sexual and gender minority individuals (LGBTQ+) are likely to be socially disadvantaged (Flores, 2019; Meyer, 2003, 2015). Stigma is a socially devalued mark or aspect of the self (Goffman, 1963) and according to the minority stress theory, stigma, prejudice, and discrimination against LGBTQ+ people produce stress, which, in turn, leads to negative health outcomes (Meyer, 2003, 2015). Originally applied to sexual orientation (Meyer, 2003), the model was extended to transgender and gender nonconforming individuals (Meyer, 2015; Testa, Habarth, Peta, Balsam, & Bockting, 2015).

Consistent with minority stress theory, research has reported higher levels of depression, anxiety, and self-harm behaviors among LGBTQ+ groups compared to heterosexual or cisgender samples (Chakraborty, McManus, Brugha, Bebbington, & King, 2011; Hendricks & Testa, 2012; Perez-Brumer, Day, Russell, & Hatzenbuehler, 2017). Minority stress processes comprise distal stressors, including violence and discrimination related to one's perceived sexual and/or gender identity; and proximal stressors, involving self-perceptions and appraisals, including expectations of rejection, concealment, and internalized stigma (Meyer, 2015). Both distal and proximal stressors can be amplified for some LGBTQ+ individuals in situations of isolation such as government restrictions to avoid the spread of COVID-19 (Green, Price-Feeney, & Dorison, 2020; Office of the High Commissioner for Human Rights—OHCHR, 2020; OutRight Action International, 2020; Salerno, Williams., & Gattamorta, 2020b; Whittington, Hadfield, & Calderon, 2020).

LGBTQ+ young adults, including those who are confined with their family of origin, may be in a situation of particular vulnerability with regard to their emotional well-being and mental health during the COVID-19 pandemic (Council of Europe Secretary General Marija Pejčinović Burić, 2020; Salerno, Devadas, Pease, Nketia, & Fish, 2020a; Society for Research in Child Development, 2020). The stay-at-home orders, closure of higher education institutions, and/or teleworking measures may have confined LGBTQ+ young adults to potentially negative home environments. Families of origin often reflect the wider societal stigma and become a source of discrimination for LGBTQ+ individuals, increasing mental distress during adolescence and into young adulthood (Ryan, Huebner, Diaz, & Sanchez, 2009; Ryan, Russell, Huebner, Diaz, & Sanchez, 2010). Some LGBTQ+ young individuals residing with their parents during the current health crisis have indeed reported distress associated with efforts to conceal their sexual and/or gender identity from family members (Fish et al., 2020; Neighmond, 2020; Venkatraman, 2020). Furthermore, LGBTQ+

individuals are at elevated risk for domestic violence (McKay, Lindquist, & Misra, 2017), but may be unable to report it through traditional channels, like schools and universities, during the pandemic (Society for Research in Child Development, 2020). Access to support resources that can effectively buffer and protect LGBTQ+ young adults against mental health burden due to social isolation and psychological trauma (Kaniuka et al., 2019; Parra, Bell, Benibgui, Helm, & Hastings, 2018) is also reduced during the pandemic.

The current study

The present work is a joint endeavor of 16 academics from Portugal, UK, Italy, Brazil, Chile, and Sweden to explore the psychosocial effects of the COVID-19 pandemic among LGBTQ+ young adults confined with their parents. The study is informed by family systems theory (Cox & Paley, 1997; McGoldrick, Preto, & Carter, 2015) which suggests that individual development and adaptation is shaped not only by the family subsystems (e.g., parents and children) but also by the broader socio-cultural context. As noted by Rosenfeld et al. (2020), conceptualizing individuals as inseparable from context and culture allows for more informed research in the context of COVID-19. Thus, in this work we took into account the role of the broader social context in two areas: (1) the social acceptance of sexual and gender minorities, and (2) differences in the local severity of the pandemic and in the local measures implemented to prevent COVID-19 spreading.

