VULNERABILITY AND RESILIENCE: A LONGITUDINAL EXAMINATION OF MINORITY STRESS AND COPING PROCESSES IN A SAMPLE OF LGBTQ+ INDIVIDUALS DURING THE COVID-19 PANDEMIC

A Thesis Submitted to the Committee on Graduate Studies in Partial Fulfilment of the Requirements for the Degree of Master of Science in the Faculty of Arts and Science

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Abstract

Vulnerability and Resilience: A Longitudinal Examination of Minority Stress and Coping Processes in a Sample of LGBTQ+ Individuals During the COVID-19 Pandemic

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The Minority Stress Model proposes that LGBTQ+ people experience stressors unique to their identity that negatively impact their mental well-being. The model also outlines that, in the case of the LGBTQ+ community, two minority coping resources - social support and connection to the LGBTQ+ community – may act as potential minority stress buffers; however, research has been unable to determine if these are effective buffers. The current study used multiple regression and multilevel modelling to test the processes of the Minority Stress Model among 451 LGBTQ+ people over 25 timepoints during the COVID-19 pandemic. Although minority stressors and coping resources were associated with psychological distress in the expected directions, an interesting interaction between the two measures of minority stress was revealed and neither minority coping resource was found to buffer the association between minority stress and distress. In conclusion, the present study found partial support for the Minority Stress Model using longitudinal data but highlights the complex nature of these processes and how they are conceptualised in research.

Keywords: minority stress, minority coping, LGBTQ+ community, social support, identity rejection, identity concealment, psychological distress, mental health

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Introduction

Minority stress theory (Brooks, 1981; Hendricks & Testa, 2012; Meyer, 2003) posits that sexual and gender minorities experience unique stressors – referred to as "minority stressors" – that contribute to negative mental health outcomes. For example, a bisexual woman might not only be dealing with financial worries or a looming work deadline but might also be harbouring stress because she has yet to correct any of her coworkers that she has a girlfriend, not a boyfriend. The additional layer of stress this bisexual woman experiences might explain why she is more vulnerable to mental health problems, such as depression or anxiety, than her heterosexual friends. Sexual and gender minority people report greater mental health problems than their heterosexual and cisgender counterparts (Millet et al., 2017; Plöderl & Tremblay, 2015) and minority stressors contribute to these mental health disparities (Meyer & Frost, 2013). However, minority stress theory proposes that resilience factors, such as LGBTQ+ community connectedness and social support, can buffer against the negative effects of minority stressors on psychological well-being. This means that in theory, if the bisexual woman in the previous example felt that she was connected to the larger LGBTQ+ community, whether that was online or through local LGBTQ+ organizations and events, the stress she feels in concealing her bisexual identity from her coworkers should have a reduced effect on her mental well-being. Similarly, this stress should also have a reduced effect on the woman's mental well-being if she felt that she had adequate social support in the form of friends and family to turn to in times of need. Although social support has consistently been linked to reduced psychological distress among LGBTQ+ people (Budge et al., 2013; Keleher et al., 2010; Lehavot & Simoni, 2011; Pflum et al., 2015), the evidence concerning the minority stress buffering ability of social support and LGBTQ+ community connectedness is mixed (Bockting et al., 2013; Doty et al.,

2010; Kaniuka et al., 2019; Lee et al., 2021; Rimmer et al., 2021; Rogers et al., 2020; Trujillo et al., 2017). Therefore, while minority stress theory offers a useful framework for understanding LGBTQ+ mental health disparities, it remains unclear if social support and connection to the LGBTQ+ community are protective against minority stress for LGBTQ+ people. But what happens when opportunities for connection and support are entirely disrupted?

In 2020, the onset of the COVID-19 pandemic presented a mental health crisis, as well as a physical health crisis, as millions of people worldwide struggled to adapt to economic stressors, health stressors, and social isolation (Gobbi et al., 2020). For LGBTQ+ people, not only were they grappling with COVID-19-related stressors but minority stressors may have been exacerbated during the pandemic (Fish et al., 2020; Gonzalez et al., 2020; Kneale & Becares, 2020). LGBTQ+ people experienced high rates of mental distress throughout the pandemic (Suen et al., 2020; Veldhuis et al., 2021), in some cases higher than distress rates prior to the onset of COVID-19 (Flentje et al., 2020) and greater than rates experienced by their non-LGBTQ+ counterparts (Rodriguez-Seijas et al., 2020). The COVID-19 pandemic provides a unique opportunity to test minority stress and coping processes outlined in the minority stress model during a time when stressors may be exacerbated and buffers inaccessible for LGBTQ+ people. The current thesis aimed to directly test the influence of minority stressors on psychological distress and the ability of minority coping resources to moderate this relationship among LGBTQ+ people during the early period of the COVID-19 pandemic in North America.

Minority Stress Model and LGBTQ+ Mental Health

The minority stress model, first proposed by Brooks (1981) but extended upon by Meyer (2003) and Hendricks and Testa (2012), proposes that LGBTQ+ people experience unique stressors because of their minority status. Brooks' (1981) model outlined a systems sequence in

which lesbian women's inferior cultural status due to their non-heterosexual identity resulted in social and economic 'consequences' (i.e., discriminatory behaviours, restricted opportunities for employment), which in turn had psychological (i.e., threat to self-esteem and basic security) and biophysical effects (i.e., negative health outcomes). Brooks (1981) described minority stress as affecting all lesbian women but argued that within-group variation could be accounted for by an individual's access to stress-reducing resources, perception of stress, and level of stress exposure. Meyer's (1993; 1995; 2003) work popularized and extended the sexual minority stress model by expanding on specific minority stress and coping processes. Meyer (2003) argued that in addition to general stressors that all people experience, sexual minorities experience distal and proximal minority stressors that can have negative effects on their mental well-being. Distal minority stressors are external and include experiences such as prejudice events, discrimination, or rejection, while proximal stressors are internal and include experiences such as internalized homophobia, having to conceal one's sexual identity, and expectations of rejection. Meyer (2003; 2015) also outlines coping resources, such as LGBTQ+ community connectedness and social support, which are proposed to weaken the negative effects of minority stress on mental health. Hendricks and Testa (2012) and Testa et al. (2015) have extended Meyer's (2003) conceptualization of minority stress theory to apply to gender minorities (e.g., transgender and gender non-conforming individuals). Together, the work of Brooks (1981), Meyer (1993; 1995; 2003), and Hendricks and Testa (2012) outline the processes by which sexual and gender minorities experience stressors unique to their minority identity that contribute to poor mental health.

The minority stress model is a useful framework for understanding the mental health disparities between LGBTQ+ and non-LGBTQ+ individuals. Early research on LGBTQ+

individuals, primarily gay men, was conducted with the view that 'homosexuality' was a mental disorder and that same-sex oriented individuals were psychologically unwell (Ellis, 1968; Meyer, 1993; Socarides, 1970). Arguably, the most notable early LGBTQ+ affirming psychology study was the work of Evelyn Hooker (1957), who found gay men to be equally 'well-adjusted' as heterosexual men. Hooker's work (1957) contributed to the removal of 'homosexuality' from the Diagnostic and Statistical Manual of Disorders in 1973. Prior to the conceptualization of minority stress, most research examining sexual minority mental health disparities did not find differences in well-being between gay and heterosexual men. Meyer (1993) outlines how these may have been affected by selection bias, as participants were primarily recruited through LGBTQ+ community organizations and events, resulting in samples of gay men who were largely "out" and involved with the LGBTQ+ community and therefore, may not have experienced high rates of mental health problems.

Research since the emergence of the minority stress model has revealed differences in prevalence of mental illness and psychological distress between LGBTQ+ and non-LGBTQ+ people. Multiple meta-analyses and reviews have found that sexual minorities report higher prevalence of mental disorders, such as depression and anxiety, as well as suicidal thoughts and behaviour, compared to their heterosexual counterparts (Herek & Garnets, 2007; King et al., 2008; Plöderl & Tremblay, 2015; Ross et al., 2018). This is especially true for sexual minority youth, who are three times as likely as their heterosexual counterparts to report depression symptoms and/or disorders (Lucassen et al., 2017), and bisexual people, who report worse mental health outcomes than other sexual minorities (Chan et al., 2020; Ross et al., 2018). Research examining gender minority mental health disparities reveals that transgender and non-binary (TNB) individuals report more depression and anxiety than their non-TNB counterparts

(Millet et al., 2017; Reisner et al., 2015). These mental health disparities appeared to worsen during the COVID-19 pandemic, as LGBTQ+ people reported greater rates of mental health issues than cisgender and heterosexual people (Alonzi et al., 2020; Baumel et al., 2021; EGALE, 2020; Hawke et al., 2021; Hoyt et al., 2021; Mendes & Pereira, 2021; Moore et al., 2021; Rodriguez-Seijas et al., 2020; Sharma & Subramanyam, 2020) and greater rates than those reported by LGBTQ+ people prior to COVID-19 (Fish et al., 2021; Flentje et al., 2020; Linnemayr et al., 2020). Research comparing LGBTQ+ to non-LGBTQ+ individuals clearly illustrates that LGBTQ+ people are more vulnerable to mental illness and psychological distress than non-LGBTQ+ people, especially during the pandemic. However, as Meyer (1993) explains, comparing rates of psychological distress among LGBTQ+ and non-LGBTQ+ people is insufficient for demonstrating the impact of minority stress on LGBTQ+ well-being. Additionally, one must directly test the association between distal and proximal stressors and LGBTQ+ individuals' mental health.

Minority Stress Processes

Experiencing distal minority stressors, such as social rejection based upon one's LGBTQ+ identity, can negatively impact an LGBTQ+ individual's mental well-being. Upon coming out as LGBTQ+, some sexual and gender minority people experience rejection from others, primarily their family. Identity rejection can be blatant, such as family members disowning, condemning and/or abusing an LGBTQ+ person because of their identity, or it can be subtle, such as families denying, invalidating, or withdrawing support and love for their LGBTQ+ family member (Carastathis et al., 2017). Experiences of familial rejection of one's LGBTQ+ identity have been associated with psychological distress, such as anxiety, depression, and suicidal ideation, in some cases for years after coming out (Puckett et al., 2015; Ryan et al.,

2009). Identity rejection was an especially salient minority stressor during the COVID-19 pandemic, as some LGBTQ+ people were forced to live with family members who did not support their LGBTQ+ identity (Fish et al., 2020; Gonzales et al., 2020), which was associated with psychological distress during this time (Gattamorta et al., 2022). Therefore, identity rejection appears to be a notable measure of distal minority stress during the COVID-19 pandemic.

Proximal minority stressors, such as concealment of one's LGBTQ+ identity from other people, can also have negative effects on LGBTQ+ individuals' mental health. Coming out, or disclosing one's identity to others, is thought to be an essential part of healthy LGBTQ+ identity development (Cass, 1979), as it allows an LGBTQ+ person to connect to the LGBTQ+ community and reframe their 'disharmony' with societal norms (Meyer, 1993). Indeed, coming out is associated with positive psychosocial adjustment (Russell et al., 2014). Although there are some circumstances where concealing one's LGBTQ+ identity might be protective, such as living in a community where anti-LGBTQ+ stigma is prevalent (Pachankis & Branstrom, 2018), in most cases, concealment is associated with poorer mental health (Kosciw et al., 2015; Livingston et al., 2020). Similar to identity rejection, identity concealment was also an especially relevant minority stressor for LGBTQ+ people during the pandemic. Some LGBTQ+ individuals found themselves concealing their identity daily because they lived with people who did not know about their identity (Fish et al., 2020; Gato et al., 2021), and this concealment predicted psychological distress during the pandemic (Gattamorta et al., 2022). Therefore, identity concealment was an important measure of proximal minority stress during the pandemic and, together with identity rejection, may help explain mental health disparities between LGBTQ+ and non-LGBTQ+ people.

Minority Coping Processes

Having an LGBTQ+ identity may put one at risk of experiencing minority stressors, such as identity rejection and concealment, but the minority stress model proposes that there are minority coping resources, such as LGBTQ+ community connectedness and social support, that can buffer against the negative mental health impacts of minority stress. Meyer (1993) suggested that LGBTQ+ community connectedness, or the degree to which LGBTQ+ people feel as though they are a part of the larger LGBTQ+ community, allows sexual minorities to affirm their minority identity, counter internalized homophobia, and access social support. However, LGBTQ+ community connectedness is not the same as community participation (Frost & Meyer, 2012), which encompasses behavioural participation in community, nor is it the same as social support (Meyer, 2015), which includes the availability of social resources from one's social network (e.g., someone to turn to for emotional support; Cohen & Syme, 1985; Sarason et al.,1983). Although LGBTQ+ individuals' engagement in community events or interpersonal relationships with other LGBTQ+ people may be related to their connection to community, LGBTQ+ community connectedness consists of cognitive or affective components, such as ideological solidarity, which can be more difficult to measure (Frost & Meyer, 2012). Through socialization with the LGBTQ+ community, sexual and gender minorities can connect with people who understand their identity and are able to adopt cultural norms that do not place LGBTQ+ people in 'disharmony' with societal norms (Harper et al., 2012; Meyer, 1993). Through this reframing, LGBTQ+ community connectedness and its associated affirmation for LGBTQ+ people may buffer against the negative impacts of minority stressors, such as identity rejection or concealment.

LGBTQ+ Community Connectedness and Mental Health

Despite LGBTQ+ community connectedness being considered a main tenet of minority coping in the minority stress theory model, few studies have examined the ability of LGBTQ+ community connectedness to buffer the negative effects of minority stress. Although LGBTQ+ community connectedness is often associated with positive mental well-being (Frost & Meyer, 2012; Pflum et al., 2015; Stanton et al., 2017), most research has not tested stress buffering processes. Wheaton (1985) proposes that there are two primary causal models of stress buffering: the suppressor effect and the moderator effect. Research applying the suppressor effect model views LGBTQ+ community connectedness as a mediator, suggesting that a lack of community connection may be the mechanism through which minority stressors influence distress (McConnell et al., 2018; Puckett et al., 2015; Ribeiro-Gonçalves et al., 2019; Roberts & Christens, 2021; Scroggs & Vennum, 2020). Alternatively, LGBTQ+ community connection may buffer the impact of stress through a moderator effect (Wheaton, 1985), in which the negative effects of minority stress on mental health may be dampened by greater levels of LGBTQ+ community connectedness. Some studies using a moderator effect stress buffering model reveal that LGBTQ+ community connectedness reduces the negative impact of minority stressors on psychological well-being (Craney et al., 2018; Kaniuka et al., 2019; Lee et al., 2021). Together, suppressor and moderator models of stress buffering offer some evidence that LGBTQ+ people's connection to their community may serve as a protective factor against the negative mental health impacts of minority stressors.

