

# A Systematic Review of COVID-19 Risk Factors Impact on the Mental Health of LGBTQ+ Youth

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## Abstract

Youth who identify as lesbian, gay, bisexual, transgender, and queer or questioning (LGBTQ+) are a growing population in the U.S. and are disproportionately impacted by mental health disparities. The COVID-19 pandemic has been associated with increased depression, anxiety, and other psychological issues among the general population. The purpose of this review was to examine risk factors exacerbated by COVID-19 and their effects on the mental health of LGBTQ+ youth. The PRISMA (Preferred Reporting Items for Systematic Review and Meta-Analyses) method for reporting was used to identify, analyze, and synthesize the selected literature. Thirteen studies were identified that met the inclusion criteria. COVID-19 risk factors were categorized at the individual, relational, community, and societal levels. The results suggest that the following factors were associated with poorer mental health: individual factors of less education, income, and employment; concerns about COVID-19; pre-existing mental health issues and being a sexual or gender minority; and relationship factors of reduced socialization and spending more time with unsupportive family. Additionally, loss of safe spaces (school, youth organizations, etc) at the community level, social distancing policies, and a loss of access to gender-affirming care at the societal level were detrimental to mental health. LGBTQ+ youth can benefit from resources which allow them to stay connected to peers, friends, community resources, the LGBTQ+ community, and supportive educational environments during “stay at home” orders. The COVID-19 pandemic worsened many risk factors for LGBTQ+ youth, making mental health resources vital for this group.

**Keywords:** COVID-19, mental health, sexual and gender minority, youth

## 1. Introduction

### 1.1 Introduce the Problem

In the United States, more youth identify as lesbian, gay, bisexual, transgender, and queer or questioning (LGBTQ+) than any other age group. Nearly 16% of Gen Z, comprised of people age 18–24 years old, and 9.5% of youth age 13–17 years old identify as LGBTQ+ (Jones, 2021; The Williams Institute, 2020). Because of the increased proportions of LGBTQ+ identities in this age group and the high prevalence of mental health issues experienced by LGBTQ+ youth, mental health is a pressing public health concern for this sub-group.

Mental health is an urgent concern for LGBTQ+ youth. These youth are almost three times as likely to experience depression, anxiety, and substance abuse disorders than similarly aged heterosexual youth (American Psychiatric Association, 2017). Further, findings from a national LGBTQ+ youth survey reveal that in the past year 19.0% of LGBTQ+-identified youth aged 13–18 and 8.3% of LGBTQ+-identified youth aged 19–24 have attempted suicide (The Trevor Project, 2021). Estimates indicate that every 45 seconds in the United States, one LGBTQ+ youth aged 13–24 attempts suicide.

There are a variety of factors associated with the burden of mental health issues among LGBTQ+ youth. The minority stress theory posits that the mental and physical health of LGBTQ+ people is, at least in part, impacted by recurrent stigma, discrimination, victimization, identity concealment, and internalized homophobia (Meyer, 1995; Meyer, 1993). Consequently, research shows that LGBTQ+ youth are more likely their heterosexual peers to experience adverse life and health outcomes related to stigma, violence, and discrimination (CDC, 2019).

As negative as social attitudes toward the LGBTQ+ community are, they have improved in recent decades. This has empowered LGBTQ+ youth to “come out” at younger ages. However, this earlier disclosure can put these

youth in vulnerable situations with peers and family members (D'Augelli et al., 2008; Russell et al., 2014). Because of discrimination, many LGBTQ+ youth must process their identity and simultaneously develop a network of support. When faced with discrimination or victimization, studies predict that LGBTQ+ youth are likely to experience lasting mental health effects that frequently persist into adulthood (Hatzenbuehler & Pachankis, 2016).

Macro events can also influence the environments of LGBTQ+ youth. In December 2019, an outbreak of a novel virus hit Hubei, China (WHO, 2020). The rise of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) – coined “coronavirus,” or COVID-19 - was soon recognized as a critical risk to public health (AJMC, 2021). Due to its rapid transmission, the World Health Organization designated COVID-19 as a pandemic in March 2020 (WHO, 2020). The rapid spread of the virus resulted in the implementation of safeguards and restrictions that were intended to slow the spread of the disease (Unwin et al., 2020). In some locales, “lockdown” orders resulted in the closure of businesses, health care facilities, schools, and in-person support networks (Unwin et al., 2020). “Stay at home” recommendations or mandates led to travel restrictions and limitations on gatherings (CDC, 2020a). Public transportation was curtailed, and public spaces including national and local parks were closed (Honey-Rosés et al., 2020). Only essential services were permitted to continue functioning (Pedrosa et al., 2020).