Sexual and gender stigma is reflected in a single country-level score based on the Global LGBT Acceptance Index (GAI) (Flores, 2019), which incorporates data from different countries around the world about public beliefs and policies regarding LGBT people. Of the countries represented in the study, Sweden has the highest level of acceptance of LGBT individuals followed closely by the UK; Chile, Italy, and Portugal present lower levels of acceptance (Brazil is not part of this Index). Similarly, 2019 data from the Pew Research Center (2020) showed that while majorities in 16 of the 34 countries surveyed believe homosexuality should be accepted by society, global differences remain: whereas 94% of those surveyed in Sweden say homosexuality should be accepted, compared to 67% in Brazil. Furthermore, in many countries (including European and Latin American countries), anti-gender campaigns to restrict LGBTQ+ individuals' and women's rights may be aggravating the gap between open and more closed societies regarding acceptance of LGBTQ+ people (Barrientos, 2019; Paternotte & Kuhar, 2018). The best example is Brazil, a country where these movements recently became very powerful (Corrêa, 2018).

Countries also differ in the local severity and management of the pandemic. Number of cases and deaths have varied by country over the course of the pandemic. Specific data for the participating countries at the time of this study

Table 1. Number of COVID-19 cases, deaths, total cases per 100,000 population, and total deaths per 100,000 population.

Country	Cases	Deaths	Total cases per 100,000 population	Total deaths per 100,000 population
Brazil	2,912,212 (2 nd)	98,493 (2 nd)	1,379.87 (11 th)	46.67 (12 th)
Chile	366,671 (8 th)	9,889 (13 th)	1,934.73 (4 th)	52.18 (9 th)
UK	308,134 (12 th)	46,413 (4 th)	462.34 (49 th)	69.64 (3 rd)
Italy	249,204 (16 th)	35,187 (6 th)	412.87 (53 rd)	58.30 (7 th)
Sweden	81,967 (31 st)	5,766 (22 nd)	801.23 (20 th)	66.36 (8 th)
Portugal	52,061 (45 th)	1,743 (37 th)	506.60 (42 nd)	16.96 (33 rd)

Countries are ranked in the first column according to higher number of cases. Values in brackets correspond to worldwide rank for the criterion in question. Data as of 7 August 2020, retrieved from <https://qap.ecdc.europa.eu/public/extensions/COVID-19/COVID-19.html> (European Centre for Disease Prevention and Control, 2020)

are reported in Table 1. Brazil has the greatest number of cases and deaths among the six countries. However, when we take into consideration the total deaths per 100,000 population, the UK takes the lead, followed by Italy and Sweden. Portugal was the least affected of all the countries participating in this study. It must be noted that countries varied regarding aspects such as testing approaches and statistics related to the COVID-19 pandemic should be interpreted with caution.

Government measures to contain COVID-19 also varied nationally. We compared the six participating countries regarding the two strictest measures: stay-at-home recommendations for the general population (which are voluntary or not enforced); and stay-at-home orders for the general population (these are enforced and also referred to as “lockdown”). We have also considered two measures that might particularly have affected the lives of young adults: closure of higher education institutions; and teleworking recommendations/closure of workplaces (ECDPC, 2020).

As shown in Table 2, all governments decreed either voluntary stay-at-home recommendations (Portugal, UK, Brazil, Chile, and Sweden) and/or stricter lockdown measures (UK, Italy, Chile) at the time of the study. While in Europe most measures were enforced from March to May, in some regions of the South American countries they were still active as of 7 August 2020. In all countries, governmental responses varied geographically taking into consideration regional variations in the number of COVID-19 cases (e.g., dynamic or selective quarantine measures, early closure of bars and restaurants, etc.). Higher education institutions were physically closed from March to May/June (in Brazil and Chile this was still the case as of 7 August 2020), although courses remained active online in all countries. Finally, teleworking recommendations or workplace closures took place in every country and were still active, to some extent, in all of them.

Our exploratory research aimed to investigate the effects of the COVID-19 pandemic on mental health symptoms among LGBTQ+ young adults confined with their parents (or similar family configuration) in Portugal, UK, Italy, Brazil, Chile, and Sweden. First, we explored differences in the psychosocial

Table 2. Governmental response-measures to the COVID-19 pandemic March–August 2020.