Other research suggests that LGBTQ+ community connectedness is not a consistent predictor or protector of mental well-being and shows that in some cases, feeling connected to the LGBTQ+ community is associated with poor well-being. Being connected to or involved in

the LGBTQ+ community may play a role in negative mental health outcomes, such as substance use and body dissatisfaction among sexual minority people (Davids et al., 2015; Demant et al., 2018). Contrary to minority stress theory, one recent finding suggests that the association between minority stressors and suicidal ideation may be *stronger* for individuals reporting greater LGBTQ+ community connectedness (Rogers et al., 2020). One possible explanation for the finding of Rogers et al. (2020) is that LGBTQ+ people might more strongly experience minority stressors, such as discrimination, as a result of their strong connection to the LGBTQ+ community. Or, as Rogers et al. (2020) suggested, it could be that LGBTQ+ people experiencing distress because of minority stress may seek out connection to the LGBTQ+ community. However, other work suggests that connection to LGBTQ+ communities, specifically communities of gay men, may be a source of psychological stress due to an internal emphasis on status and competition (Pachankis et al., 2020). Even if not directly associated with negative outcomes, connection to the LGBTQ+ community may fail to intervene in the relationship between minority stressors and mental well-being: Riberio-Gonçalves et al. (2019) found community connectedness suppressed the effects of concealment on distress, but not the effects of internalised stigma or expectations of rejection. Thus, it is unclear what role LGBTQ+ community connectedness plays in the minority stress process, despite widespread acceptance of this construct as a minority coping resource.

Social Support and Mental Health

Social support is another minority coping resource proposed to ameliorate the effects of minority stress that is more widely studied. In the general population, social support is associated with mental well-being through a main effect pathway and a stress buffering pathway (Cohen, 2004; Kawachi & Berkman, 2001). Among LGBTQ+ people, social support is consistently

associated with fewer symptoms of depression and anxiety (Keleher et al., 2010; Lehavot & Simoni, 2011; Masini & Barrett, 2007; Pflum et al., 2015), greater life satisfaction (Beals et al., 2009), as well as reduced psychological distress (Budge et al., 2013) and suicidal ideation (Rimmer et al., 2021). Although the relationship between social support and psychological well-being is stronger than the association between LGBTQ+ community connectedness and well-being in some cases (Cooke & Melchert, 2019; Pflum et al., 2015), whether social support is a more effective buffer remains to be determined. When examining the detrimental effects of minority stress on mental health, some studies have found that social support intervenes as a suppressor (Ehlke et al., 2020; Lehavot & Simoni, 2011; Tabaac et al., 2015) or buffer (Bockting et al., 2013; Doty et al., 2010; Trujillo et al., 2017) but others have failed to find a mediation or moderation effect of social support (Button, 2015; Rimmer et al., 2021). It may be that social support is an effective buffer of the negative effects of more general stress on mental well-being, but not of the effects of stigma. A meta-analysis examining the relationship between perceived discrimination and psychological well-being among those with concealable minority identities determined that 77% of the reviewed studies found no moderating effect of social support and 17% found that social support exacerbated the relationship (Schmitt et al., 2014). Indeed, in at least one study of gender minorities, high levels of social support - specifically support from transgender friends - was found to exacerbate the association between discrimination and negative mental health (i.e., suicidal ideation; Carter et al., 2019). Therefore, despite social support consistently predicting mental well-being among LGBTQ+ people, it remains unclear if it is truly a *buffer* of minority stress.

Regardless, LGBTQ+ community connectedness and perceived social support, which rely on social connection to other individuals, were particularly discernible during the pandemic.

Social distancing mandates required most people in North America to stay at home and avoid in-person contact with anyone outside of their household, which in turn cut many LGBTQ+ people off from their community, family, and friends during the pandemic (Fish et al., 2020; Hoyt et al., 2021; Linnemayr et al., 2020; Rhodes et al., 2020; Salerno et al., 2020) and prevented them from accessing many sources of social support (Brennan et al., 2020). Few studies have examined associations between social support or LGBTQ+ community connectedness and psychological distress during the pandemic, but it appears that general social support may be a stronger predictor of distress (Gato et al., 2021; Suen et al., 2020). The COVID-19 pandemic therefore presented a noteworthy opportunity to test the influence of minority stressors, namely identity rejection and concealment, on psychological distress and the ability of minority coping resources, specifically LGBTQ+ community connectedness and social support, to buffer the effects of minority stress on distress.

Current Study

The current study sought to test minority stress and coping processes in a sample of LGBTQ+ adults during an especially stressful time (i.e., the first 6 months of the COVID-19 pandemic in North America) using cross-sectional and longitudinal data. By studying the processes of the minority stress model in the context of the COVID-19 pandemic, the present study seeks to contribute theoretical insights into the study of LGBTQ+ mental health and resilience. Specifically, the current study contributes to our knowledge of how minority stressors relate to psychological distress, and which minority coping resources may be more effective in protecting LGBTQ+ individuals' well-being from minority stress on a day-to-day basis. By employing a design with 25 separate time points, the present study also provides a more

comprehensive understanding of minority stress and coping processes than is achievable through primarily cross-sectional methods.

The experience of minority stressors has consistently been linked to poor mental health outcomes, such as depression and anxiety, among LGBTQ+ people. During the pandemic, LGBTQ+ identity rejection and concealment were prevalent sources of minority stress for LGBTQ+ people and were associated with psychological distress. To determine if this is the case in the present sample, we asked:

> RQ1: Do minority stressors, specifically identity rejection and concealment, explain variance in psychological distress among LGBTQ+ people during the COVID-19 pandemic?

The minority stress model suggests that minority coping resources, such as LGBTQ+ community connectedness and social support, can buffer the negative effects of minority stress on mental health outcomes. Past research has presented conflicting findings regarding the ability of LGBTQ+ community connectedness to serve as an effective coping resource. To shed light on the stress buffering ability of community connectedness, we asked:

> RQ2: Does LGBTQ+ community connectedness, a minority coping resource, moderate the relationship between minority stressors and psychological distress among LGBTQ+ people during the COVID-19 pandemic?

Another minority coping resource, social support, appears to predict well-being and buffer more consistently against the negative impacts of minority stress on mental health. Since access to social support was likely more challenging during the pandemic, we asked:

RQ3: Does social support, another minority coping resource, moderate the relationship between minority stressors and psychological distress among LGBTQ+ people during the COVID-19 pandemic?

Finally, given the inconsistencies in the literature regarding whether LGBTQ+ community connectedness is a protective factor against the impacts of minority stress, we compared the two moderation models to determine:

RQ4: Is LGBTQ+ community connectedness or social support a more effective minority coping resource in the context of the COVID-19 pandemic?

Method

Recruitment and Procedure

Participants for the proposed study were drawn from a larger sample of individuals who took part in a study by the KLB Research Lab examining interpersonal and social coping during the COVID-19 pandemic. The study was first launched in mid-March of 2020, which was when stay-at-home orders were first implemented in Canada, and data was collected until the end of August 2020. The study consisted of two parts: a 30-40 minute intake survey and a series of daily or weekly diary surveys. Participants who completed the intake survey could opt into completing shorter daily and/or weekly versions of the survey, which participants could complete over the subsequent 28 days. Recruitment for the interpersonal and social coping study took place between March and August of 2020 through social media posts and advertisements, email, recruitment websites (e.g., surveycircle.com), and partnering organisations (e.g., EGALE; see **Appendix A** for recruitment materials). Participants of past KLB Research studies who indicated that they would like to be contacted for future studies were contacted directly via email. Because of funding for the current study from the Nova Scotia government and Acadia

University, as well as the KLB Research Lab's research focus on LGBTQ+ experiences, specific emphasis was placed on recruiting participants who lived in Nova Scotia, attended Acadia University or StFX University, or identified as part of the LGBTQ+ community. The link to complete the survey online was included on all recruitment materials.

Using the study link, participants entered the intake survey and were directed to the informed consent document (**Appendix B**), which outlined the purpose, risks, and benefits of the study, as well as information about confidentiality, compensation, and participation. People recruited from StFX or Acadia University who consented to participate and were 16 years of age or older continued into the study. People not associated with a university who consented to participate and were 18 years of age or older continued into the study.

Since the data for the proposed study were collected as part of a larger body of research, participants completed a wide range of questionnaires. The intake survey asked participants about their demographics, experiences with COVID-19, participation and attitudes toward social distancing, coping behaviours during the pandemic, relationship and sexuality behaviours, as well as LGBTQ+ specific experiences. If participants opted into participating in daily or weekly surveys for the next 14 to 28 days, the daily and weekly surveys differed slightly from each other in length and asked participants questions about their day or week, such as social distancing behaviours, coping behaviours, experiences accessing COVID-19 information, and feelings of social connection. Participants could indicate that they wanted to opt out of the study after the intake survey or weekly surveys. Data from the intake survey was analysed separately from the daily surveys and responses from the weekly surveys were excluded from the present analyses due to differences in wording of instructions. Specifically, the intake surveys asked participants about their experiences in the past week or month, whereas the daily surveys asked participants

about their experiences on the day that they completed the survey. In the weekly surveys, some measures asked participants to report their experiences on the day they completed the survey, while others asked participants about their experiences in the past week.

Upon survey completion and indicating their desire to opt out of any additional daily or weekly diary surveys, participants were asked if they would like to provide their email to be contacted for future studies. Participants who completed the intake survey were entered into a prize draw for one of six $150 USD gift cards. Participants who went on to complete daily or weekly surveys were entered into the gift card draw once more for each survey they completed. All participants were then directed to a debriefing form that informed them of the purpose of the study and potentially relevant support materials, such as coping and mental health resources (see **Appendix C**).

Participants

Study participants were drawn from the larger sample of individuals who took part in the interpersonal and social coping during the COVID-19 pandemic study. Participants who reported having an LGBTQ+ identity and had sufficient data on the measures of interest - namely identity concealment, identity rejection, social support, LGBTQ+ community connectedness, and psychological distress - were included in the current analyses. There were 451 participants included in the intake analyses and 318 participants included in the daily analyses. Demographic information for the intake and daily participants is displayed in Table 1.

Table 1

Sample Demographics for Intake and Daily Analyses

Variables	Intake	Daily

	N=451	*N*=318
Age	32.3 (13.7)	33.5 (13.4)
Income Level	2.8 (1.2)	2.8 (1.2)
Race/Ethnicity		
Asian	3.8	4.1
Black/African/Caribbean	0.7	0.9
Indigenous/Aboriginal	1.6	0.9
Latin American	1.8	1.9
Middle Eastern	0.9	0.9
Mixed/Multiple Ethnic Groups	6.9	6.0
White	84.5	85.2
Not Listed	0	0
Transgender and/or Nonbinary	35.6	35.6
Gender Identity		
Man	23.1	21.4
Woman	51.0	51.9
Nonbinary	14.4	14.8

Agender	1.8	0.6
Genderqueer/Genderfluid	7.1	8.5
Not Listed	2.7	2.8
Sexual Identity		
Straight/Heterosexual	1.8	2.2
Gay/Lesbian	34.6	33.3
Bisexual	26.4	27.7
Queer/Pansexual	29.9	27.7
Asexual	6.7	8.2
Prefer Not to Respond	0.2	0.6
None of the Above	0.4	0.3
Country		
Canada	92.5	91.5
United States	6.0	7.2
United Kingdom	0.4	0.6
Other	1.1	0.7

Note. For continuous variables, numbers shown represent Mean (Standard Deviation). For categorical variables, numbers shown represent percentages within the column category. Percentages do not always add to 100% due to rounding.

Measures

Demographics

Participants were asked to provide demographic information, such as age, gender, sexual orientation, race/ethnicity, and socioeconomic status (see **Appendix D**).

LGBTQ+ Identity Concealment

At intake, LGBTQ+ participants were asked to rate how 'out' they were about their sexual and gender identity to the people they were living with. Responses were indicated on a 10-point scale ranging from "Not at all out" (0) to "Completely out" (10). In the daily surveys, LGBTQ+ participants were first asked, "Did you have to hide or deny any part of your sexual or gender identity today?" to which they could answer "yes" or "no." In order to ease interpretation of results and keep identity concealment scores consistent in direction with identity rejection scores, the intake scores were reverse coded so that higher scores indicated greater concealment. Intake, weekly, and daily measures of LGBTQ+ identity concealment are displayed in **Appendix E**.

Rejection of LGBTQ+ Identity

At intake, LGBTQ+ participants were asked to rate how supportive the people they were living with were of their sexual and gender identity (see **Appendix F**). Responses were rated on a 7-point scale ranging from "Very supportive" (1) to "Very unsupportive" (7). Higher scores on this item indicates greater rejection of participants' LGBTQ+ identity from the people with whom they live. Participants were only asked about rejection of their LGBTQ+ identity from the people that they live with during the intake survey.

LGBTQ+ Community Connectedness

To measure LGBTQ+ participants' feelings of connectedness to the LGBTQ+ community we used an adapted version of Frost and Meyer's (2012) Connectedness to the LGBT

Community Scale (see **Appendix G**). The scale was adapted for the current study to ask participants about the general LGBTQ+ community, rather than the specific LGBT community of New York City as was the case for the original scale. One item, "If we work together, gay, bisexual, and lesbian people can solve problems in NYC's LGBT community," was removed as the current study was not focused on LGBTQ+ individuals from a specific geographic community. Additionally, the final item in the scale that measures participants' experience of a bond with other LGBTQ+ community members of the same gender or identity was adapted to simply state, "I feel a bond with other members of the LGBTQ+ community." Participants were asked to rate their agreement with 7 statements regarding their feelings of connection to the LGBTQ+ community, such as, "I feel a bond with the LGBTQ+ community," on a 7-point scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (7). Mean scores of each participant's responses to the scale were calculated, with higher scores indicating greater feelings of connectedness to the LGBTQ+ community. LGBTQ+ participants completed the full scale in the intake and daily surveys. The Connectedness to the LGBT Community Scale has been found to demonstrate adequate construct, convergent, and discriminant validity, as well as reliability (α = .81 - .91; Balsam et al., 2015; Frost & Meyer, 2012; McConnell et al., 2018).