People of all backgrounds experienced stress, fear, and anxiety stemming from the COVID-19 quarantine (Edwards et al., 2020). Social distancing, quarantine measures, increased social media usage, and boredom further exacerbated fear and anxiety, and led to feelings of isolation and loneliness for many (Pedrosa et al., 2020; Cauberghe et al., 2020). Certain populations appear to have been at an elevated risk for mental health challenges. Such groups include frontline workers, young adults, food service workers, the LGBTQ+ community, those with existing mental health conditions and substance abuse disorders, the socially isolated, the homeless, and the economically vulnerable, plus racial and ethnic minorities (CDC, 2020b; Pedrosa et al., 2020). Studies show that some sub-groups, including LGBTQ+ youth, were more likely to contemplate or attempt suicide during COVID-19 (Czeisler et al., 2020; Herța, 2020; Johnson et al., 2021).

During periods of “stay at home” mandates, people were confined to their homes, some of which were not safe or supportive (Usher et al., 2020). The associated isolation denied people access to support networks, LGBTQ+ spaces, and friends, resulting in loneliness, increased screen time, and decreased physical activity (Fegert et al., 2020; Usher et al., 2020). Not surprisingly, college students were found to be at increased risk of depression when these public health measures are enacted (Coughenour et al., 2020). While most public health measures helped battle the COVID-19 virus, they also created barriers to mental, social, and physical support. The purpose of this review is to examine COVID-19 risk factors and their effects on LGBTQ+ youth mental health. This study contributes uniquely to understanding risk factors facing LGBTQ+ youth beyond the current literature because it summarizes risk factors exacerbated during an unprecedented time of a global pandemic. Here we group risk factors using the Centers for Disease Control and Prevention’s (CDC) four level Social Ecological Model which includes the individual, relationship, community, and societal levels (CDC, 2004). The Social Ecological Model is helpful because it allows for the understanding of a range of factors that put people at risk for mental health issues.

## 2. Method

To evaluate the impacts of COVID-19 on LGBTQ+ youth mental health, a systematic literature review was conducted. ‘Youth’ are defined as between the ages of 15 to 24 according to the World Health Organization (WHO), and this definition also includes college students for this study (WHO, 2019). Data were collected through searches of peer-reviewed databases. The Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) method was used to select, extract, evaluate, and synthesize the selected literature.

Our key search terms were (LGBTQ OR LGBTQ+ OR sexual and gender minority OR SGM OR non-binary OR nonbinary OR gender nonbinary OR gender non-binary OR transgender OR gender fluid OR gender nonconforming OR lesbian OR gay OR bisexual OR queer) AND (mental health OR psychological health OR depression OR anxiety OR post-traumatic stress disorder OR PTSD) AND (COVID-19 OR SARS-CoV-2 OR Severe Acute Respiratory Syndrome Coronavirus 2 OR 2019nCoV OR HCoV-19) AND (young adult OR youth OR college student OR adolescent). Scopus, PubMed, and Academic Search Premier were the selected data bases.

To be included in this review, papers need to be peer-reviewed, written in English, and had to have assessed mental health outcomes during the COVID-19 pandemic among LGBTQ+ youth aged 15 to 24 years old. Cross-sectional, case-control, randomized control trial, cohort, and qualitative study designs were eligible for inclusion. Literature published before March 2020, non-peer-reviewed, letters to the editor, systematic reviews, and articles written in a language other than English were excluded.

The PRISMA flow diagram used in the selection process of including articles is depicted in Figure 1. The initial search across the three databases returned 73 potentially relevant articles. After duplicates were removed and other criteria applied, 37 articles remained. Step 1 of the screening process eliminated 22 articles because they lacked a focus on youth, LGBTQ+, mental health, or COVID-19, or did not meet study design criteria. The remaining 15 articles were read fully and two more were eliminated, as one did not indicate the participant’s gender and the other did not report the sexual orientation of participants. Thirteen articles remained for the final review.