	PT	UK	IT	BR	CL	SE
Stay-at-home orders		24 March to 9 May	10 March to 4 May		18 March (ongoing as of 7 August)	
Stay-at-home recommendations	19 March to 2 May	16 March to 23 March		12 March (ongoing as of 7 August)	4 March (ongoing as of 7 August)	16 March for people over 70 years (ongoing as of 7 August)
Closure of higher education institutions	16 March to 17 May	24 March to 9 May	10 March to 10 June	13 March (ongoing as of 7 August)	14 March (ongoing as of 7 August)	18 March to 15 June
Teleworking recommendation or workplace closures	16 March to 31 May	16 March to 9 May	12 March (ongoing as of 7 August)	17 March (ongoing as of 7 August)	18 March (ongoing as of 7 August)	16 March (ongoing as of 7 August)

Data retrieved from <https://qap.ecdc.europa.eu/public/extensions/COVID-19/COVID-19.html> (European Centre for Disease Prevention and Control-ECDPC, 2020)

effects of the pandemic by country of origin. Because of dissimilarities in the acceptance of LGBTQ+ individuals, as well as differences in the local severity and management of the present health crisis, we expected the psychosocial effects of the pandemic to be more pronounced in South American countries than in European countries. Second, we explored the psychosocial effects of the COVID-19 pandemic on reported mental health symptoms among participants, controlling for sociodemographic characteristics. Given the exploratory nature of this research, hypotheses were not formulated.

Method

Study design and participants

Data were collected as part of a larger *on-line* survey study, “Social support networks and psychological health of young LGBTQ+ individuals during the COVID-19 pandemic.” This study, originally devised in Portugal (Gato, Leal, & Seabra, 2020) was replicated in the UK, Italy, Brazil, Chile, and Sweden. Our convenience sample was composed of LGBTQ+ participants ($N = 1,934$) between 18 and 29 years old ($M = 22.70$; $SD = 3.33$). Participants selected for this study either resided habitually with their parents ($n = 1,521$; 78.6%) or had returned to their parents’ home during the pandemic ($n = 413$; 21.4%). Most were in total confinement in their homes ($n = 1,423$; 73.6%), some in a situation of partial confinement ($n = 352$; 18.2%), and others ($n = 159$ participants; 8.2%) reporting not being confined by government stay-at-home orders or recommendations. The remaining sociodemographic characteristics of participants are described in Table 3.

Measures

Sociodemographic characteristics

The sociodemographic questionnaire included questions about participants’ age, sex assigned at birth, gender identity, sexual orientation, relationship status, educational level, and work status. Participants were also asked if they were totally, partially or not confined in their homes because of government restrictions; and if they resided habitually or had returned to their family home.

Psychosocial effects of the COVID-19 pandemic

From our initial literature review, we devised items for tapping into the psychological effects of pandemic situations and the family dynamics on sexual or gender minority individuals (Gato et al., 2020). The following seven items (rated on a Likert scale from 0 to 10) were used: “To what extent has the COVID-19 pandemic affected your life?” (0 = *absolutely not affected*;

Table 3. Sociodemographic characteristics of the participants.

Variable	<i>n</i>	%
Country		
Portugal	359	18.6
UK	96	5.0
Italy	107	5.5
Brazil	623	32.2
Chile	715	37.0
Sweden	34	1.8
Sex assigned at birth		
Female	969	50.1
Male	929	48.0
Intersex	36	1.9
Gender identity		
Cisgender	1567	81.4
Transgender	120	6.2
Non-binary	215	11.2
Other	23	1.2
Sexual orientation		
Gay/lesbian	1008	52.1
Bisexual	624	32.3
Pansexual	96	5.0
Asexual	35	1.8
Heterosexual	25	1.3
Other (e.g., queer)	145	7.5
Relationship status		
Not in a relationship	1074	55.5
In a relationship	860	44.5
Educational level		
12 years of education or less	832	43.0
Higher education	1102	57.0
Work status		
Not working	1267	65.6
Working	663	34.4