Perceived Social Support

Participants were asked to complete a modified short-form of the Social Provisions Scale (Cutrona & Russell, 1987; MacKinnon, 2012; see **Appendix H**) in order to determine their levels of perceived social support. This scale consists of 6 items, such as, "If something went wrong, nobody would help me," and "There is someone I trust whom I would turn to for advice if I were having problems." Participants were asked to indicate their level of agreement with each statement on a 4-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (4). Mean

scores for the scale were calculated, with higher scores indicating greater perceived social support. Participants completed the full perceived social support scale at intake and a partial 4 item version of the scale in the daily surveys (see **Appendix H**). The Social Provisions Scale has been found to exhibit adequate validity and reliability (α = .91; Cutrona & Russell, 1987; Gottlieb & Bergen, 2010).

Table 2

Cronbach's Alpha for Each Measure Used in the Intake and Daily Analyses

Measures (Number of Items in Intake; Number of Items in Daily)	Intake α	Range of Daily α
Connectedness to the LGBTQ+ Community Scale (7;7)	.84	.90 - .95
Short Form Social Provisions Scale (6;4)	.87	.83 - .96
Depression, Anxiety, and Stress Scale (21; 9)	.93	.86 - .93

Depression, Anxiety, and Stress

To measure psychological distress, participants were asked to complete the 21-item shortened version of the Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995; see **Appendix I**). The DASS-21 consists of three subscales of 7 items measuring depression, anxiety, and stress. Items include statements such as, "I felt that I had nothing to look forward to," "I felt that I was close to panic," and "I found it difficult to relax." At intake, participants were asked to rate how much each of the items applied to them in the past month on a 4-point scale ranging from "Did not apply to me at all" (0) to "Applied to me very much or most of the time" (3). In the daily surveys, participants were asked to complete a

shortened version of the scale that included 6 of the items from the intake scale and three items from the full DASS scale (see **Appendix I**). The DASS-21 has been found to be a valid and reliable measure of depression, anxiety, stress, and general psychological distress ($\alpha = .93$; Henry & Crawford, 2005; Lovibond & Lovibond, 1995).

All measures exhibited acceptable reliability as shown by the Cronbach's alpha coefficients displayed in Table 2.

Results

Analysis Strategy

All statistical analyses were conducted using the statistical computing software program R (R Core Team, 2021). Two sets of analyses were conducted that tested the same three theoretical models using two datasets; one set using data collected from the intake survey (one time point) and one set using data gathered from the daily surveys (excluding the weekly surveys; 24 time points). Participants were excluded from the current analyses if they did not have sufficient data on the variables of interest, leaving us with 451 participants in the intake analyses (1 of whom was missing a LGBTQ+ community connectedness score) and 318 participants in the daily analyses (2 of whom were missing LGBTQ+ community connectedness scores). All continuous predictors were mean centred to ease interpretation of results; continuous predictors measured at intake were grand mean centred and those measured at the daily level were group mean centred (i.e., each person's scores were centred around that person's mean score). While the intake analyses implemented multiple linear regression, the daily analyses used multilevel modelling.

Multilevel modelling can be thought of as an extension of linear regression to hierarchical longitudinal data, such as data where participants complete daily measures (Singer

& Willett, 2003). By allowing daily responses to be nested within participants, multilevel modelling accounts for the fact that a response from one participant will be more similar to other responses from that participant than to responses from other participants. In multilevel modelling, predictor variables can be at level one, wherein they vary within-subjects, or at level two, wherein they vary between-subjects. In the daily data, identity concealment, LGBTQ+ community connectedness, and social support were level one predictors, meaning their values for each participant varied from day to day, since daily observations were nested within participants. Age, income level, ethnicity, and identity rejection were level two predictors, meaning their values only varied between participants, since these values remained constant from day to day for each participant.

Multilevel models also allow for the inclusion of random intercepts and/or slopes (Field, 2013). In a model with random intercepts, the intercepts among participants are allowed to vary, therefore allowing each participant to "start off" at different levels of psychological distress. In a model with random slopes, the slopes among participants for specified predictors are allowed to vary, meaning that participants are allowed to have different relationships between a given predictor and psychological distress. For example, a model with random slopes for identity concealment would allow the association between identity concealment and distress to vary from participant to participant. The nature of these random effects are not of core interest in the current analyses, but including random effects assists in making the models as realistic as possible, because LGBTQ+ people in the real world will vary in their 'base level' of psychological distress, and in how minority stress and coping resources impact this distress.

The multilevel models conducted in the current analyses employed the maximum likelihood estimation method, meaning that the resulting parameter estimates maximize the

probability of observing the data collected (Singer & Willett, 2003). To do this, the statistical program used for analysis engages in successive iteration of parameter estimates to find those that maximise the likelihood of observing the current data. When the difference between successive estimates is insignificant, the model converges; however, it is possible that the model does not converge, in which case the specified model may need to be simplified.

Although the present study employed a longitudinal design, change in psychological distress over time was not a main variable of interest. While it is possible that participants' distress changed over time during the pandemic, participants began the study at various times between March and August 2020 and the nature of the pandemic shifted unpredictably during that time. Therefore, psychological distress was not expected to change systematically over time in the present study and time, specifically the week each participant completed the intake survey, was entered as a 'control' variable. By controlling for the effects of time and participant on the observations in the current dataset, the daily analyses can instead be thought of as an opportunity to test the minority stress model at 24 different time points.

Intake Analyses

Three multiple regressions were performed to examine the relationship between minority stressors and psychological distress, as well as the moderating ability of minority coping resources at the intake level (see Table 3). The first regression tested the relationship between the minority stressors and psychological distress by including the covariates of age, income level and ethnicity, as well as identity rejection, identity concealment, and the interaction between these two terms as predictors of psychological distress. This first model was statistically significant ($F(6, 444) = 21.15$, $p < .001$) and accounted for 22.2% of the variance in DASS scores among LGBTQ+ participants. Age and level of income were negatively associated with psychological

distress, meaning that participants who were older or reported a higher level of income also reported less psychological distress. Although identity rejection significantly predicted psychological distress, identity concealment did not - indicating that living with people who rejected one's LGBTQ+ identity was associated with experiencing greater psychological distress at intake, but having to hide one's LGBTQ+ identity from these individuals was not related to distress.

Table 3

Results of Multiple Linear Regression Models Conducted on Intake Data Predicting Psychological Distress from Identity Rejection and Identity Concealment, Moderated by LGBTQ+ Community Connectedness (Model 2) and Perceived Social Support (Model 3)

	Depression, Anxiety and Stress					
Variable	Model 1 N = 451		Model 2 N = 450		Model 3 N = 451	
	B	SE	B	SE	B	SE
Age	**-.012**	**.002**	**-.012**	**.002**	**-.013**	**.002**
Income	**-.085**	**.022**	**-.087**	**.022**	**-.058**	**.021**
Ethnicity	.039	.071	.036	.071	.044	.067
ID Rej	**.087**	**.018**	**.087**	**.018**	**.054**	**.019**
ID Con	-.003	.010	-.002	.010	-.001	.010

ID Rej X ID Con	**-.010**	**.004**	**-.011**	**.004**	-.008	.004
LGBTQ+ CC	--	--	.024	.027	--	--
LGBTQ+ CC X ID Rej	--	--	-.006	.017	--	--
LGBTQ+ CC X ID Con	--	--	.006	.008	--	--
LGBTQ+ CC X ID Rej X ID Con	--	--	.0002	.004	--	--
PSS	--	--	--	--	**-.339**	**.051**
PSS X ID Rej	--	--	--	--	.024	.026
PSS X ID Con	--	--	--	--	.004	.016
PSS X ID Rej X ID Con	--	--	--	--	.001	.007

R^2	.222	.226	.309
F	21.15**	12.79**	19.68**

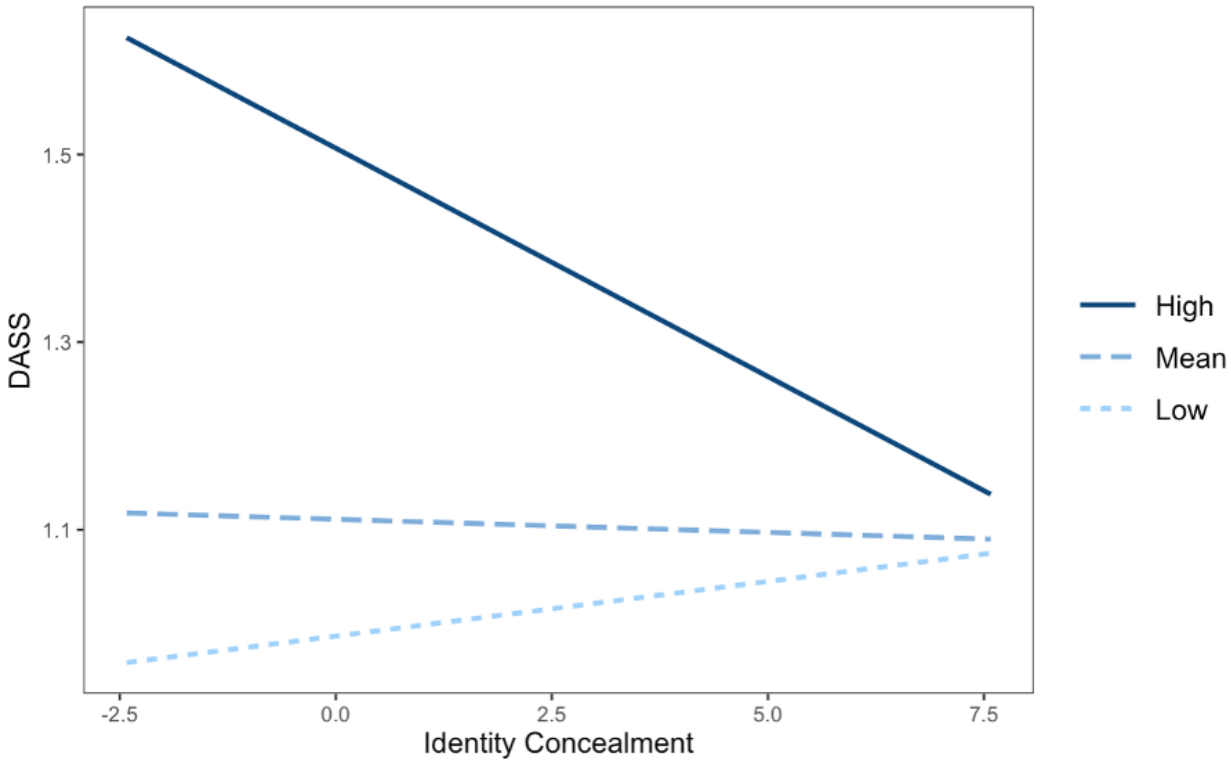
Note. ID Rej = Identity rejection; ID Con = Identity concealment; LGBTQ+ CC = LGBTQ+ community connectedness; PSS = Perceived social support. Effects in bold are significant at $p<.05$. ** $p < .001$

However, there was a significant interaction between identity rejection and concealment. A simple slopes analysis was conducted, examining the relationship between identity concealment and psychological distress at low (1), mean (2.44), and high (7) levels of identity rejection. The simple slopes (see Figure 1 and Table 4) revealed that engaging in more identity concealment was associated with *lower* DASS scores, but only for those who reported high levels of identity rejection. In other words, while having to hide one's LGBTQ+ identity was not associated with distress for LGBTQ+ people experiencing average or low levels of identity rejection, concealment may have actually been protective for LGBTQ+ individuals facing high levels of rejection.

The second regression examined the ability of LGBTQ+ community connectedness to moderate the association between minority stress and psychological distress. The control variables, identity rejection, identity concealment, identity rejection x identity concealment, LGBTQ+ community connectedness, and all possible interactions between community connectedness and the stressor variables were included as predictors of psychological distress. The second model was statistically significant (F (10, 439) = 12.79, $p < .001$) and explained 22.6% of the variance in DASS scores.

Figure 1

Simple Slopes between Identity Concealment and Depression, Anxiety and Stress at Low, Mean, and High Levels of Identity Rejection in Intake Analysis



Similar to the first regression model, older age and greater income level predicted less psychological distress, while more identity rejection was associated with greater psychological distress. The interaction between identity rejection and concealment remained significant and the nature of the interaction was the same, with identity concealment predicting lower levels of psychological distress, only in LGBTQ+ individuals experiencing high levels of identity rejection. Contrary to the MSM, LGBTQ+ community connectedness was not significantly associated with psychological distress and none of the interaction terms including community connectedness reached significance. Therefore, connection to the LGBTQ+ community did not moderate the relationship between minority stress and psychological distress in this sample.

Table 4

Simple Slopes of Regression Line Predicting Psychological Distress from Identity Concealment for Low, Mean, and High Levels of Identity Rejection in Intake Data

	b	SE	*t*	*p*
Level of Identity Rejection				
Low (1)	.01	.01	.92	.36
Mean (2.44)	-.00	.01	-.29	.77
High (7)	**-.05**	**.02**	**-2.61**	**.01**

Note: Effects in bold are significant at $p<.05$.

The third and final regression model investigated the potential of social support to moderate the association between minority stress and psychological distress. Age, income level, ethnicity, identity rejection, identity concealment, the interaction term between identity rejection and identity concealment, as well as social support and all interaction terms between social support and the minority stressors were included as predictors of DASS scores. The third model accounted for 30.9% of the variance in psychological distress and was statistically significant ($F(10, 440) = 19.68$, $p < .001$). Similar to the past two models, older age and greater income level were associated with less distress and more identity rejection predicted greater levels of psychological distress. The interaction term between identity rejection and concealment was no longer significant in model three. Although having more social support was associated with less psychological distress, none of the interaction terms including social support were significant,

indicating that social support was not a moderator of the relationship between minority stress and distress.

Daily Analyses

First, an empty model predicting daily DASS scores from each participant's intercept, or baseline, of DASS was performed for the purposes of calculating the intraclass correlation coefficient (ICC). The ICC can range from 0, in which case all variability in DASS scores can be found at the within-subjects level, to 1, in which case all variability in DASS scores is at the between-subjects level (Sommet & Morselli, 2017). The ICC of the present data was .703, meaning that although there is variability at both levels, more of the variability in DASS scores can be attributed to differences between participants rather than daily fluctuations within participants. Such a coefficient indicates that clustering observations within participants, acknowledging that multiple DASS scores from the same participant are correlated, is the appropriate analytic approach. Therefore, multilevel modelling was deemed a valid statistical analysis for the current data.

Following the empty model, three final multilevel models were retained and interpreted in the present study, the results of which are presented in Table 5. The first multilevel model can be thought of as the 'base model'. It examined whether minority stressors were associated with psychological distress at the 24 time points in the daily data. Control variables of age, income level, ethnicity, and intake week were entered, alongside rejection of LGBTQ+ identity, LGBTQ+ identity concealment, and an interaction term of rejection and concealment as predictors of DASS scores. First, the model was run including only random intercepts and then random slopes for identity concealment were included in a subsequent model. The model including random slopes converged with a significantly lower chi-square value (4334.2) than the

model without the random slopes (4343.8; $\Delta\chi^2(2) = 9.6$, $p < .05$), indicating that this model fit the data better. Therefore, as recommended by Sommet and Morselli (2017), the random slopes model was retained and interpreted.