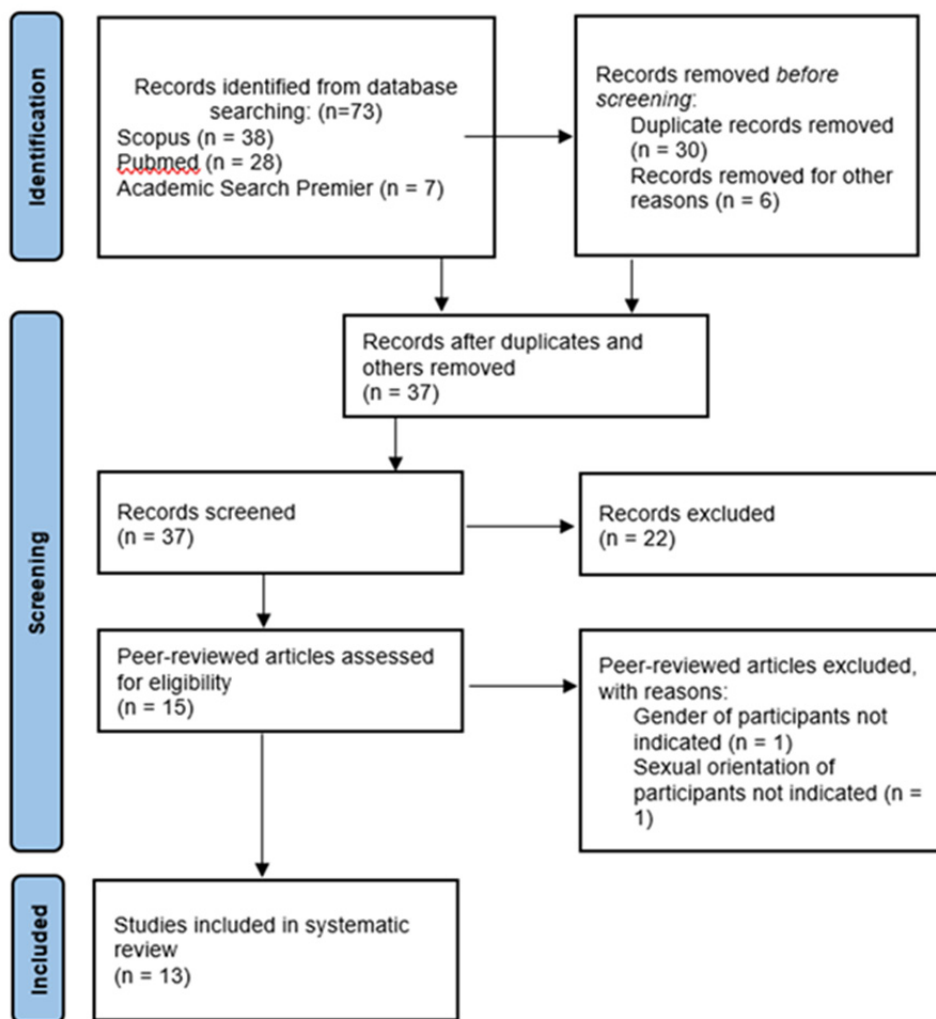


Figure 1. PRISMA Flow Diagram. Moher et al. (2009)

### 3. Results

Table 1 shows the study characteristics and their findings. Eight studies used a cross-sectional design, one of which was qualitative, and four studies used longitudinal cohort designs. Ten studies were completed in the United States, one each in Hong Kong and Portugal, and one across six countries (Portugal, Italy, Sweden, Brazil, Chile, and UK). Eight studies specifically examined the impacts of the COVID-19 pandemic and subsequent quarantine on the mental health of LGBTQ+ youth. Two studies focused on increased drug and alcohol consumption during the pandemic, as well as hopelessness, pride, minority stress, and LGBTQ+ group identification. Three studies were not specific to the youth age bracket; however, more than half of their participants were in the prescribed age range. These studies focused on mental health, psychosocial effects (e.g. social support, loneliness, social disruption, employment, social status), and access to healthcare.