10 = *totally affected*); “To what extent has the COVID-19 pandemic affected you emotionally?” (0 = *not emotionally affected at all*; 10 = *very emotionally affected*); “How afraid are you of becoming infected with COVID-19 in the future?” (0 = *not afraid at all*; 10 = *totally afraid*); “To what extent do you feel uncomfortable in your household in the current situation?” (0 = *not uncomfortable at all*; 10 = *totally uncomfortable*); “To what extent do you feel ‘suffocated’ because you cannot express your LGBTQ+ identity with your family/the people you live with in the current situation of confinement?” (0 = *not “suffocated” at all*; 10 = *completely “suffocated”*); “To what extent has the COVID-19 pandemic made you feel isolated from your non-LGBTQ+ friends?” (0 = *not isolated at all*; 10 = *extremely isolated*); and “To what extent has the COVID-19 pandemic made you feel isolated from your LGBTQ+ friends?” (0 = *not isolated at all*; 10 = *extremely isolated*).

Mental health

We employed the depression and anxiety subscales of the Depression, Anxiety and Stress Scales 21-Item Version (DASS-21; Lovibond & Lovibond, 1995), as

not all countries included the stress subscale. Each country used the adapted version of this instrument (Alfonsson, Wallin, & Maathz, 2017; Antúnez & Vinet, 2012; Bottesi et al., 2015; Pais-Ribeiro, Honrado, & Leal, 2004; Román, Santibáñez, & Vinet, 2016; Vignola & Tucci, 2014). The anxiety subscale measured physical arousal symptoms, panic attacks, and fear. The depression subscale includes symptoms usually associated with negative mood. Participants rated items using a 4-point Likert scale (0 = *did not apply to me at all* to 3 = *applied to me very much or most of the time*), with higher scores indicating greater negative or anxious affect. Cronbach's alphas for the total sample and each country presented good to very good values: .77 to .93 for Depression, and .72 to .89 for Anxiety.

Procedure

The main author invited colleagues to participate in a cross-cultural study about the impacts of the COVID-19 pandemic on the well-being of sexual and gender minorities. Different countries were recruited to find contrasting settings regarding social acceptance of LGBTQ+ people, equal rights legislation, COVID-19 spread, and governmental policy on social restrictions during the pandemic. A core questionnaire was agreed upon, and online surveys were set up in each country. The study was advertised in LGBTQ+ oriented websites and social media (e.g., Facebook, Instagram) and promoted with the help of local LGBTQ+ community groups. Data were collected from April 17th to 5th August 2020, in the six countries.

The confidentiality and anonymity of data were guaranteed in each country by not identifying IP addresses. All potential participants were informed about the goal of the study. Contact details for the academics responsible for the research in each country were provided should participants have any concerns or questions. Participants indicated that they had read and understood consent information by checking boxes at the start of the questionnaire. There were no mandatory answers and an “exit” or “withdraw” button on each page permitted participants to withdraw from the survey at any time. A debriefing information sheet on where to go for further help (e.g., licensed psychologist) and LGBTQ+ community support services and COVID-19 resources was displayed for participants as they finished or exited the online survey. Completing the questionnaire took about 15–20 minutes and participation was without monetary compensation. The study was approved by the Ethics Committee of the host institution in each country.

Data analysis

To inspect differences in the psychosocial effects of the pandemic, and given imbalances in the number of participants in each country, we employed the Kruskal-Wallis non-parametric test to evaluate differences among groups on

median change in the variables of interest (considering the low number of participants, Sweden was not considered in comparative analyses). We performed bivariate correlations between the psychosocial variables, and then ran hierarchical regression models on mental health outcomes (i.e. depression and anxiety) using two steps. For control purposes, the first step included the following variables: age, educational level, work status, and relationship status. We also included two COVID-19-related stressors: lockdown status (0 = total/partial; 1 = no lockdown); and household situation (0 = resides with family/1 = returned temporarily). Given patterns of differences between countries regarding the psychosocial effects of the pandemic, we divided participants into two groups (0 = South American countries; 1 = European countries) and this variable was also entered as a sociodemographic predictor. Finally, the seven variables measuring the psychosocial effects of the pandemic were entered in the second step. Because our main goal was to investigate the impact of the COVID-19 pandemic among young adults from sexual and gender minority communities as a whole, we did not consider the differential effect of sex, sexual orientation, and gender identity on outcomes. Data analyses were conducted using SPSS 25 while an interactive online tool was used to calculate the effect size of differences yielded by the Kruskal-Wallis test (Lenhard & Lenhard, 2016).