Table 5

Results of Multilevel Models Performed on Daily Data Predicting Psychological Distress from Identity Rejection and Identity Concealment, Moderated by LGBTQ+ Community Connectedness (Model 2) and Perceived Social Support (Model 3)

	Depression, Anxiety and Stress					
Variable	Model 1 N = 318		Model 2 N = 316		Model 3 N = 318	
	b (SE)	*p*	b (SE)	*p*	b (SE)	*p*
Age	**-.009 (.002)**	**< .001**	**-.009 (.002)**	**.001**	**-.008 (.002)**	**< .001**
Income	**-.087 (.024)**	**< .001**	**-.077 (.024)**	**.002**	**-.078 (.023)**	**< .001**
Ethnicity	.011 (.080)	.887	-.008 (.079)	.922	.023 (.076)	.760
ID Rej	**.044 (.017)**	**.008**	**.047 (.017)**	**.005**	**.051 (.017)**	**.003**
ID Con	**.183 (.058)**	**.002**	**.178 (.056)**	**.002**	**.150 (.056)**	**.009**

LGBTQ+ CC	--	--	**-.180 (.031)**	**< .001**	--	--
PSS	--	--	--	--	**-.437 (.039)**	**< .001**
ID Rej X ID Con	**-.056 (.023)**	**.020**	**-.055 (.023)**	**.020**	**-.054 (.023)**	**.021**
LGBTQ+ CC X ID Rej	--	--	.022 (.018)	.204	--	--
LGBTQ+ CC X ID Con	--	--	.083 (.100)	.409	--	--
PSS X ID Rej	--	--	--	--	.030 (.021)	.146
PSS X ID Con	--	--	--	--	-.164 (.121)	.177
Variance of Random Intercepts	.198		.199		.204	
Variance of ID Con Random Slopes	.060		.048		.061	

Variance of LGBTQ+ CC Random Slopes	--	.053	--
Variance of PSS Random Slopes	--	--	.079

Note. ID Rej = Identity rejection; ID Con = Identity concealment; LGBTQ+ CC = LGBTQ+ community connectedness; PSS = Perceived social support. Effects in bold are significant at $p<.05$.

Age and income were significantly negatively associated with psychological distress, once again indicating that participants who were older and had higher levels of income experienced less distress. Identity rejection and concealment were also significant predictors of psychological distress; specifically, on days that participants experienced more rejection and/or had to conceal their identities, they also experienced greater distress. There was a significant interaction between rejection and concealment. Simple slopes analysis revealed that at low (1) and average (2.48) levels of identity rejection, the association between identity concealment and distress was significant, but not at high (7) levels of rejection (see Table 6). As can be seen in Figure 2, for those experiencing low and average levels of identity rejection, having to conceal one's LGBTQ+ identity was associated with higher levels of psychological distress. However, this relationship did not exist for participants who reported high levels of identity rejection, suggesting that concealing one's identity had a greater effect on psychological distress for people who do not experience high levels of identity rejection. The nature of the interaction between concealment and rejection in the daily analyses differs from the nature of this interaction in the intake analyses, in which there was no association between concealment and distress for

LGBTQ+ people experiencing low or average levels of identity rejection. Together, the results of the minority stress process model suggest that the experience of minority stressors is significantly associated with psychological distress in the present sample.

Table 6

Simple Slopes of Regression Line Predicting Psychological Distress from Identity Concealment for Low, Mean, and High Levels of Identity Rejection in Daily Data

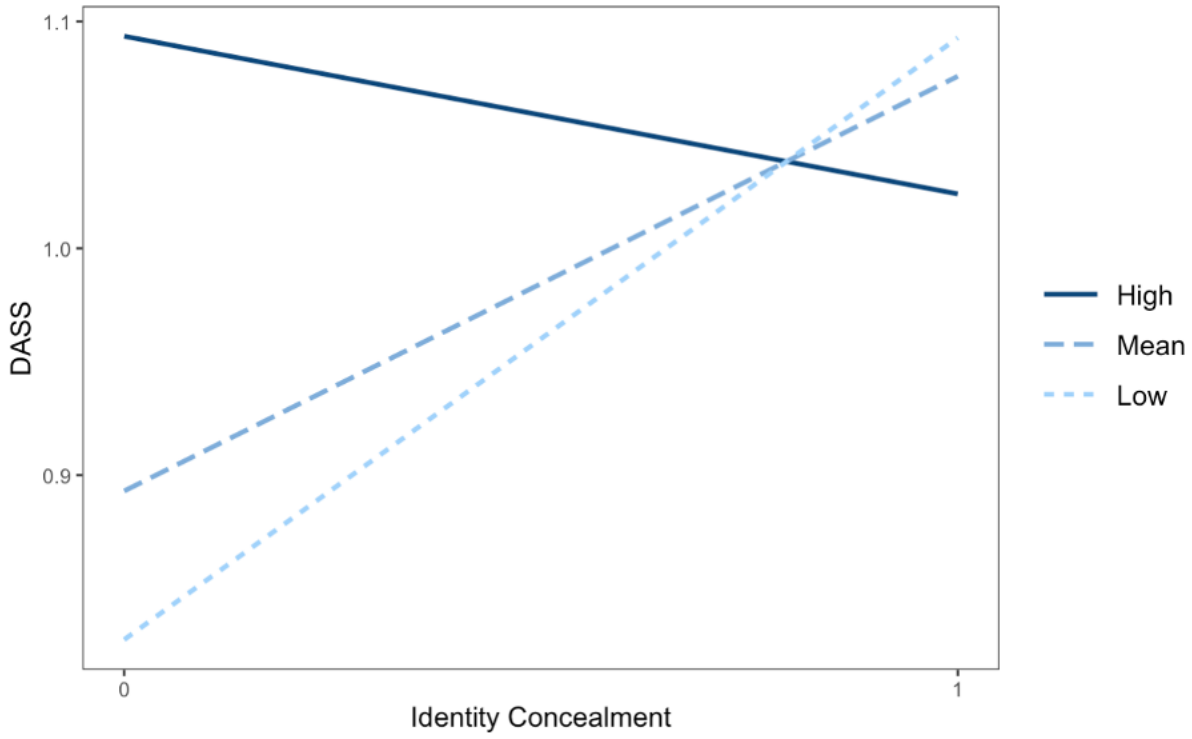
	b	SE	*t*	*p*
Level of Identity Rejection				
Low (1)	**.27**	**.08**	**3.28**	**< .001**
Mean (2.48)	**.18**	**.06**	**3.15**	**< .001**
High (7)	-.07	.09	-.74	.46

Note: Effects in bold are significant at $p<.05$.

The second model sought to determine if LGBTQ+ community connectedness, a proposed minority coping resource, moderated the association between minority stress and psychological distress. To do so, all of the predictors included in the minority stress process model were entered alongside LGBTQ+ community connectedness and its interaction terms with identity rejection and identity concealment. First, a model containing all predictors, random intercepts, and the random slopes of identity concealment was run and compared to a subsequent model in which random slopes for LGBTQ+ community connectedness were added.

Figure 2

Simple Slopes between Identity Concealment and Depression, Anxiety and Stress at Low, Mean, and High Levels of Identity Rejection in Daily Analysis



The model including random slopes for concealment and connectedness had a significantly lower chi-square value (4141.8) than the model without the community connectedness random slopes (4180.2; $\Delta\chi^2(2) = 38.4$, $p < .001$), indicating a better fit, and was therefore retained. Again, older age and higher income level predicted less distress, and greater identity rejection and concealment predicted more distress. The interaction between concealment and rejection remained significant and of the same nature. Interestingly, although feeling more connected to the LGBTQ+ community was associated with less psychological distress overall, neither of the interactions including community connectedness were significant. Therefore, although being connected to the LGBTQ+ community was related to lower psychological

distress on its own, community connectedness does not appear to be a moderator of the association between minority stressors and distress in the current study.

The third model examined the ability of social support, another minority coping resource, to moderate the relationship between minority stress and psychological distress. All of the predictors entered in the minority stress process model were included in the third model, as well as social support and the terms describing the interactions between social support and each minority stressor. An initial model with all of the predictors, random intercepts, and the random slopes for identity concealment was run and then compared to the same model but with random slopes for social support included. The model with random slopes for social support exhibited a significantly lower chi-square value (4045.4) than the model without the social support random slopes (4103.4; $\Delta\chi^2(3) = 58$, $p < .001$), and therefore was retained for interpretation. Again, participants who were older and had greater levels of income reported less distress, while those who experienced more identity rejection and concealment exhibited greater levels of psychological distress. The interaction between identity rejection and concealment remained significant and of the same nature, with more concealment predicting more distress for those experiencing low and average levels of rejection. Similar to the findings regarding LGBTQ+ community connectedness, experiencing more social support was related to lower levels of psychological distress overall; however, none of the interactions including social support were significant. Therefore, although more social support was associated with less psychological distress when considered on its own, social support did not moderate the relationship between minority stress and psychological distress in the current study.

Discussion

The Minority Stress Model (Hendricks & Testa, 2012; Meyer, 2003) proposes that LGBTQ+ people experience minority stressors unique to their identity which negatively impact their mental health; however, the model also suggests that minority coping resources can be used to reduce this negative impact. In the current study, LGBTQ+ people who experienced more minority stress endured greater psychological distress; however, minority coping resources failed to act as minority stress buffers. Although LGBTQ+ people experiencing rejection for their identity consistently experienced greater distress, the relationship between hiding one's LGBTQ+ identity and well-being was more complicated. Specifically, for LGBTQ+ people facing high levels of rejection from the people with whom they lived, *hiding* their identity was related to less psychological distress and therefore, may have been protective. In contrast, for LGBTQ+ people facing low levels of rejection, having to hide their identity on a given day was especially distressing. Although less psychological distress was experienced by LGBTQ+ people who felt more connected to the LGBTQ+ community or felt they had more social support, the relationship between minority stress and psychological distress remained the same for these individuals and therefore, was not buffered by minority coping resources. The present study partially supports the hypotheses of the Minority Stress Model, but also highlights the complicated nature of vulnerability and resilience in LGBTQ+ populations and supports the notion that more complex models are needed to understand the myriad factors that predict LGBTQ+ mental health.

Identity Rejection and Concealment

The experiences of LGBTQ+ people in the present study reinforce past findings that minority stressors are associated with psychological distress among sexual and gender

minorities. Specifically, LGBTQ+ people who faced rejection for their identity from the people with whom they lived during the pandemic reported experiencing more psychological distress at intake and on a day-to-day basis. This finding is consistent with past literature linking identity rejection to psychological distress before (Puckett et al., 2015) and after (Gattamorta et al., 2022) the onset of the COVID-19 pandemic.

Surprisingly, whether LGBTQ+ people who engaged in more identity concealment suffered greater psychological distress was dependent on how much rejection they faced for their identity from the people with whom they lived. Identity concealment alone was not a significant predictor of psychological distress at intake; however, an interaction effect revealed that for LGBTQ+ participants who faced high levels of identity rejection, engaging in concealment predicted *lower* psychological distress. It appears that for LGBTQ+ participants living with people who reject their LGBTQ+ identity, hiding their identity may protect them from experiencing more psychological distress. As suggested by Carastathis et al. (2017), it may be that LGBTQ+ participants who faced greater rejection at home employed strategic concealment of their identity to cope with the rejection and circumvent further negative reactions from the people with whom they lived. Indeed, Diamond and Alley (2022) suggest that identity concealment can be thought of as a "safety maintenance strategy," which may provide LGBTQ+ people short-term feelings of social safety (i.e., reliable social connection and inclusion) but could have negative consequences for mental well-being in the long term. Recent research suggests that LGBTQ+ youth who experienced family rejection since the start of the pandemic were more likely to conceal their LGBTQ+ identity (Gattamorta et al., 2022), further indicating that experiencing rejection for one's identity may motivate LGBTQ+ people to engage in concealment. These studies are corroborated by the findings of the current analysis, suggesting

that when faced with rejection for their identities, LGBTQ+ people may actually use concealment as a coping resource to protect their mental health.

In the present study, day-to-day experiences of identity concealment were associated with greater psychological distress. This finding was consistent with past research (Kosciw et al., 2015; Livingston et al., 2020), and similar to the findings from the intake analyses, such that the relationship between concealment and distress was dependent on experiences of rejection. Specifically, LGBTQ+ people who faced low or average levels of rejection experienced greater distress than those who endured more rejection. The association between identity concealment and distress was non-existent for those experiencing high levels of rejection in the daily analyses.

The divergent ways that identity rejection was associated with LGBTQ+ people's experiences of identity concealment and psychological distress in the intake (see Figure 1) and daily (see Figure 2) analyses could be a result of the different ways concealment was measured. Specifically, the intake survey asked participants for a general rating of how 'out' they were to the people with whom they lived at that time, but the daily analyses asked participants whether they had to hide or deny any part of their LGBTQ+ identity *on that particular day*. Therefore, the daily analyses may have captured the relationship between engaging in identity concealment and distress in LGBTQ+ people who generally do not conceal their identity, something that cross-sectional research cannot capture. It could be that for these participants, when they are in a position where they feel they must hide their LGBTQ+ identity, it is more distressing in that moment than for participants who chronically face high levels of rejection. For example, if a participant had spent the pandemic living with their same-sex partner and keeping in contact with friends who know and support the participant's LGBTQ+ identity, but then had to conceal their identity while video calling a parent, this short-term concealment may feel especially distressing.

However, if another participant was living with parents who were transphobic and the participant was hiding their non-binary identity throughout most of the pandemic, having to conceal their identity yet again on a specific day may not be as distressing, relative to their own average level of distress.

Other longitudinal examinations of concealment and well-being support this interpretation. For example, a two week long diary study found that lesbian women and gay men who were more likely to disclose their identity reported more positive mental health outcomes on the days when they told others about their identity (Beals et al., 2009). A more recent study showed that concealment only predicted negative well-being when LGBTQ+ participants perceived their family to be LGBTQ+ friendly (Huang & Chan, 2022). The authors proposed that when participants received acceptance for their identity, having to hide their identity felt less necessary or adaptive, and instead, more distressing. Indeed, it could be that when hiding one's LGBTQ+ identity is no longer a "safety maintenance strategy" that it no longer provides any feelings of social safety and instead becomes a stressor (Diamond & Alley, 2022). By implementing longitudinal analyses, minority stress research has the ability to examine these day-to-day experiences and tease apart how momentary, rather than chronic, identity concealment relates to psychological distress among LGBTQ+ people.