Table 1. Data Extraction from Reviewed studies

Author(s)/ Year	Location	Number of Subjects	Sexual Orientation (SGOI)	Gender Identity	Age	Study Design	Study Description	Results
Fish, J.N., McInroy, L.B., Paceley, M.S., Williams, N.D., Henderson, S., Levine, D.S., & Edsall, R.N. (2020)	United States	n=159	LGBTQ+		13-19	Qualitative study	31 simultaneous, text-based chats were collected and transcribed during the start of statewide social distancing mandates during Spring 2020. The results were analyzed.	Hardships included sustaining mental health, isolation with unsupportive family members, and loss of identity-affirming comradery and support.
Fruehwirth, J.C., Biswas, S., & Perreira, K.M. (2021)	Chapel Hill, NC	n = 419 first year students	Male = unknown Female = unknown Sexual Gender Minority (SGM) = unknown (defined as a student who reported any sexual orientation other than heterosexual, a transgender identity, or a gender identity other than their sex at birth)		18 to 20 years old	Longitudinal cohort study	The goal was to deliver early approximations of the impacts of the pandemic on depression and anxiety symptoms of US first year college students. Data was collected via online survey at a large university in North Carolina twice. The first survey (Wave I) was sent to participants in October/November 2019. Those who did not respond to the first survey were sent it again in January/February 2020 (Wave II).	<ul style="list-style-type: none"> <li>· The prevalence of moderate to severe anxiety increased from 18.1% pre-pandemic to 25.3% within four months after the start of the pandemic.</li> <li>· The prevalence of moderate to severe depression grew from 21.5% to 31.7%.</li> <li>· White, female, and SGM students were at the greatest risk of experiencing increases in symptoms of anxiety.</li> <li>· Non-Hispanic Black, female, and SGM students were at the greatest risk of experiencing increases in symptoms of depression.</li> <li>· Remote learning and social isolation added to increases in anxiety and depression symptoms.</li> <li>· Being diagnosed with Covid-19, loss of work, and having oneself or loved ones hospitalized were not linked to increases in anxiety nor depression symptoms.</li> </ul>
Gato, J., Barrientos, J., Tasker, F., Miscioscia, M., Cerqueira-Santos, E., Malmquist, A., Seabra, D., Leal, D., Houghton, M., Poli, M., Gubello, A., de Miranda Ramos, M., Guzmán, M., Urzúa, A.,	Portugal, Italy, Sweden, Brazil, Chile, and UK	n = 1934 Sex assigned at birth: Female = 969 Male = 929	Gender Identity: Cisgender = 1567 Transgender = 120 Non-binary = 215 Other = 23 Sexual Orientation: Gay/lesbian = 1008		18 to 29 years old	Cross-sectional survey	Each country created online surveys that were advertised on LGBTQ+ friendly websites and social media pages (such as Instagram and Facebook). Local LGBTQ+ community groups helped to promote the surveys. The overall objective was to analyze psychosocial impacts of the	<ul style="list-style-type: none"> <li>· Higher levels of depressive symptoms were reported by younger participants, less educated participants, participants who were unemployed, participants living in European nations, participants who reported feeling more emotionally impacted by COVID-19, participants</li> </ul>

Ulloa, F., & Wurm, M. (2021)	Intersex = 36 Bisexual = 624 Pansexual = 96 Asexual = 35 Heterosexual = 25 Other (e.g. queer) = 145	pandemic on LGBTQ+ young adults living at home with parents.	who felt less comfortable staying home, and participants who reported feeling more social isolation from non-LGBTQ+ friends. · Higher levels of anxiety scores were also associated with each of the above characteristics, though level of education was not linked to anxiety.	
Gato, J., Leal, D., & Seabra, D. (2022)	n = 403 Sex assigned at birth: Female = 211 Male = 189 Intersex = 3 Gender Identity: Cisgender women = 179 Cisgender men = 158 Trans women = 6 Trans men = 15 Non-binary persons = 30 Other = 15 Sexual Orientation: Gay/lesbian = 227 Bisexual = 112 Pansexual = 47 Asexual = 5 Heterosexual = 7 Other (e.g. queer) = 4	16 to 30 years old Cross-sectional survey	Online survey data was collected from April 2020 to May 2020. The goals were to 1) examine the relationship between mental health and the psychosocial impacts of COVID-19, controlling for sociodemographics and 2) to analyze the mitigating effect of familial environment between mental health outcomes and the impact of the pandemic on LGBTQ young adults and adolescents at the individual level.	· Lack of college education, negative daily pandemic impacts, and an unsupportive family environment were linked to greater levels of anxiety and depression. · Family environment somewhat arbitrated the relationship between individual pandemic-related impacts and anxiety and depression. · Education level was the only sociodemographic factor associated with mental health. · Social isolation did not predict anxiety or depression levels. · Portugal is a family-oriented country where stigma for LGBTQ could have effects on their mental health as they return home during quarantine.
Gonzales, G., Loret de Mola, E., Gavulic, K.A., McKay, T., & Purcell, C. (2020)	n = 477 Sexual Orientation Gay/lesbian = 99 Bisexual = 91 Queer = 104 Pansexual = 66 Asexual = 51 Questioning = 33 Other = 33 Gender Identity Cisgender man = 74 Cisgender woman = 202 Transgender = 43 Gender nonconforming =	18 to 25 years old Cross-sectional survey	Utilizing targeted online advertising and LGBT community organizations, students attending 254 colleges were recruited to complete a survey. The objective was to ascertain U.S. LGBT college students' mental health needs during the COVID-19 pandemic.	· Almost half (45.7%) of LGBT college students have families that are either unaware of or do not support the student's LGBT identity. · About 60% LGBT college students that were sampled reported experiencing anxiety, depression, and psychological distress during the pandemic.