Results

Differences between countries regarding the effects of the pandemic

The Kruskal-Wallis test, which was corrected for tied ranks, yielded significant results for all variables (Table 4), with small to medium size effects and one notable large effect size difference regarding fear of infection. In accordance with our expectations, pairwise comparisons showed that participants in Brazil and Chile reported significantly more negative psychosocial effects of the pandemic. Conversely, the four European countries did not differ on most of the variables and displayed lower levels of concern about the psychosocial effects of the pandemic when compared to their South American counterparts.

Predictors of mental health outcomes

Prior to conducting regression analyses, we verified that the distribution of the continuous variables were within the normality range regarding both skewness (−1.22 to 0.57) and kurtosis (−1.52 to 1.27). We also examined the significant bivariate correlations between participants' sociodemographic characteristics, items representing the psychosocial effects of the pandemic, and mental health outcomes (depression and anxiety) (table available from lead author by request). While among sociodemographic variables, only age, educational

Table 4. Mean ranks and Kruskal-Wallis statistics for study variables.

Variable	BR (n = 623)	CL (n = 716)	PT (n = 359)	UK (n = 96)	IT (n = 107)	χ^2	df	η^2
Pandemic affected life	932.70 ^b	1071.80 ^a	793.50 ^c	915.04 ^{a,b,c}	809.93 ^{b,c}	75.14 [*]	4, 1901	.038
Emotionally affected by pandemic	1047.09 ^a	1018.88 ^a	725.14 ^b	846.23 ^b	789.14 ^b	107.77 [*]	4, 1901	.055
Fear of infection	1192.37 ^a	1016.54 ^b	623.02 ^c	629.71 ^c	495.72 ^c	373.90 [*]	4, 1901	.195
Uncomfortable in household	1066.51 ^a	961.35 ^b	816.99 ^c	840.79 ^{b,c}	757.72 ^c	66.97 [*]	4, 1901	.033
"Suffocated" LGBTQ identity	908.00 ^a	884.21 ^a	717.46 ^b	693.05 ^b	687.08 ^b	60.55 [*]	4, 1666	.034
Isolation from non-LGBTQ friends	823.28 ^a	1047.01 ^a	806.73 ^b	789.07 ^b	726.01 ^b	76.58 [*]	4, 1898	.039
Isolation from LGBTQ friends	1011.77 ^{a,b}	1040.54 ^a	780.07 ^c	846.06 ^{b,c}	633.54 ^c	103.57 [*]	5, 1897	.053

* $p < .001$; Different superscripts (a, b, and c) mean statistically significant differences at $p < .05$ (a Bonferroni correction was applied controlling for Type I error across tests).

level, and work status correlated with depression and anxiety, all the psychosocial effects of the pandemic significantly correlated with the outcome variables. All the indicators in our regression analyses yielded results within the established cutoff values for multicollinearity (for correlations; tolerance > 0.53 and VIF < 1.88 for both depression and anxiety).

The hierarchical regression models for depression (Table 5) and anxiety (Table 6) were significant, explaining 22% and 19%, respectively, of the variance of the outcome variables. In both models, sociodemographic predictors were weaker predictors of mental health outcomes than psychosocial effects of the pandemic. The emotional effect of the pandemic was a moderate predictor of both depression and anxiety.

In the depression model, participants who were younger, less educated, who were not working, who were living in a European country, who felt more emotionally affected by the pandemic, who felt more uncomfortable at home, and who felt more isolated from their non-LGBTQ+ friends, also reported higher levels of depressive symptoms (Table 5).

The model for anxiety was similar to the model for depression except that educational level was not associated with anxiety levels. Furthermore, those

Table 5. Hierarchical regression results for depression.