LGBTQ+ Community Connectedness

Consistent with the Minority Stress Model, LGBTQ+ participants who had access to minority coping resources experienced less psychological distress than those who did not. The daily analyses found perceived social support and LGBTQ+ community connectedness predicted less distress among LGBTQ+ people; however, only social support was associated with fewer symptoms of distress at intake. This finding at intake is consistent with literature suggesting that

perceived social support is more consistently related to positive mental well-being than feeling connected to the LGBTQ+ community (Cooke & Melchert, 2019; Pflum et al., 2015). It is surprising that while feeling connected to the LGBTQ+ community was not related to psychological distress at intake, it predicted less distress in the daily analyses.

Although research often treats them as such, LGBTQ+ people are not a homogenous group and the different relationships between community connectedness and distress in the intake versus daily analyses may be due to how various groups within the LGBTQ+ population experience community connection differently. While feeling connected may be positive for some and predict less distress (Pflum et al., 2020), being connected to the LGBTQ+ community may predict more distress or even be a source of stress (Pachankis et al., 2020) for others. Therefore, these opposing associations between LGBTQ+ community connectedness and psychological distress may have resulted in a lack of association between these variables in the intake analyses. In contrast, the association between community connection and distress in the daily analyses may be the result of LGBTQ+ individuals' *motivation* to seek out connection to the LGBTQ+ community. Specifically, LGBTQ+ people for whom connection to the community is associated with less distress may seek out this connection daily; however, when connection to the community is associated with more distress, LGBTQ+ people may avoid or not seek out this connection daily.

It is possible that the difference in findings from intake to daily analyses could be attributable to selection bias; it could be that the participants who completed the intake and continued onto daily surveys experienced a stronger relationship between increased LGBTQ+ community connectedness and decreased distress than those who did not. For example, participants who did not feel particularly connected to the community or for whom connection to

LGBTQ+ community is related to more distress (Pachankis et al., 2020) may have been less likely to participate in a longitudinal study conducted by an LGBTQ+ research lab examining LGBTQ+ experiences of the COVID-19 pandemic. In contrast, participants who are strongly connected to the community or for whom this connection is related to positive mental health outcomes may be more likely to continue to participate because of that connection. Although it is unclear what accounts for the discrepancy between the intake and daily findings regarding LGBTQ+ community connectedness, our findings suggest that the association between LGBTQ+ community connection and psychological distress varies across LGBTQ+ people and may function differently in the long term versus short term. Therefore, to further understand the relationship between LGBTQ+ community connectedness and well-being, more research examining this relationship and how it varies across groups and time is necessary.

Buffering Abilities of LGBTQ+ Community Connectedness

The experiences of LGBTQ+ participants in the present study provide partial support for minority stress and coping processes outlined by the minority stress model, specifically that LGBTQ+ people who experienced greater identity rejection and concealment suffered greater psychological distress, while those who felt more social support and LGBTQ+ community connectedness reported less distress. Contrary to the Minority Stress Model, minority coping resources did not serve as a minority stress buffer for the LGBTQ+ people in the current study. Although social support and connectedness to the LGBTQ+ community were associated with less distress overall, the relationship between minority stress and psychological distress remained the same regardless of participants' experience of social support or community connectedness.

Whether feeling connected to the LGBTQ+ community buffers against minority stress among LGBTQ+ people is unclear; feeling connected to the community has attenuated the

relationship between minority stress and mental health in some studies (Craney et al., 2018; Kaniuka et al., 2019; Lee et al., 2021), but has intensified the relationship in others (Rogers et al., 2020). A recent study mirrors the findings of the present study, finding that feeling connected to the LGBTQ+ community predicted less psychological distress overall, but did not appear to buffer against the influence of minority stress on distress (Frost et al., 2022). Interestingly, this study also examined the effects of minority stress and community connectedness by age cohort and found that while high community connectedness predicted less distress for the older age cohorts (34-41 years old and 52-59 years old), psychological distress remained stable across levels of community connectedness among the younger cohort (18-25 years old). It is possible that something similar is happening in the current analyses, wherein LGBTQ+ community connectedness may not be as important or may hold a different meaning for young LGBTQ+ people. As Frost et al. (2022) suggest, perhaps since the social climate has shifted to be more accepting of LGBTQ+ identities, young LGBTQ+ people can access affirmation from within and beyond the LGBTQ+ community and therefore, do not need to rely on LGBTQ+ communities in the way that older cohorts of LGBTQ+ people may have needed to. Since the participants in the present study were younger on average (Intake Mean Age = 32.3; Daily Mean Age = 33.5) than the older cohorts in Frost et al. (2022), it may be that for many of our participants, LGBTQ+ community connectedness did not effectively buffer the association between minority stress and psychological distress simply because it was not as important as other coping resources. Although it is possible that feeling connected to the LGBTQ+ community may still be beneficial for LGBTQ+ identity development and providing young LGBTQ+ people with a general sense of community, it could be that when faced with minority stress, LGBTQ+ people turn to other forms of coping. For example, in the present day, LGBTQ+ people may be able to turn to other

non-LGBTQ+ people in their social network for support or engage in more individualistic coping when experiencing familial rejection for their LGBTQ+ identity rather than feeling that the affirmation or support from other LGBTQ+ people is the only place they can turn.

Alternatively, it could be that some LGBTQ+ people's connection to the LGBTQ+ community may have 'soured' or been experienced as ambivalent. Research has shown that social relationships experienced as ambivalent, which are characterised by being helpful *and* upsetting, have negative effects on physical and psychological well-being (Lee & Szinovacz, 2016; Rook et al., 2012; Uchino et al., 2016). It is possible that when LGBTQ+ people experience their connection to the LGBTQ+ community to be helpful in some ways but upsetting in others that this connection is associated with greater, rather than less, psychological distress. For example, a bisexual man may experience connection to the LGBTQ+ community helpful in that it has provided him with a sense of pride in his non-heterosexual identity but may feel that this connection is upsetting due to biphobia he experiences and witnesses within the LGBTQ+ community (Lambe et al., 2017). Therefore, it could be that whether connection to the LGBTQ+ community buffers against minority stress depends on an LGBTQ+ person's experience of the community; specifically, whether their experience of the community is supportive, ambivalent, or aversive. Future research could benefit from not only measuring the strength of LGBTQ+ individuals' connection to the LGBTQ+ community but also their perceived quality of this connection and how this perception relates to psychological distress.

Buffering Abilities of Perceived Social Support

The present study contributes to the inconclusive literature regarding the minority stress buffering ability of social support: LGBTQ+ people who experienced more minority stress also experienced greater psychological distress, regardless of their perceptions of social support.

These findings support past work finding that LGBTQ+ people who have more social support experience less psychological distress overall (Keleher et al., 2010; Lehavot & Simoni, 2011; Masini & Barrett, 2007; Pflum et al., 2015), but conflict with studies suggesting that social support buffers the association between minority stress and negative mental health outcomes (Bockting et al., 2013; Doty et al., 2010; Trujillo et al., 2017).

Indeed, it could be that social support is a consistent buffer of the effects of more general stress on psychological distress (Cohen, 2004; Kawachi & Berkman, 2001), but not of the effects of minority stress, as suggested by Schmitt et al. (2014). Alternatively, it may be that the ability of social support to buffer the effects of minority stress on mental health outcomes may depend on the source (i.e., friends, family, significant others), type (i.e., sexuality specific versus general), and the quality (i.e., supportive, ambivalent, aversive) of social support LGBTQ+ people perceive. As Trujillo et al. (2017) suggested, many studies combine scores of social support from various groups into one single score or only measure general social support, but in reality, it may be that specific sources of support matter more than others. What specific source is most important for protecting LGBTQ+ mental well-being is unclear; some suggest that social support from peers but not family buffers the effects of minority stress (Bockting et al., 2013), others find support from one's significant other to be the only effective buffer (Trujillo et al., 2017), and some even find that support from friends with the same identity could strengthen the association between stressors and well-being (Carter et al., 2019). Similar to Bockting et al. (2013), Blair et al. (2018) found that support for one's same-sex relationship from friends was related to greater relationship and mental well-being but relationship support from one's family was not.

Additionally, the type of social support an LGBTQ+ person has access to may determine whether this support moderates the association between minority stress and psychological distress. It appears that sexuality specific social support (i.e., perception of likelihood of family and friends to support you when experiencing a problem related to your sexuality) may be a more effective minority stress buffer than non-sexuality related support (Doty et al., 2010). Blair et al. (2018) found that social support for romantic relationships predicted relationship and mental well-being among individuals in same-sex relationships above and beyond general social support. Although not explicitly measuring minority stress processes, the authors suggested that support for one's same-sex relationship may be perceived as support for one's sexual minority identity. Therefore, domain specific social support relevant to one's LGBTQ+ identity (i.e., social support specific to one's LGBTQ+ identity) may matter more for mental health than general social support for gender and sexual minority people.

The minority stress buffering ability of social support may also be determined by the perceived quality of support and the social ties from which the support comes from. While positive or supportive social ties (e.g., little conflict, affectionate) are associated with positive mental well-being, aversive or problematic social ties (e.g., consisting of common conflict or criticism) are unsupportive and associated with negative mental health outcomes (Lee & Szinovacz, 2016; Rook et al., 2012). Ambivalent social ties are also associated with negative mental and physical health outcomes and consist of relationships perceived as supportive but upsetting (Holt-Lunstad & Uchino, 2019; Lee & Szinovacz, 2016; Rook et al., 2012; Uchino et al., 2016). In their recent paper, Diamond and Alley (2022) suggest that LGBTQ+ people might be especially susceptible to experiencing social ambivalence, such as a parent who is generally loving and supportive but is disapproving and critical of their LGBTQ+ child's sexual or gender

minority identity. Therefore, the minority stress buffering ability of social support may also depend on whether the support comes from supportive or ambivalent ties. Collectively, past research and the current study suggest that the roles of social support and LGBTQ+ community connectedness as minority coping mechanisms are more complex than previously thought and may be dependent on a variety of factors.

Complexity of Minority Stress and Coping Processes

Together, the experiences of the LGBTQ+ people in the current study deepen our understanding of minority stress and coping but also highlight the complexity of these processes. The current study corroborates past research (Carastathis et al., 2017) revealing that minority stressors can sometimes function as a coping mechanism; specifically, LGBTQ+ people facing high levels of rejection from others may engage in identity concealment to protect themselves from psychological distress. Therefore, whether a minority stressor is experienced as stressful or not appears to be dependent on other contextual factors in an LGBTQ+ person's life. Similarly, although one would expect that the experience of greater levels of minority stress would be associated with more psychological distress, the present study found that having to conceal one's identity on a given day was especially distressing for LGBTQ+ people who do not face great rejection from the people with whom they live and perhaps did not usually hide their identity. Therefore, despite widespread belief that minority stressors are always related to psychological distress, this relationship appears to be more complicated, and in some cases even contrary in direction to what is expected.

The mechanisms underlying minority coping processes may be more intricate than previously thought. Although social support and LGBTQ+ community connectedness predicted less psychological distress overall among LGBTQ+ participants, they failed to buffer the

relationship between minority stressors and psychological distress. It may be that the ability of social support to buffer against minority stressors depends on the type, source or quality of social support and that the moderating ability of LGBTQ+ community connectedness depends on an LGBTQ+ person's experience of the community or LGBTQ+ identity. Indeed, transgender (Blair & Hoskin, 2019; Stone, 2009) and bisexual (Lambe et al., 2017) individuals may experience exclusion or discrimination within the LGBTQ+ community, and some gay men may experience connection to the LGBTQ+ community as stressful, rather than stress ameliorating (Pachankis et al., 2020).

It could also be that cognitive processes intervene in the relationship between minority coping resources and psychological distress. For example, LGBTQ+ people may feel that they have adequate social support, but if they also feel as though they are a burden to their social network because of their ongoing minority stressors (Baams et al., 2015), this social support may not be fully useful as a coping resource. In fact, maladaptive cognitive processes, such as rumination, may explain why social support from friends with a shared LGBTQ+ identity is sometimes associated with worse mental well-being (Carter et al., 2019). It is also possible that minority coping resources are better conceptualised as suppressors (i.e., mediators) rather than buffers (i.e., moderators) of the relationship between minority stress and mental well-being. For example, some researchers theorise that a lack of access to minority coping resources is the mechanism through which minority stress is negatively associated with psychological well-being; indeed, in some studies both social support (Ehlke et al., 2020; Lehavot & Simoni, 2011; Tabaac et al., 2015) and LGBTQ+ community connectedness (McConnell et al., 2018; Puckett et al., 2015; Ribeiro-Gonçalves et al., 2019; Roberts & Christens, 2021; Scroggs & Vennum, 2020) have been effective mediators of the association between minority stress and well-being

outcomes. Together, the findings of the current study suggest that minority stress and coping processes are complicated and as a result may require more complex models to fully understand them.

Alternative Models to the Minority Stress Model

Psychological Mediation Framework

Although the Minority Stress Model has been the most consistently used theoretical framework for studying LGBTQ+ mental health in the past two decades, more complex models that extend from the Minority Stress Model have emerged. In particular, the Psychological Mediation Framework (PMF; Hatzenbuehler, 2009) may adequately address the complexities of minority stress and coping processes outlined above. Similar to the Minority Stress Model, the Psychological Mediation Framework proposes that LGBTQ+ people experience additional stressors as a result of stigma (i.e., minority stress) that lead to heightened emotion dysregulation, interpersonal problems, and negative cognitive processes, which result in psychopathology (Hatzenbuehler, 2009). The PMF conceptualises minority coping processes as mediators between minority stress and psychological outcomes. Specifically, this framework views low social support as one mechanism through which minority stress can negatively impact psychological well-being. Through the inclusion of general psychological processes, the PMF also considers how experiences of rumination or perceived burdensomeness could influence LGBTQ+ individuals' experiences of minority stressors and coping resources.

Additionally, Hatzenbuehler (2009) describes how including moderators of the mediation process between minority stress and mental health outcomes can further illuminate for whom a specific mediator is important. Another benefit of the PMF is its ability to allow researchers to identify individual interventions to interrupt the negative relationship between minority stress

and LGBTQ+ individuals' mental well-being. For example, it may be easier to design interventions that target an LGBTQ+ person's emotional regulation than interventions which boost an LGBTQ+ person's perceptions of social support or reduce their experience of minority stress. Therefore, the PMF may be an especially comprehensive framework for examining LGBTQ+ mental well-being that addresses the complexities of minority stress and coping processes.