			120 Other = 38		
Holloway, I.W., Garner, A., Tan, D., Miyashita Ochoa, A., Santos, G.M., & Howell, S. (2021)	Los Angeles, CA San Francisco, CA	n=10,079	Gender Male Sexual Orientation Gay Bisexual Other	18 – 34 = 5,596 35+ = 4,483	Cross-sectional survey The objective was to determine how social distancing impacts men who have sex with men.
Hoyt, L.T., Cohen, A.K., Dull, B., Maker Castro, E., & Yazdani, N. (2020)	Bronx, NY Stanford, CA	n = 707	Gender Woman = 431 Man = 243 Nonbinary, genderqueer, or gender nonconforming = 20 Transman = 10 Different identity = 3 Sexual orientation Heterosexual or straight = 503 Bisexual = 89 Gay or lesbian = 48 Queer = 17 Questioning = 24 Pansexual = 15 Asexual = 8	18 to 22 years old	Longitudinal cohort study The goal of this study was to utilize a diverse sample of U.S. college students to capture young adults' perceived stress and anxiety during the COVID-19 pandemic.
Jarrett, B.A., Peitzmeier, S.M., Restar, A., Adamson, T., Howell, S., Baral, S., & Beckham, S.W. (2020)	United States	n = 964	Self-Reported Transgender Identity Transgender man = 201 Transgender woman = 594 Non-binary (NB) only = 17 NB transgender woman = 7 NB transgender man = 2	18 to 29 years = 487 30 to 39 years = 287 40 to 49 years = 132	Cross-sectional survey Individuals from 76 countries were surveyed between April 2020 and August 2020. This study analyzed the influence of the COVID-19 pandemic and resulting measures to control its spread on the mental health, economic wellbeing, and gender-affirming care of gender diverse individuals around the world.

· Greater feelings of anxiety (aOR = 1.37) and loneliness (aOR = 1.36) were reported among those practicing social distancing. Participants engaging in social distancing also reported being less content with their present sex life (aOR = 0.76) and experiencing impacts to their sex life (aOR = 2.95).

· All students reported suffering from stress and anxiety, and levels were particularly high in April.  
· They identified inequities among college students as they related to mental well-being, particularly with regard to those with diverse gender identities and sexual orientations.  
· When compared to cisgender, heterosexual students, transgender, gender diverse, and sexual minority youths experienced worse outcomes.

· As a result of COVID-19, 55.0% (n=320/582) of participants reported that access to gender-affirming resources was reduced.  
· 38.0% (n=327/860) of participants reported that their time living as their gender was reduced.  
· Approximately half of the participants affirmatively screened for depression (50.4%, n=442/877) and anxiety (45.8%, n=392/856)

		Transgender man and transgender woman = 7 Man and woman = 41	50+ years = 58		
Kamal, K., Li, J.J., Hahm, H.C., & Liu, C.H. (2021)	n = 981  Non-SGM = 624: Male = 78 Female = 546 Other = 0  SGM = 320: Male = 41 Female = 239 Other = 40	SGM Lesbian = 38 Gay = 33 Bisexual = 140 Asexual = 28 Questioning = 22 Self-Identify = 38	18 to 30 years old Longitudinal cohort study	An online survey amassed socio-demographic data and screened for both mental health and COVID-19-related outcomes. Data collection began on April 13, 2020 and concluded on June 18, 2020.	· Depression, PTSD symptoms, COVID-19-related fears, and grief were significantly higher among SGM individuals when compared with non-SGM individuals. This remained the case after controlling for pre-existing mental health conditions, discrimination experienced throughout one's lifetime, and familial supports.
Nelson, K.M., Gordon, A.R., John, S.A., Stout, C.D., & Macapagal, K. (2020)	n=151	Gender Males  Sexual orientation Gay = 79 Bisexual = 58 Heterosexual = 8 Queer/another sexual orientation = 5	14 to 17 Cross-sectional survey	An online survey was distributed between March 27, 2020 through May 8, 2020, with an overarching goal of exploring how the COVID-19 pandemic and initial social distancing mandates affected the sexual health and well-being of U.S.-based adolescent sexual minority males.	· Most (57%) respondents indicated having COVID-19-related worries. · Nearly all (91%) participants were engaged in physical distancing behaviors. · COVID-19 altered family, home, work, and school life. · Participants revealed that the pandemic negatively impacted their mental health and minimized socialization opportunities.
Salerno, J.P., Shrader, C.H., Algarin, A.B., Lee, J.Y., & Fish, J.N. (2021)	509	cisgender, transgender, non-binary, or queer and bisexual, gay/lesbian, queer, or another sexual identity	18 to 24 years old Cross-sectional survey	The goal of this study was to assess if changes in alcohol consumption since the start of the pandemic was linked to increased psychological distress in SGM college students and whether or not there were differences based on sex assigned at birth. Data was collected via online survey from May to August 2020.	· Post social distancing participants indicated using alcohol at higher levels, having less hope for the future, feeling less of an identification with the LGBTQ community, and perceiving lower levels of minority stress. · Among female SGM college students, elevated psychological distress was linked with greater levels of alcohol consumption.