Variable	B	95% CI for B			β	R^2	ΔR^2
		LL	UL	SE B			
Step 1						.03	.03***
Constant	1.76	1.46	2.06	0.15			
Age	−0.02	−0.03	−0.01	0.01	−.08**		
Educational level	−0.09	−0.16	−0.01	0.04	−.06*		
Work status	−0.13	−0.22	−0.05	0.04	−.08**		
Relationship status	0.01	−0.06	0.09	0.04	.01		
Lockdown status	0.02	−0.07	0.10	0.04	.01		
Household status	0.06	−0.04	0.15	0.05	.03		
Continent	−0.06	−0.14	0.02	0.04	−.04		
Step 2						.22	.19***
Constant	0.42	0.10	0.73	0.16			
Age	−0.01*	−0.03	−0.00	0.01	−.06*		
Educational level	−0.11**	−0.18	−0.04	0.04	−.07**		
Work status	−0.11**	−0.18	−0.03	0.04	−.07**		
Relationship status	−0.04	−0.10	0.03	0.03	−.02		
Lockdown status	−0.03	−0.11	0.05	0.04	−.02		
Household status	0.06	−0.03	0.15	0.04	.03		
Continent	0.16***	0.08	0.24	0.04	.10***		
Pandemic affected life	−0.01	−0.02	0.01	0.01	−.01		
Emotionally affected by pandemic	0.11***	0.10	0.13	0.01	.34***		
Fear of infection	−0.00	−0.02	0.01	0.01	−.01		
Uncomfortable in household	0.05***	0.03	0.06	0.01	.18***		
“Suffocated” LGBTQ identity	0.01	−0.00	0.02	0.01	.03		
Isolation from non-LGBTQ friends	0.02*	0.00	0.03	0.01	.06*		
Isolation from LGBTQ friends	0.00	−0.01	0.01	0.01	.00		

CI = confidence interval; LL = lower limit; UL = upper limit; Educational level: 0 = less than 12 years, 1 = higher education; Work Status: 0 = not working, 1 = working; Relational status: 0 = not in a relationship, 1 = in a relationship; Lockdown status: 0 = not confined/partially confined, 1 = confined; Household status: 0 = returned temporarily to family, 1 = resides habitually with family; Continent; 0 = South American countries, 1 = European countries;

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

Table 6. Hierarchical regression results for anxiety.

Variable	B	95% CI for B		SE B	β	R ²	Δ R ²
		LL	UL				
Step 1						.03	.03*
Constant	1.52	1.24	1.81	0.15			
Age	−0.02**	−0.03	−0.01	0.01	−.09**		
Educational level	−0.01	−0.08	0.07	0.04	−.01		
Work status	−0.14***	−0.22	−0.06	0.04	−.09***		
Relationship status	0.07	0.00	0.14	0.04	.04		
Lockdown status	−0.14	−0.22	−0.06	0.04	−.08		
Household status	0.08	−0.01	0.17	0.05	.04		
Continent	−0.06	−0.13	0.02	0.04	−.04		
Step 2						.19	.16***
Constant	0.25	−0.06	0.55	0.16			
Age	−0.02**	−0.03	−0.00	0.01	−.07**		
Educational level	−0.03	−0.09	0.04	0.03	−.02		
Work status	−0.13***	−0.21	−0.06	0.04	−.09***		
Relationship status	0.02	−0.04	0.09	0.03	.01		
Lockdown status	−0.19***	−0.27	−0.12	0.04	−.12***		
Household status	0.09*	0.00	0.17	0.04	.05*		
Continent	0.17***	0.10	0.25	0.04	.11***		
Pandemic affected life	0.02	−0.00	0.03	0.01	.04		
Emotionally affected by pandemic	0.10***	0.08	0.11	0.01	.30***		
Fear of infection	0.02**	0.00	0.03	0.01	.07**		
Uncomfortable in household	0.03***	0.02	0.04	0.01	.12***		
“Suffocated” LGBTQ identity	0.00	−0.01	0.01	0.01	.01		
Isolation from non-LGBTQ friends	0.01	0.00	0.03	0.01	.06*		
Isolation from LGBTQ friends	−0.00	−0.02	0.01	0.01	−.01		

CI = confidence interval; LL = lower limit; UL = upper limit; Educational level: 0 = less than 12 years, 1 = higher education; Work Status: 0 = not working, 1 = working; Relational status: 0 = not in a relationship, 1 = in a relationship; Lockdown status: 0 = not confined/partially confined, 1 = confined; Household status: 0 = returned temporarily to family, 1 = resides habitually with family; Continent; 0 = South American countries, 1 = European countries; * $p < .05$. ** $p < .01$. *** $p < .001$.

who resided habitually with their parents, who were not totally confined at home, and who were more afraid of being infected, also reported higher levels of anxious symptoms (Table 6).