Social Safety Perspective

Another alternative approach to understanding LGBTQ+ mental health, the Social Safety Perspective, differs from the Minority Stress Model and the Psychological Mediation Framework as it suggests that stigma leads to compromised mental well-being among LGBTQ+ people through the absence of social safety (e.g., reliable social connection, belonging, recognition and inclusion) rather than the presence of minority stress (Diamond & Alley, 2022). The authors argue that since humans have a fundamental need to belong and social exclusion often led to death for our evolutionary ancestors, our default state is that of chronic vigilance in which we expect danger until we detect social safety. However, stigma presents a "primal threat" as it makes social safety more difficult or impossible to access; for example, a nonbinary person may find it difficult to experience reliable social inclusion and recognition as they navigate a world where their family does not validate their identity, laws and policies in their country do not protect them, and strangers express confusion or disgust to their gender expression. The absence of social safety is then thought to activate a chain of behavioural (e.g., identity concealment, self monitoring) and cognitive (e.g., rumination, anticipated stigma) processes in an effort to protect oneself from social exclusion but that ultimately lead to poor mental and physical health (Diamond & Alley, 2022).

The Social Safety Perspective addresses some of the same complexities with the Minority Stress Model that the Psychological Mediation Framework does; namely, the Social Safety Perspective also allows for the inclusion of general psychological processes (e.g., rumination) in the relationship between stigma and psychological distress. The Social Safety Perspective also addresses issues present in the current study, including quality of social support and LGBTQ+ community connection, minority stressors functioning as coping strategies, and stress buffering versus suppressing mechanisms. In the causal chain activated when an LGBTQ+ person detects an environment may be unsafe, the Social Safety Perspective acknowledges that identity concealment may function as a behavioural effort to maintain social safety and protect one's mental well-being. Additionally, Diamond and Alley (2022) acknowledge that while the benefits of social safety may appear similar to the minority stress buffering effect of social support, there are distinctions between the two: social safety does not rely on the presence of a stressor to buffer and social safety cannot be derived from social partners who provide ambivalent support. Since social safety requires social support and inclusion that is "reliable," a social network member who is helpful but upsetting (i.e., ambivalent social tie) may be perceived as socially supportive but not socially safe. Thus, future research should explore the existing complexity of the Minority Stress Model within the context of social safety.

Limitations and Future Directions

Despite the unique context of the COVID-19 pandemic being a potential strength of the current study, this context may have been limiting in other ways. While the pandemic was a time when minority stress was exacerbated and access to coping resources was difficult, this reduced access to ameliorative factors may have played a role in the null results of the moderation analyses. Social support and LGBTQ+ community connectedness may have been difficult for

LGBTQ+ people to experience while under social distancing mandates, especially because previous research suggests that online social support is not a replacement for in-person support (Ybarra et al., 2015). Additionally, the exacerbation of minority stress, namely identity rejection and concealment, may have been especially resistant to any buffering effects from social support or LGBTQ+ community connectedness. For example, if an LGBTQ+ participant was essentially trapped at home under social distancing mandates with individuals who did not know about the participant's identity or fiercely rejected the participant's identity, feeling connected to the LGBTQ+ community or perceptions of social support from people outside the home may not have been enough to protect against psychological distress. In this case, it is possible that other coping mechanisms that are not dependent on outside social networks could have been more useful in buffering against the harms of minority stress.

Indeed, in line with the Psychological Mediation Framework, it is possible that non-social general psychological processes, such as rumination or hopelessness, may have better explained the relationship between minority stress and psychological distress among LGBTQ+ people during the COVID-19 pandemic. Specifically, LGBTQ+ people who spend every day with people who reject their identity or who do not know about their identity may engage in more rumination or feel more hopeless because of these minority stressors, which in turn, could explain why LGBTQ+ people experienced more psychological distress than non-LGBTQ+ people during the pandemic.

Although the current study benefited from including sexual and gender minority people who have various sexual orientations and gender identities, the analyses were limited by treating these participants as a monolithic group. Although all sexual and gender minorities are thought to experience minority stressors, the specific way these stressors manifest and relate to

psychological distress may differ based on sexual or gender identity. For example, bisexual (Chan et al., 2020) and transgender (Millet et al., 2017) people experience greater rates of psychological distress than their lesbian, gay, and/or cisgender counterparts, a difference which has been attributed to minority stressors unique to each identity. Specifically, bisexual individuals and transgender people may be "multiply marginalised": bisexual people may experience negative attitudes toward their bisexuality from both heterosexual and LG people (Feinstein & Dyar, 2017; Lambe et al., 2017) and transgender people, many of whom report also having a sexual minority identity (Puckett et al., 2021), may experience sexual *and* gender minority stressors.

LGBTQ+ people of colour may be another group of LGBTQ+ participants who experience multiple marginalisation; therefore, LGBTQ+ people of colour may experience multiple compounding stressors that are associated with poor mental health (Balsam et al., 2011; McConnell et al., 2018). Although the present study included a dichotomous measure of race/ethnicity as a control variable in all analyses, the sample was predominantly White. Age was another variable controlled for in the current analyses that recent studies have pointed to as potentially relevant when considering the relationship between minority stress, coping, and psychological distress (Frost et al., 2022). While future studies should focus on recruiting diverse samples of LGBTQ+ people when studying the mechanisms that connect minority stress to mental health, it may be beneficial to examine these processes separately among various LGBTQ+ identities, racial and ethnic identities, as well as age groups.

Another limitation of the present study is the small number of minority stressors, coping resources, and psychological outcomes measured. The current study only measured one distal (identity rejection) and one proximal (identity concealment) minority stressor. Although these

stressors were chosen as they were especially relevant during the COVID-19 pandemic, the limited number and nature of these stressors restrict the conclusions the current analyses can draw. As was apparent in the findings of the present study, the nature of identity concealment as a minority stressor is complicated, as it sometimes serves as a protective factor for LGBTQ+ people (Carastathis et al., 2017; Pachankis & Branstrom, 2018). Including measures of other minority stressors, such as internalised stigma or experiences of discrimination, would have provided a more comprehensive examination of minority stress experiences. In fact, research has suggested that internalised homophobia may explain how other minority stressors, like homophobic victimisation, negatively affect the mental health of LGBTQ+ individuals (Puckett et al., 2016).

In addition, the present study focused on coping resources that rely on social/interpersonal connections; however, there are other coping mechanisms that function at the level of the individual that should be considered in future research. For example, forming a positive minority sexual or gender identity may protect LGBTQ+ people from psychological distress following the experience of minority stressors. It appears that when faced with an anti-LGBTQ+ political environment, positive identity development and connection to the LGBTQ+ community may serve as resilience factors for LGBTQ+ people (Russell & Richards, 2003). Similarly, research criticising the deficit-based approach of research using the MSM has suggested that positive psychology approaches that also consider factors such as stress related growth and outcomes like eudaimonic well-being could provide a more holistic understanding of LGBTQ+ mental health (Vaughan & Rodriguez, 2014). Therefore, future research would benefit from including measures of a variety of minority stressors, coping mechanisms, and

psychological outcomes to paint a more complete picture of LGBTQ+ individuals' mental health.

Alternatively, as suggested by Diamond and Alley (2022), it could be that social safety is the missing piece to understanding the relationship between stigma and psychological distress among LGBTQ+ people. Rather than minority stress being the driver of psychological distress and minority coping resources acting as buffers against minority stress, it could be that a lack of social safety is what jeopardizes LGBTQ+ individuals' mental health. Although measuring minority stress and coping resources in the current study may have told us about constructs *related* to social safety (i.e., if participants are experiencing social threats, if participants have social support), these constructs are not the same as social safety. Future research should consider the role of social safety in the study of LGBTQ+ individuals' mental health by developing and including measures of social safety.

Conclusion

The current study provides partial support for the minority stress and coping processes outlined in the Minority Stress Model, but underscores the need for researchers to use more complex models to fully understand the factors that predict LGBTQ+ individuals' mental health. Generally, experiences of minority stress were associated with greater distress among LGBTQ+ participants and access to minority coping resources predicted less distress; however, these relationships were complicated. Specifically, identity concealment, which is generally considered to be a minority stressor, functioned instead as a coping strategy for LGBTQ+ people experiencing high levels of rejection at intake; however, it was also especially distressing for those who do not experience great rejection for their identity in the daily analyses. Contrary to the MSM, the minority coping resources measured in the current study did not buffer the

association between minority stress and psychological distress. While it may be that social support and connection to the LGBTQ+ community are not effective minority stress buffers, it could be that there are contextual factors (e.g., source and type of social support, age of LGBTQ+ person) or psychological processes (e.g., rumination, perceived burdensomeness) that determines when and whether these coping resources act as buffers. Further, it may be that minority coping resources are better conceptualised as mediators, or the mechanisms through which minority stress relates to psychological distress (i.e., minority stress leads to low levels of available social support which then leads to more global psychological distress). Together, the findings of the present study suggest that future research examining LGBTQ+ mental health would benefit from utilisation of more complex longitudinal models that consider how contextual factors, general psychological process, and a diversity of LGBTQ+ identity experiences may influence the relationship between a variety of minority stressors, coping mechanisms, social safety, and psychological outcomes.

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Appendix A: Sample Recruitment Materials

Sample Facebook/Twitter/Instagram Ads:

How are you coping right now? We'd love to hear from you to learn more about human behaviour and coping during a pandemic situation. **Study URL here.**

Are you staying home and social distancing due to COVID-19 right now? We'd love to hear how you're doing and how you're spending your days. **Study URL here.**

Not sure what to think about COVID-19? Not sure what to do? We're wondering how people are doing, what they're thinking, feeling, worrying or not worrying about. Help us out by joining our COVID-19 coping study. **Study URL here.**

Want to keep a record of your experiences during COVID-19 AND participate in research? We're wondering how people are coping with COVID-19, day by day, and we'd love to hear from you. When the study is done, we'll send you a copy of your data. **Study URL here.**

Longer Social Media and Participant Recruitment Posts:

(*These posts were distributed via social media pages and groups, and sites where researchers can post study descriptions (e.g., findparticipants.com, survey circle).*)

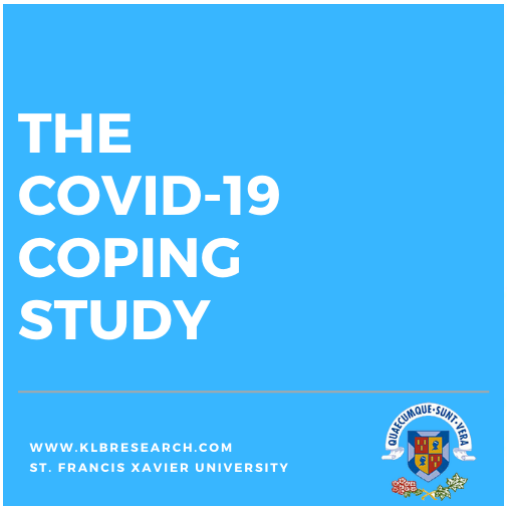
Researchers at St. Francis Xavier University, Acadia University, and Indiana University are seeking participants for an online survey about how people are coping during the COVID-19 pandemic. Participating involves completing an online questionnaire as well as an optional 2-4

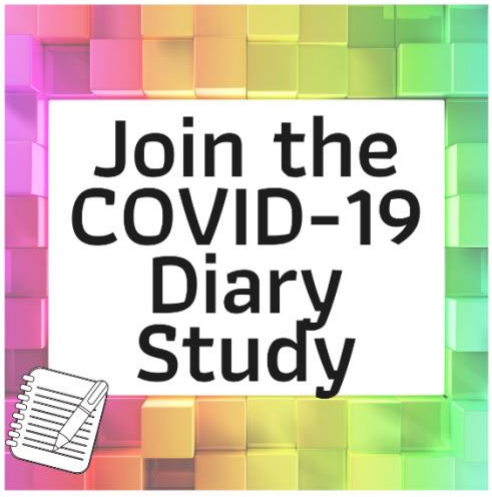
week daily diary study in which we will send you short surveys to check in with how you're doing on a daily basis. All participants will be entered into a prize draw. The study is open to absolutely anyone who is 186 years of age or older and able to access and complete online surveys in the English language. Please consider taking part, and/or pass this message along to anyone else you know who might be interested. **Study URL here**

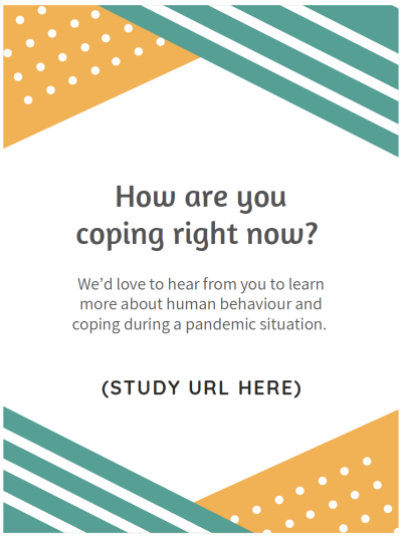
Researchers: Dr. Karen L. Blair (St. Francis Xavier University / KLB Research), Drs. Kathryn Bell and Diane Holmberg (Acadia University), and Dr. Debby Herbinick (Indiana University)

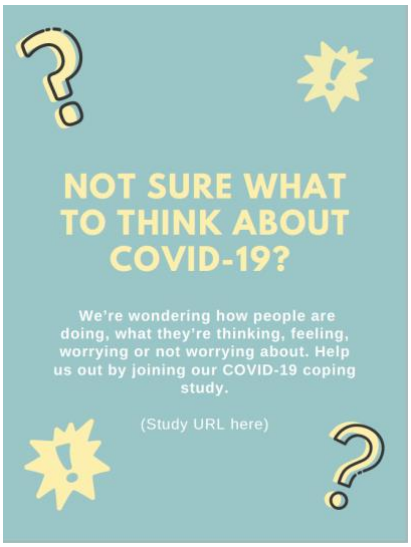
Sample Recruitment Images:

(The following images and other similar images were reconfigured and resized for various social media platforms, including as Facebook cover photos and images sized to distribute over Twitter, Instagram (posts and stories), etc.)









General Email Announcement:

(An email announcement containing the following text was sent out on listservs that allow publicizing studies or to researcher networks.)