<p>Scroggs, B., Love, H.A., &amp; Mont Alto, (pre and post combined)</p>	<p>n = 1895 (pre and post combined)</p>	<p>Gender (total)                  Women = 59.8%                  Man = 21.3%                  Gender-queer = 4%                  Gender non-conforming = 3.9%                  Gender variant = .5%                  Transgender woman = 18 to 2%                  Transgender man = 4.1%                  Not listed = 4.5%                    Sexual orientation (total)                  Gay/Lesbian = 19.1%                  Bisexual = 55.7%                  Straight = 1.7%                  Pansexual = 12.6%                  Asexual = 7.4%                  Not listed = 3.4%</p>	<p>18 to 29 years old                  Longitudinal cohort study</p>	<p>Using an online survey that was distributed to different sets of respondents both before and after the implementation of social distancing, this study compared the mental health of LGBTQ emerging adults before and during physical distancing guidelines.</p>	<p>Post-social distancing participants reported higher levels of alcohol consumption, lower levels of connection to and pride surrounding being part of the LGBTQ community, lower levels of optimism for the future, and a lower perception of minority stress.</p>
<p>Suen, Y.T., Randolph, R.C.H., &amp; Wong, E.M.Y. (2020)</p>	<p>n = 857</p>	<p>Gender                  Male = 376                  Female = 481                    Sexual orientation                  Gay / Lesbian = 524                  Bisexual / Pansexual = 276                  Others (e.g., asexual, queer, questioning) = 57</p>	<p>16 to 25 = 471                  26 to 35 = 288                  36 or above = 98                  Cross-sectional survey</p>	<p>In order to assess how COVID-19 had impacted their mental health, LGB people were surveyed in Hong Kong.</p>	<ul style="list-style-type: none"> <li>· Over half of respondents reported moderate to high levels of health-related worries (63.0%).</li> <li>· Over a quarter of the respondents met clinical depression (31.5%) and generalized anxiety disorder (27.9%) criterion.</li> <li>· Compared to their peers, respondents aged 16 to 25 demonstrated significantly elevated levels of depression and anxiety symptoms (<math>F(2, 854) = 7.76, p &lt; .001</math> and <math>F(2, 854) = 6.71, p = .001</math>, respectively).</li> </ul>



### *3.1 Risk Factors Worsened by COVID-19 and the Effects on Mental Health of LGBTQ+ Youth*

#### 3.1.1 Individual Level

Eight of the thirteen studies examined the impact of individual level risk factors and found that SGM status, education, income, and pre-existing mental health conditions were associated with worse mental health during the pandemic. In Gato et al.'s (2021) study, less educated participants experienced greater levels of depressive symptoms but not anxiety. Education was also important in Salerno et al.'s (2021) study, in that undergraduate vs. graduate status was correlated with higher psychological distress levels. Holloway et al.'s (2020) results indicated that having a university degree was positively associated with higher anxiety levels, but a college education was protective against loneliness (Holloway et al., 2020).

Financial concerns and employment status were correlated with poor mental health among LGBTQ+ youth during the COVID-19 pandemic. Studies showed that people were worried about losing their incomes and insurance (Hoyt et al., 2021; Jarrett et al., 2020) because of job loss (Gato et al., 2021). These findings were strongest among people with low incomes (Gato et al., 2021; Hoyt et al., 2021; Suen, 2020)