Discussion

Our aim in the present work was twofold. First, we looked at differences in the psychosocial effects of the COVID-19 pandemic as experienced by LGBTQ+ young adults, as a function of country of residence. Second, we explored the associations between the psychosocial effects of the COVID-19 pandemic and two mental health indicators (i.e. depression and anxiety), controlling for participants' sociodemographic characteristics.

More negative psychosocial effects of the pandemic were reported by participants from Brazil and Chile than by their counterparts from Europe. Participants in South America reported they felt more “suffocated” because they could not express their LGBTQ+ identity with their family in the situation of confinement, than their European peers. These results may be partly explained by differences regarding the acceptance of LGBTQ+ individuals

across the two continents (Barrientos, 2019; Corrêa, 2018; Flores, 2019; Paternotte & Kuhar, 2018; Pew Research Centre, 2020).

Furthermore, local severity of the COVID-19 pandemic and governmental measures may have also played an important role in the above-mentioned differences. Brazil ranked second in absolute number of deaths and Chile was the country in the present study with the highest number of total cases per 100,000 population (European Centre for Disease Prevention and Control-ECDPC, 2020). Also, because COVID-19 spread from East to West, at the time of data collection infection rates were still growing in America (especially in Latin America) but starting to decrease in Europe (European Centre for Disease Prevention and Control-ECDPC, 2020). In accordance, our results show that fear of infection was significantly greater in South America than in Europe (the difference with the highest size effect).

Regarding governmental measures, we note that stay-at-home orders or recommendations for the general population were still active in Brazil and Chile as of 7 August 2020. Perceptions about the gravity of the situation and the future course of the pandemic might have appeared bleak to our South American participants, and have thus contributed to the present results (Brooks et al., 2020; Holmes et al., 2020; Rubin & Wessely, 2020). Many researchers already speak of the current health crisis as a syndemic to highlight the role of inequality in the varied effects of the COVID-19 pandemic (Bambra, Riordan, & Ford et al., 2020).

Predictors of mental health outcomes were similar for depression and anxiety, which is consistent with studies that suggest both distinctive and overlapping features of these two mental health outcomes (e.g., Eysenck & Fajkowska, 2018). Sociodemographic features associated with depression and/or anxiety included age, educational level, and work status. Younger individuals with a lower educational level, and without a job have less access to financial resources and are likely to be more dependent upon their family of origin than their employed peers (Oliveira, Mendonça, Coimbra, & Fontaine, 2014), which may have contributed to increased vulnerability in terms of their mental health during the COVID-19 pandemic. Although participants from South American countries reported being more affected by the pandemic, being from Europe was more predictive of negative mental health outcomes. This result might be accounted for by a realistic appraisal of the psychosocial effects of the pandemic in Brazil and Chile, two countries where, at the time of data collection, infection rates and deaths were on the rise (ECPDC, 2020).

After controlling for sociodemographic characteristics, psychosocial factors played a more important role in mental health symptoms. Specifically, participants who reported feeling more emotionally affected by the pandemic also displayed higher levels of depression and anxiety, which suggests that quarantine situations did indeed impact individuals' mental health (Brooks et al., 2020; Holmes et al., 2020; Rubin & Wessely, 2020). Furthermore, feeling

uncomfortable in the household in the current situation was also associated with both depression and anxiety. Although this item correlated significantly with “To what extent do you feel ‘suffocated’ because you cannot express your LGBTQ+ identity with your family/the people you live with in the current situation of confinement” ($r = .42, p < .001$), our findings must be interpreted with caution as feeling uncomfortable at home does not directly reveal the reasons behind the discomfort. Still, the association of an unaffirming or hostile family climate with higher levels of depression and anxiety may be particularly concerning given the impact of stigma on LGBTQ+ young adults’ mental health (Chakraborty et al., 2011; Fish et al., 2020; Green et al., 2020; Hendricks & Testa, 2012; Neighmond, 2020; Perez-Brumer et al., 2017). Furthermore, the seriousness of this concern is compounded when sources of support other than the family are not available (Kaniuka et al., 2019; OutRight Action International, 2020; Parra et al., 2018; Salerno et al., 2020, 2020; Venkatraman, 2020).