We are looking for participants for a study about how people are coping during the COVID-19 pandemic. Participating involves completing an online questionnaire as well as an optional 2-4 week daily diary study in which we will send you short surveys to check in with how you're doing on a daily basis. All participants will be entered into a prize draw. The study is open to absolutely anyone who is [18 years of age or older and able to access and complete online

surveys in the English language. Please consider taking part, and/or pass this message along to anyone else you know who might be interested. **Study URL here**

Researchers: Dr. Karen L. Blair (St. Francis Xavier University / KLB Research), Drs. Kathryn Bell and Diane Holmberg (Acadia University), and Dr. Debby Herbinick (Indiana University)

Email Request to Former Participants:

(An email announcement containing the following text was sent to participants in the databases Dr. Karen Blair maintains of former participants who have agreed to be contacted for future studies.)

Hello:

We hope this email finds you well. You had participated in a study by Dr. Karen Blair of the KLB Research Lab (at either Acadia University, Queen's University, the University of Utah or St. Francis Xavier University), and had agreed to let us contact you if we had future studies you might be interested in. Right now, we are looking for participants for a study about how people are coping during the COVID-19 pandemic. Participating involves completing an online questionnaire as well as an optional 2-4 week daily diary study in which we will send you short surveys to check in with how you're doing on a daily basis. All participants will be entered into a prize draw. The study is open to absolutely anyone who is 18 years of age or older and able to access and complete online surveys in the English language. Please consider taking part, and/or pass this message along to anyone else you know who might be interested. **Study URL here.**

Researchers: Dr. Karen L. Blair (St. Francis Xavier University / KLB Research Lab), Drs. Kathryn Bell and Diane Holmberg (Acadia University) and Dr. Debby Herbinick (Indiana University)

Acadia University Email Announcements:

(An email announcement containing the following text was sent out to the Acadia University FACULTY-STAFF listserv.)

Drs. Kathryn Bell and Diane Holmberg (Acadia University), Dr. Karen Blair (St. FX University), and Dr. Debby Herbinick (Indiana University) invite Acadia University faculty and staff members to participate in a study about how people are coping during the COVID-19 pandemic, funded by the Nova Scotia COVID-19 Health Research Coalition. Participating involves completing an online questionnaire as well as an optional 2-4 week daily diary study in which we will send you short surveys to check in with how you're doing on a daily basis. If you so choose, you can indicate that you're a member of the Acadia community. In that case, your data will be used, anonymously and in a group format, to explore how Acadia members specifically are doing during the pandemic. The more people participate, the clearer a picture we can provide of how Acadia participants are doing during the pandemic, and what supports might be helpful to them. Or, if you prefer, you can just take part in the regular study, without flagging yourself as affiliated with Acadia. All participants will be entered into a series of prize draws, with a special $200 value prize draw just for Acadia participants. The Acadia-specific study is open to all faculty and staff 18 years or older who are currently at Acadia, were at Acadia in the 2019/20 academic year, or will be joining us in the 2020/21 academic year. Please consider taking part,

and/or pass this message along to anyone else you know at Acadia University who might be interested. **Acadia-specific splash page URL here**

And if you know of anyone not at Acadia who might be interested in taking part in our broader study, they're more than welcome to participate too! Have them go here to learn more: **General study splash page URL here.** Lots of prizes to be won, a chance to help us learn more about coping during the pandemic, and (if you wish) you will be given a copy of your daily diary entries as a record for the future!

(An email announcement containing the following text will be sent out to the ASU student listserv, with their permission.)

Hello Acadia students!

How have you been managing during the COVID-19 pandemic? What challenges are you facing? How could Acadia University and/or the Acadia Student Union best support you? Drs. Kathryn Bell and Diane Holmberg (Acadia University), Dr. Karen Blair (St. FX University), and Dr. Debby Herbinick (Indiana University) invite you to take part in an on-line study to answer these questions! It's a large-scale on-line study, funded by the Nova Scotia COVID-19 Health Research Coalition. Participating involves completing an online questionnaire as well as an optional 2-4 week daily diary study in which we will send you short surveys to check in with how you're doing on a daily basis. If you so choose, you can indicate that you're a student at Acadia. In that case, your data will be used to help us prepare a report outlining how Acadia students are doing during the pandemic. This report will be shared with Acadia administrators

and the ASU Executive, so they can use the information to help them plan supports. The more students participate, the clearer a picture we can provide of how Acadia students are doing, and what supports might be helpful to them. All of your responses will be anonymous and only provided as part of group summaries; there will be individual information presented. Or, if you prefer, you can just take part in the regular study, without flagging yourself as an Acadia student. All participants will be entered into a series of prize draws, with a special $200 value prize draw just for Acadia participants. The Acadia-specific version of the study is open to all Acadia students 16 years or older who are currently at Acadia, were at Acadia in the 2019/20 academic year, or will be joining us in the 2020/21 academic year. Please consider taking part, and/or pass this message along to anyone else you know at Acadia University who might be interested.

Acadia-specific splash page URL here

And if you have any friends or family who might be interested in taking part in our broader study, they're more than welcome to participate too! Have them go here to learn more: **General study splash page URL here.** Lots of prizes to be won, a chance to help us learn more about coping during the pandemic, and (if you wish) you will be given a copy of your daily diary entries as a record for the future!

Sample E-mail to Partnering Organizations' Email Listservs (e.g., LGBTQ+ organizations, domestic violence organizations):

Dear Members:

We would like to draw your attention to a study on coping during the COVID-19 pandemic, being conducted by Dr. Karen Blair (St. FX University), Drs. Kathryn Bell and Diane Holmberg (Acadia University), and Dr. Debby Herbinick (Indiana University). It is funded by the Nova Scotia COVID-19 Health Research Coalition. Participating involves completing an online questionnaire as well as an optional 2-4 week daily diary study in which you will be sent short surveys to check in with how you're doing on a daily basis. As well as general information about coping with the pandemic, the study contains a number of measures (relevant to LGBTQ+ individuals / relevant to those suffering, or at risk or suffering, interpersonal violence). The researchers will be preparing targeted reports on these issues and will be sharing their findings with us. We think the information in this report might help give us insight to serve members like you better. If you are able and willing, please consider taking part in the study. Note you are free to withdraw at any time. Also note there are prize draws available, and (if you wish) you will be given a copy of your daily diary entries to keep at the end of the study, as a record of your experiences in this challenging time.

Feel free to share this invitation with anyone else you know who might be interested (they may or may not have the same issues as you; the study is open to all!). For more information, please go to **Study URL.**

Thank you!

Sign off by organizational representative.

Dear [Organization]

My name is Dr. Karen L. Blair and I am an Assistant Professor of Psychology at St. Francis Xavier University. I have launched an online study to better understand how people are coping and staying connected throughout the COVID-19 Pandemic. I was hoping that you would consider sharing the study with your members/constituents. If so, please consider sending the blurb below.

Researchers are looking for {LGBTQ+, Nova Scotians, individuals in relationships} to participate in a study about how people are coping during the COVID-19 pandemic. Participating involves completing an online questionnaire as well as an optional 2-4 week daily diary study in which we will send you short surveys to check in with how you're doing on a daily basis.

All participants will be entered into a prize draw. The study is open to absolutely anyone who is 18 years of age or older and able to access and complete online surveys in the English language. Please consider taking part, and/or pass this message along to anyone else you know who might be interested. **Study URL here**

Researchers: Dr. Karen L. Blair (St. Francis Xavier University / KLB Research) and Dr. Debby Herbinick (Indiana University)

Brief Description of Study on www.DrKarenBlair.com:

(The following text will be displayed on www.DrKarenBlair.com (operated by Karen Blair, one of the co-investigators on this project).)

ONLINE SURVEY, OPEN TO INDIVIDUALS 18+

Researchers from Indiana University, Acadia University and St. Francis Xavier University are seeking participants for an online survey [NOTE: In actual use, this was a clickable link] regarding interpersonal coping and day-to-day experiences during the COVID-19 Pandemic. Participants can choose to complete a one time survey or to do the one time survey as well as a 2-4 week daily diary study where we send you a short survey 2-4 weeks (duration is your choice). All participants will be entered into a prize draw. Some participants may be contacted to participate in a paid follow-up study. If you are over the age of 18 and capable of completing an online survey in the English language, then you are eligible to participate!
For more information, go to **Study URL here.**

Study Specific Splash Page:

How are you coping with the COVID-19 Pandemic?

We want to know how you're doing right now. Who are you connecting with? How are you connecting? What do your daily activities look like during this time? How have your relationships been impacted or your working conditions? These are just some of the types of things we'd like to know about your experience during the COVID-19 pandemic. Wherever you are in the world, let us know how you're doing.

Our online study is open to those over the age of 18, and we are interested in hearing from people of all ages, abilities, backgrounds, genders, and sexualities about how they're managing life during this pandemic. We'd love to hear from everybody!

All participants will be entered into prize draws. Please spread the word to others who might also be interested!

For complete study information, or to take part, go to **Study URL here.**

Appendix B: Invitation to Participate and Consent Form

Title of Research:

COVID-19 Interpersonal Coping Diary Study

Name of Researcher(s):

Karen L. Blair, PhD St. Francis Xavier University

Debby Herbenick, PhD, Indiana University

Kathryn M. Bell, PhD & Diane Holmberg, PhD - Acadia University

Invitation to Participate

You are being invited to participate in an online survey about your experiences during the COVID-19 pandemic. Researchers do research to answer important questions that might help change or improve the way we do things in the future.

This form will give you information about the study and help you to decide whether you want to participate.

What is the purpose of this research?

The purpose of this research is to better understand how individuals are coping during the COVID-19 pandemic. We are interested in learning about how you are spending your days, how you are feeling, who you are communicating with, what you think of the overall situation, and what actions/behaviours you are engaging in as a result of the pandemic.

What is involved in participating in this study? How long will it take?

The first part of this study involves completing a 30-40 minute online survey about your general well-being, demographics, and responses to the COVID-19 pandemic.

At the end of this survey, you'll be asked if you would like to opt-in to a series of follow-up surveys daily. We call this a "daily diary" study because it is like keeping a daily journal.

If you opt-in, you'll provide an email address (which can be an anonymous email address) and we will send you a link each night to a new survey that will take you 5-10 minutes to complete. You'll have the option to participate in the daily diary study for 2 or 4 weeks, although you may, of course, quit the study at any time simply by no longer following the links sent to you through email. Every 7 days you'll complete a slightly longer end-of-day survey that might take up to 20 minutes to complete, depending on how you answer various questions. On the 14th daily diary, you'll be asked if you want to finish the study or continue for another two weeks. We'd love to hear from you every day, but you are free to skip any of the surveys or stop responding at any time. You may also choose to switch to completing surveys only every 7 days at any point by clicking the "Delete My Data or Switch to 7 Day Surveys" at the bottom of the survey at any time.

Can I Be Reminded by Text-Message?

Yes. If you so choose, you may also receive SMS (text message) reminders to complete the surveys. To do so, you'll need to provide your mobile phone number. Your number will only be

used for the purpose of sending you reminders each night to complete your survey. The reminders will include a link to take you right to the survey, which you can complete on your phone if you so choose. To end the reminders at any time, simply reply STOP to one of the messages. At the end of the study, or when you withdraw from the study, your phone number will immediately be deleted from our records.

Will I be compensated for my time in any way?

Yes! You will be entered into a series of prize draws.

For each survey that you complete, you will be entered into the grand prize draw to win one of 6 $150 (USD value – available in CND, GBP or USD) gift card to Amazon.
For example, if you complete just the intake survey, you'll get one entry into this draw.
If you complete the entry survey and 7 daily diary surveys, you'll be entered into the draw 8 times.

Every week we will do a drawing to win one of 5 $20 (USD value – available in GBP, CND or USD) Amazon gift card. Participants residing in Nova Scotia will be entered to win additional weekly prize draws.

You'll be entered into this draw once for each survey you have completed at the time of the drawing, continuing until the study is completed.

You'll be re-entered into each weekly draw until the end of the study, even if you've completed your participation already.

For each survey that you complete, you will be entered into an additional draw to win a 6 night, 7 day stay at Lake Louise Inn in Lake Louise, Alberta, Canada (located in Banff National Park, Lake Louise is in the Rocky Mountains and one of Canada's most beautiful tourist destinations. The voucher will be valid until the end of 2022. This prize was donated to the study by Shelter Canadian Properties Limited.

Is my participation voluntary?

You may choose not to take part in the study or may choose to leave the study at any time. Your participation is entirely voluntary.

Deciding not to participate, or deciding to leave the study later, will not result in any loss of penalty or loss of benefits.

You may withdraw from the study at any time. To do so, you may simply close your browser and stop replying to the surveys that are sent to you through email. You may also reply to any of the emails sent and indicate that you wish to stop participating, in which case we will make sure you do not receive any more reminders about the study.

If you would like to withdraw (delete) your data entirely, you may do so by clicking the "delete my data" link at the bottom of the survey or by replying to any of the email reminders and letting

us know that you'd like us to delete your data. If you wish to withdraw your data after survey completion, send us your session ID ([survey('session id')]) and we will remove your data, as long as it is still possible to do so. If any data you provide has already been used in analyses, reports, presentations, or papers in a de-identified form, it will no longer be possible to remove your data.

If you quit the study by closing your browser, then the data you've provided up to that point may still be used for analysis unless you request that we delete your data.

What are the potential benefits associated with participation in the study?

The benefits of participation in the study that are reasonable to expect are that you may find it helpful to think about how you are coping with the pandemic. At the end of the study, you will be able to print off an automatically generated summary of your daily diary responses to keep for your own records. Within the survey, you will be given the option to view this summary or to not view the summary, so it is entirely up to you whether you would like to review your experiences or not. There are no other expected benefits to participating in this study.

As researchers, we hope to learn things that will help scientists, educators, healthcare providers, and people around the world figure out how to cope during particularly difficult times.

What are the potential risks of participating in this study?

The potential risks of participating in this research are that you may feel uncomfortable, sad, or anxious answering some of the questions. However, we expect that these feelings will not be any

more than usual under the present circumstances. Your consent to participate in this study does not entail waiving any rights that you have legal recourse in the event of research-related harm.

Will anyone know what I said? (Confidentiality)

If you only participate in the first part of the study (single survey), you may do so anonymously, as we will not gather your name, email address or any other identifying information. At the end of the survey, you will be forwarded to the prize draw entry page, where we will ask for an email address. Your email address will not in any way be connectable to the survey answers you provided. If you complete the survey using employer-owned equipment, your employer may have a legal right to any information sent using employer-owned equipment.

If you opt to participate in the daily diary study, we will need an email address to send the reminders to each night. This email address can be an anonymous email address if you wish to protect your identity. You may also opt to provide your mobile phone number to receive reminders. This number will be deleted from your survey data and will only be used for the purpose of sending survey reminders.

Your daily diary responses will be connected to your initial survey response by returning you to a later page in the survey each day as you progress through the study.