Other studies assessed worry about COVID-19 with a more global view. Several studies showed that fear of COVID-19 and belief that it disrupted their lives were statistically associated with stress and anxiety (Gato et al., 2021; Gonzales et al., 2020; Nelson et al., 2020). Trauma and emotional response to COVID-19 were also evaluated in several studies. Gato et al.'s (2021) depression model suggested that participants who experienced an emotional response to the pandemic reported greater incidence of depressive symptoms, although they were moderate. In Nelson et al.'s (2020) study, 57% of participants reported being "worried at least somewhat" about COVID-19, while Gonzales et al. (2020) found that those who were concerned about COVID-19 were 1.84 times as likely to experience mental distress and depression compared to those who were unconcerned (Gonzales et al., 2020). LGBTQ+ students also reported the highest rates of being diagnosed with COVID-19 (Fruehwirth et al., 2021). Gonzales et al. (2020) took a similar approach in assessing fear and found that most LGBTQ+ college students reported that COVID-19 had markedly disrupted their lives. Those experiencing "a great deal" of disruption were over twice as likely to experience recurrent mental distress and anxiety as opposed to those whose lives were disrupted less (Gonzales et al., 2020).

Pre-existing physical and mental health conditions also produced interesting findings. Holloway et al.'s (2020) study showed that pre-pandemic suicidality was associated with greater amounts of anxiety and loneliness. Kamal et al.'s (2021) study showed that a previous mental health diagnosis was a significant predictor for all mental health outcomes during the pandemic, including anxiety, PTSD, and depression.

Kamal et al. (2021) assessed sexual minority status and determined that, while being an SGM person was not a predictor of anxiety, it was a predictor of both PTSD and depression symptoms. After accounting for pre-existing mental health disorders, lifetime discrimination, and family support, SGM identity was a predictor of grief and worry related to COVID-19 (Kamal et al., 2021). Salerno et al. (2021) showed that those who identified as genderqueer or transgender exhibited higher psychological distress compared with those who identified as cisgender.

#### 3.1.2 Relationship Level

Seven of the thirteen studies evaluated the impact of relationship level factors on the mental health of SGM youth during the pandemic and found that reduced socialization with friends and having to return home to unsupportive families had a negative impact on mental health outcomes. Thirty-five percent of participants in Nelson et al.'s (2020) study reported that COVID-19 had drastically reduced their ability to socialize, which was detrimental to their mental health (e.g. increased anxiety, depression, stress). The majority of participants in Suen et al.'s (2020) study also indicated that they had reduced social contact with friends since the COVID-19 pandemic, which was also associated with higher levels of depressive symptoms.

LGBTQ+ youth who lived with their parents had higher anxiety levels (Gato et al., 2020). Studies also found that LGBTQ+ students were more likely to experience mental distress if they had unsupportive families compared with students with supportive families (Gonzales et al., 2020; Hoyt, et al., 2020; Kamal, et al., 2021). Alternatively, being in a relationship and cohabitating with a partner were protective against loneliness, with participants who were in a relationship reporting lower levels of depression and anxiety symptoms (Holloway et al., 2020; Suen et al., 2020).

#### 3.1.3 Community Level

Three of the thirteen studies examined community level factors and found the most impactful risk for poor mental

health were changes in school experiences. Many participants indicated that the pandemic had altered their school experience, limiting their access to technology and quiet work and study spaces (Hoyt et al., 2020). Some were also anxious about when school and extracurricular activities would resume, with LGBTQ+ youth suffering from increased mental health issues (e.g. stress, anxiety, depression) due to loss of access to community-based support and youth organizations (Fish, 2020; Fish et al., 2021).

#### 3.1.4 Societal Level

Seven studies considered COVID-19 social distancing policies and reduced access to care as mental health-related risk factors. Despite controlling for pre-pandemic social isolation, participants reported feelings of boredom, isolation, and being “stir crazy,” which resulted in higher levels of depression and anxiety (Fish et al., 2020; Fruehwirth et al., 2021). Further, mental health counseling and therapy was the service most often reported to be affected, with LGBT college students reporting a loss of access to mental health care as a result of quarantine (Gonzales et al., 2020; Jarrett et al., 2020). In one study, participants indicated a lack of access to gender-affirming care due to the pandemic (e.g. hormone therapy, surgical aftercare, mental health counseling and therapy, cosmetic supplies, and body modifiers), and this was associated with depression, suicide ideation, depression, and anxiety (Jarrett et al., 2020).

### 4. Discussion

LGBTQ+ youth face a myriad of challenges that impact their mental health, notwithstanding the effects of the COVID-19 pandemic. This review found that socioeconomic status is an important covariate for LGBTQ+ youth mental health outcomes: the lower a person’s socioeconomic status, the higher their risk for mental illness (Drake et al., 2021; Hudson, 2005). This is problematic because LGBTQ+ persons are more vulnerable to conditions of financial insecurity, with 22% living in poverty (The Williams Institute, 2020). Public health interventions that address the upstream issues associate with poverty and a lower socioeconomic status for SGM people are needed as well as those that address discrimination based on sexual orientation and/or gender identity.