Participants who were not confined (or were partially confined) and those who were more afraid of being infected reported more anxiety symptoms. It is reasonable to speculate that participants who stayed at home felt more secure, were also less afraid of being infected, and were thus less anxious (Brooks et al., 2020; Holmes et al., 2020; Rubin & Wessely, 2020). If being totally confined was associated with less anxiety, on the other hand, residing habitually with family increased anxiety. Finally, although individuals who reported feeling more isolated from their non-LGBTQ+ friends also reported feeling more depressed (marginally significant regression coefficient), isolation from LGBTQ+ friends was not a predictor of depression or anxiety levels. We wonder whether these feelings of isolation may have been mitigated by online social interactions during confinement (López, 2020). However, at the time of data collection, some participants had not yet been separated from their peers for a significant length of time while other participants resided in countries where stricter stay-at-home orders had been lifted allowing small gatherings.

This study has several limitations. First, because of its cross-sectional nature, we can only establish associations between variables. How the mental health of our participants will be impacted in the medium and long-term needs to be explored in future longitudinal research. Second, more complex models based on minority stress and resilience frameworks (Meyer, 2003, 2015; Suen, Chun Ho Chan, & Wong, 2020) pinpointing to the role of risk and protective factors in the mental health of LGBTQ+ people, including family functioning, level of “outness,” or perceived stigma, need to be considered. Third, upcoming studies should take into account subgroup differences that may differentially predict depression and anxiety, such as sex assigned at birth (Pettersson, VanderLaan, & Vasey, 2017), gender identity (Borgogna, McDermott, Aita, & Kridel,

2019), and plurisexual versus monosexual sexual orientations (Ross et al., 2018). In fact, in sensitivity analyses with these sociodemographic characteristics entered in a first step, although they accounted for a small proportion of the explained variance ($R^2 = 4\%$ for both outcomes), sex at birth and gender identity were significant predictors (but not plurisexual versus monosexual sexual orientation) of mental health outcomes. As foreseen, females at birth and transgender participants were more depressed and anxious than their male and cisgender peers. These results underscore the importance of including these variables in future studies. However, it should be noted that these sensitivity analyses excluded participants who identified as asexual, intersex, and with other sexual and gender minority identities ($N = 432$). Thus, notwithstanding the important role of these variables, our goal of exploring the impact of sociodemographic characteristics and psychosocial effects of the COVID-19 pandemic among young adults from the sexual and gender minority community as a whole allowed for a more inclusive portrait of the situation at this point. Fourth, the small size of the UK and Italian samples raises some concerns and comparative results should be read carefully. Fifth, to avoid single item measurement bias, the potential for compiling a psychological scale from these items to measure the psychosocial effects of the pandemic should be explored. Sixth, the weak magnitude of the associations between most variables imposes some limits on the generalization of our results. Finally, participation in any on-line survey is limited by ease of access to the internet and this is still a problem in some isolated locations especially under lockdown conditions.

Notwithstanding the limitations, findings suggest that LGBTQ+ community groups, health and educational services, and other social support networks need to remain particularly attentive and available during periods of confinement to meet the needs of LGBTQ+ young adults (Council of Europe Secretary General Marija Pejčinović Burić, 2020; OHCHR, 2020; OutRight Action International, 2020; Salerno et al., 2020, 2020; Society for Research in Child Development, 2020). Results of this study can also inform public policies that contribute to improving the mental health of LGBTQ+ individuals across the world. Quarantine situations are associated with decreased psychological mental health, including among LGBTQ+ individuals, and the wider socio-cultural context is associated with differential effects of the COVID-19 pandemic on young adults.

Disclosure statement

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