Your responses to questions about conflict with an intimate partner could be self-incriminating and harmful to you if they became known outside the study. We do not intend to disclose this information and your identity will be protected by the full extent allowed by the law. There are

certain circumstances that cannot be kept confidential and must be reported to law enforcement, emergency mental health services or protection agencies. These circumstances include (1.) if you are in imminent danger to yourself or someone else; (2.) if you report knowledge of current child or elder abuse; or (3.) if your records are subpoenaed by a court of law. Within the extent of the law your participation in this project, as well as your responses during the study, will be kept strictly confidential.

Where will my data be stored and used?

The questionnaire stores its data on Survey Gizmo's servers, which are in Montreal, QC, Canada. The data will be stored on a secure server and only downloaded onto password-protected computers and hard drives belonging to our research lab.

All data will be analyzed as a group and presented in such a way that you are not individually identifiable. As soon as the study is completed, we will de-identify all of the data, meaning that if you provided an email address or phone number, we will remove this information from our data set.

Release of Data

All data will be analyzed as a group. If we make use of individual quotations, you will not be identified in any way and we will alter quotations if necessary, in order to protect your identity.

Contact Information

If you have any questions, you may contact the following researchers:

Dr. Karen L. Blair, St. Francis Xavier University – kblair@stfx.ca , 1.902.867.5956

Dr. Kathrn M. Bell, Acadia University - kathryn.bell@acadiau.ca, 1.902.585.1408

Dr. Diane Holmberg, Acadia University - diane.holmberg@acadiau.ca

Dr. Debby L. Herbenick, Indiana University -- debby@indiana.edu

This project has been reviewed and approved by the Research Ethics Boards at St. Francis Xavier University, Acadia University, and Indiana University. If you have any questions or concerns about the ethics of this research, you may contact Stephen Maitzen, Chair of Research Ethics Board (REB), (902)-585-1407, smaitzen@acadiau.ca

Would you like to enter the survey?

- I have read the information above and consent to participate in this study.
- I DO NOT wish to participate in this study.

Appendix C: Debriefing

Thank you!

The overall goal of this study is to understand the different ways that people have experienced and coped with the COVID-19 pandemic, and how those experiences and coping strategies change over time.

Your responses will be added to other people's responses (maintaining your anonymity) and used to: a) summarize findings from this study for future research publications, and b) use these ideas to inform an empirical understanding of how people cope with global crises.

Contact Us

If you have any questions or concerns about this study, please contact the principal investigators for this study:

Karen Blair

Email: kblair@stfx.ca

Phone: 902.867.5956

Prize Draw

If you would like to enter the prize draw, please Click Here.

COVID-19 Resources

Below, we have compiled a list of resources where you can read up-to-date information about the current global status of the Covid-19 pandemic.

List of Important COVID-19 Information Websites:

World Health Organization Coronavirus Disease Page

Public Health Agency of Canada Coronavirus Disease (COVID-19) Page

Centres for Disease Control and Prevention Coronavirus Disease (COVID-19) Page

National Health Service Coronavirus (COVID-19) Page

Singapore Ministry of Health COVID-19 Page

Coping Resources

Below, we have compiled a list of resources that may help you to cope with the ongoing COVID-19 global pandemic.

List of Coping Resources

How to Cope with the Mental Health Impacts of Covid-19 (GoodTherapy)

Free Calm Guided Meditations

Free tool to watch Netflix with others

View 500 museum exhibits online with Google Arts & Culture

Free Gratitude Journal

The CDC's guide to managing anxiety and stress

Free online Coursera course: The Science of Well-Being

300,000 books are free to download from New York Public Libraries

Access free textbooks from Cambridge University Press

Live virtual concerts streaming live daily (list compiled by NPR)

Free online AA meetings

CreativeLive is streaming live art classes for free

Below, we have compiled a list of resources for those who need mental health support or are experiencing interpersonal violence

Nova Scotia Domestic Violence Resource Centre (Nova Scotia)

Nova Scotia Advisory Council on the Status of Women – Resources (Nova Scotia)

Transition House Association of Nova Scotia (Nova Scotia)

Ending Violence Association of Canada Resources (Canada)

National Domestic Violence Hotline (United States; includes LGBTQ resources)

Hot Peach Pages – International Directory of Domestic Violence Agencies (International)

PLFAG Canada Resources (Canada LGBTQ Resources)

The Lifeline Canada Foundation Mental Health Resources (Canada, US, International; includes LGBTQ resources)

prideHealth (Nova Scotia; LGBTQ physical and mental health services)

Nova Scotia Mental Health Crisis Line – 1.888.429.8167

Appendix D: Demographic Measures

How old are you in years?

_____ (numerical response only)

– those younger than 18 (or 16 if an Acadia student, i.e., came through from the Acadia consent form) were directed out of the survey.

Which of the following best describes your gender identity?

- Man
- Woman
- Non-binary
- Agender
- Genderqueer
- Genderfluid
- Questioning
- You don't have an option that applies to me. I identify as (please specify) _____

Are you a parent/guardian to: (select all that apply)

- Infant (less than 1 year old)
- Child 1-5 year old
- Child 6-12 year old
- Child 13-18 year old
- None of these

Some people identify with the term 'transgender' (e.g., with a gender identity that is different to the one they were assigned at birth). Do you identify as transgender?

- Yes
- No

Which of the following best describes your transgender identity?

- Trans man
- Trans woman
- Non-binary
- Gendergender/Genderfluid
- Something else, please let me describe: _____

Do you have an identity that would fall under the LGBTQ+ umbrella? We are asking only so that we can show you some related questions later.

- Yes (please specify): ____
- No

What is your sexual orientation/identity?

Open text

Which of the following options **best** describes your sexual identity or orientation?

- Straight/Heterosexual
- Gay/Lesbian

- Bisexual
- Queer / Pansexual
- Asexual
- None of the above, please specify:
- Prefer not to respond

With which of the following religious traditions, denominations do you most closely identify?

- Buddhist
- Muslim
- Hindu
- Sikh
- Christian
- Jewish
- Unaffiliated
- Atheist
- Agnostic
- Non-religious
- Nothing in particular
- Other (please specify): _____

Which of the following best describes your ethnicity/race?

- White
- Mixed / Multiple Ethnic Groups
- Asian
- Black / African / Caribbean
- Latin American
- Indigenous / Aboriginal
- You do not have an option that applies to me. The best description for my ethnicity/race is (Please specify): _____

Do you have a disability or impairment of any kind? (physical, visual, auditory, cognitive, mental, emotional, etc.)?

- Yes / No / Prefer not to answer
- If Yes – Please specify
- IF Yes
    - How has COVID-19 impacted your ability to live with your disability or impairment? (open ended)
    - How has your disability or impairment impacted your ability to cope with COVID-19 and/or observe any of the physical distancing guidelines? (open-ended)

Thinking of the country that you are in right now, what best describes your status in that country:

- This is the country I usually live in
- This is the country I am hoping/plan to live in in the long term
- I am in this country for education purposes, but outside of school I live somewhere else
- I am in this country as a tourist

- I am in this country temporarily for employment reasons
- Something else: _____

Who currently resides in the home in which you are living/staying: (check all that apply)

- Myself
- My pet(s)
- My or my partner's parent(s)
- My sibling(s)
- Infant (0-12 months)
- Child(ren) age 1-12
- Child(ren) ages 13-18
- Roommate(s)
- Romantic Partner(s)
- Other relative(s)
- Renter/Tenant
- Landlord
- Individuals over the age of 70
- Individuals with pre-existing health conditions that put them at greater risk for serious problems with COVID-19
- Additional people not listed, please describe:

Where are you currently located?

_____ (country; drop down menu)
_____ (province/state; drop down menu)

If Nova Scotia,
What region of Nova Scotia are you from? (map with the Nova Scotia health authority regions will be shown and labeled)

- Western
- Northern
- Central
- Eastern

Is this the same place you would have expected to be before the pandemic occurred? Yes/No(/Maybe) / comment box to explain further.

Thinking of the place in which you are living right now, would you describe it as being:

- Remote
- Rural
- Suburban
- Urban
- Large City (1 million people or more)
- Megacity (10 million people or more)

Do you expect that you will have to change locations within the next two weeks due to the pandemic?

- Yes
- No

- Uncertain

What was your employment status before the COVID-Pandemic (check all that apply)

- Unemployed by choice
- Unemployed, seeking work
- Retired
- Employed full-time
- Employed part-time
- Full-time student
- Part-time student
- Self-employed

What is the highest level of education that you have completed?

- Some school without high-school diploma
- High-school graduate
- Some college/university education
- Degree from a college or university
- Some post-graduate education
- Post-graduate degree

Which of the following best describes your current level of income?

- Does not allow me to meet my basic, everyday needs (e.g., food, housing)
- Allows me to meet my basic, everyday needs (e.g., food, housing), but not more
- Allows me to meet my basic, everyday needs (e.g., food, housing) with a little bit of money leftover
- Allows me to meet my basic, everyday needs (e.g., food, housing) with a moderate amount of money left over
- Allows me to meet my basic, everyday needs (e.g., food, housing) with a lot of money leftover
- I have enough to allow me to meet my basic, every day needs (e.g., food, housing) for the rest of my expected life, even without any additional income in the future

What best describes your source(s) of income? (check all that apply)

- Contract Work
- Hourly Wage (full time)
- Hourly Wage (part time or multiple jobs)
- Annual Salary
- Pension
- Insurance or Disability Benefits
- Personal Retirement Savings
- Trust Fund
- Investments
- Scholarship / Fellowship
- Student Loans

Using the following scale, please indicate how stable your household income usually was prior to COVID-19. (1 = Extremely unstable, 5 = Extremely stable)

Appendix E: LGBTQ+ Identity Concealment Measures

Intake:

How “out” are you about your sexual identity to the people you are living with right now?

Slider scale from “Not at all ‘out’” (1) to “Completely out” (10)

- Not Applicable

How “out” are you about your gender identity to the people you are living with right now?

Slider scale from “Not at all ‘out’” (1) to “Completely out” (10)

- Not Applicable

Daily:

Did you have to hide or deny any part of your sexual or gender identity today?

- Yes
- No

If Yes:

How often did you have to hide or deny your sexual identity today?

- Never or almost never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always or almost always (5)

How often did you have to hide or deny your gender identity today?

- Never or almost never (1)
- Sometimes (2)
- About half the time (3)
- Most of the time (4)
- Always or almost always (5)

Appendix F: Rejection of LGBTQ+ Identity Measures

Intake:

How supportive are the people you are living with right now of your sexual identity?

- Very supportive (1)
- Supportive (2)
- Somewhat supportive (3)
- Neither supportive or unsupportive (4)
- Somewhat unsupportive (5)
- Unsupportive (6)
- Very unsupportive (7)
- Not applicable

How supportive are the people you are living with right now of your gender identity?

- Very supportive (1)
- Supportive (2)
- Somewhat supportive (3)
- Neither supportive or unsupportive (4)
- Somewhat unsupportive (5)
- Unsupportive (6)
- Very unsupportive (7)
- Not applicable

Appendix G: LGBTQ+ Community Connectedness Measures

Intake Instructions:

The following questions are about LGBTQ community. By this, we don't mean any particular neighbourhood or social group, but a more general sense of community tied by LGBTQ identities.

How much do you agree with these statements based on your experiences during the past week?

Daily Instructions:

Please rate your agreement with each of the following based on how you feel today:

The LGBT Community Connectedness Scale (Frost & Meyer, 2012):

Response scale: Strongly Disagree (1), Disagree (2), Slightly Disagree (3), Neither Agree or Disagree (4), Slightly Agree (5), Agree (6), Strongly Agree (7)

Items:

- I feel that I am part of an LGBTQ community.
- Participating in the LGBTQ community is a positive experience for me.
- I feel a bond with the LGBTQ community.
- I am proud of the LGBTQ community.
- It is important for me to be politically active in the LGBTQ community.
- Problems faced by the LGBTQ community are also my own problems.
- I feel a bond with other members of the LGBTQ community.

Appendix H: Perceived Social Support Measures

Intake Instructions:

Thinking about the last 6 months of your life, how strongly do you agree with each of the following statements?

Daily Instructions:

Thinking of the past 24 hours, how strongly do you agree with each of the following statements?

Social Provisions Scale (Cutrona & Russell, 1987; MacKinnon, 2012):

Response Scale: Strongly Disagree (1), Disagree (2), Agree (3), Strongly Agree (4)

Intake Items:

- If something went wrong, nobody would help me. (R)
- I have family and friends who help me feel safe, secure and happy.
- There is someone I trust whom I would turn to for advice if I were having problems.
- There is no one I feel comfortable talking about problems with. (R)
- There is no one I feel close to. (R)
- There are people I can count on in times of trouble.

Daily Items:

- If something went wrong, nobody would help me. (R)
- I have family and friends who help me feel safe, secure and happy.
- There is no one I feel close to. (R)
- There are people I can count on in times of trouble.

Appendix I: Psychological Distress Measures

Intake Instructions:

Please answer the following questions based on how you have felt in the past week.

The 21-item Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995):

Response Scale: Did not apply to me at all (0), Applied to me to some degree or some of the time (1), Applied to me a considerable degree or a good part of the time (2), Applied to me very much or most of the time (3)

Items:

- I found it hard to wind down.
- I was aware of the dryness of my mouth.
- I couldn't seem to experience any positive feeling at all.
- I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion).
- I found it difficult to work up the initiative to do things.
- I tended to overreact to situations.
- I experienced trembling (e.g., in the hands).
- I felt that I was using a lot of nervous energy.
- I was worried about situations in which I might panic and make a fool of myself.
- I felt that I had nothing to look forward to.
- I found myself getting agitated.
- I found it difficult to relax.
- I felt down-hearted and blue.

- I was intolerant of anything that kept me from getting on with what I was doing.
- I felt I was close to panic.
- I was unable to become enthusiastic about anything.
- I felt I wasn't worth much as a person.
- I felt that I was rather touchy.
- I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat).
- I felt scared without any good reason.
- I felt that life was meaningless.

Daily Instructions:

Please read the following statements and indicate how much each one applied to you **today.**

Shortened Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995):

Response Scale: Did not apply to me at all (0), Applied to me to some degree or some of the time (1), Applied to me a considerable degree or a good part of the time (2), Applied to me very much or most of the time (3)

Items:

- I couldn't seem to experience any positive feeling at all.
- I tended to overreact to situations.
- I found it difficult to relax.
- I felt that I had nothing to look forward to.
- I felt I was close to panic.
- I found it difficult to work up the initiative to do things.
- I had difficulty concentrating on the things that needed my attention today.

- I couldn’t stop worrying about the future today.
- I felt completely alone.