An interesting finding in this review was that worrying about the pandemic and experiencing life disruptions were linked to increased depression and anxiety among participants. COVID-19 has led to a marked increase in anxiety, depression, and trauma- and stress-related disorders like PTSD for the general population, and LGBTQ+ youth are disproportionately impacted (Dawson et al., 2021; Tucker & Czaplá, 2021).

As the COVID-19 lockdown took effect, many LGBTQ+ youth left schools and returned home to isolate with unsupportive families which was more often cited in studies with a younger target group. The most striking factor found in this review was that LGBTQ+ youth who returned home to unsupportive families were at an increased risk for developing or exacerbating their depression and/or anxiety symptoms, with many LGBTQ+ youth experiencing added stress due to caretaking and financial responsibilities (Gonzales et al., 2020; Hoyt, et al., 2020; Kamal, et al., 2021). This review suggests that family conflict and added responsibilities without means of community or familial support could further potentiate negative mental health consequences for LGBTQ+ youth. Safe havens for LGBTQ+ youth to reside during times when they otherwise would have to live with unsupportive families could be a strategy to employ. Resources for parents to better understand how to relate with and support the LGBTQ+ children may also help reduce this risk factor.

This review found that participants’ school experiences drastically changed after being forced into distance learning. Twenty percent of college students whose classes were moved online during the pandemic struggled to find quiet places to study and reliable internet connectivity (Miller, 2021). In addition to a loss of quiet spaces, LGBTQ+ youth experienced a loss of safe spaces. Many schools provide services for LGBTQ+ youth and their families, such as integrating services, clubs, support groups, affirming services, and access to healthcare (Poirier et al., 2008). In addition to schools, many LGBTQ+ clubs, centers, health facilities, and other physical spaces were closed during the pandemic. For many LGBTQ+ youth, these are the main sources of social support, and without these services, the mental health statuses of many LGBTQ+ youth declined during distance learning (Venkatraman, 2020). During a time when social distancing was important to reduce the spread of an infectious disease, establishing virtual safe spaces is vital.

Social distancing policies led to feelings of seclusion for many study participants. The resulting social isolation from loss of routine and social interaction was detrimental to the mental health of LGBTQ+ youth, who spent more time ruminating; these effects were especially pronounced in participants with pre-existing mental health concerns (Salerno et al., 2020). Further, this review found that a lack of access to gender-affirming care created serious impacts on mental health. It is well-known that a lack of access to healthcare and mental healthcare services exacerbate existing mental health conditions (National Collaborating Centre for Mental Health, 2011). As many

gender-affirming services are considered “elective,” a lack of access to these so-called non-essential resources created a unique pressure on the LGBTQ+ community, specifically non-binary and transgender individuals (Kuzon, 2018). All health care is essential and research shows that gender affirming care can be life saving for transgender youth (Tordoff et al., 2022). It is important that continuity of care is maintained, even if only through telehealth or virtual appointments (Apple et al., 2022).

#### 4.1 Limitations

This review has limitations. Some articles were not available through the university library system, and these articles may have included relevant information about the impact of COVID-19 on the mental health of LGBTQ+ youth. In addition, because this systematic review excluded non-English articles, relevant information in other languages may not have been captured. Finally, each study had its own internal limitations and biases that were listed by their respective authors. Despite possible limitations, these studies provided valuable insight into the experience of LGBTQ+ youth during the COVID-19 pandemic.

#### 4.2 Conclusion

LGBTQ+ youth can benefit from resources which allow them to stay connected to peers, friends, community resources, the LGBTQ+ community, and supportive educational environments during periods of forced isolation. Mental health resources are vital for this group, as the COVID-19 pandemic exacerbated many mental health risk factors among this demographic. As a minority group, LGBTQ+ youth are at a greater risk for discrimination in their work environments, daily lives, health care settings, and family situations, which directly affects coping abilities during the pandemic. Programs exist to aid with LGBTQ+ inclusion including gender-sensitivity training for healthcare provider, support for families of LGBTQ+ youth, and school initiatives such as Gay-Straight Alliance clubs. To alleviate the negative mental health effects of the pandemic on a vulnerable minority population, it is crucial that programs, services, and support mechanisms continue for LGBTQ+ youth amidst a global health crisis such as the COVID-19 pandemic.

#### Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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