

Online Social Connectedness, Resilience, and Well-Being Among Sexual
Minorities: The Mediating Roles of Compulsory Heterosexuality
and Internalized Heterosexism

by

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ABSTRACT

Sexual minorities use social media platforms at higher rates than heterosexual individuals, often to find and connect with other sexual minorities and the broader online LGBTQ+ community. These online connections may help normalize feelings and experiences as a sexual minority in a heterosexual-normed society by increasing exposure to more meaningful reference groups and helping to mitigate the negative impact of heterosexist norms. There has been relatively little research investigating online social connectedness (OSC) among sexual minority adults, the relation between OSC and positive psychological outcomes, and the role of OSC in lessening the impact of heterosexist norms. The goal of the present thesis was to examine the relation between OSC and positive psychological outcomes, and whether such a relation is mediated by compulsory heterosexuality (CH; i.e., heterosexist norms) and internalized heterosexism (IH; i.e., internalizing and accepting heterosexist norms). A sample of 298 sexual minority adults in the U.S. completed an online survey that included measures of OSC, CH, IH, and positive psychological outcomes including resilience, well-being, self-acceptance, and self-esteem. The hypothesized model, with CH and IH as serial mediators of the relation between OSC and positive psychological outcomes, along with a series of alternative models, were tested using structural equation modeling. Support was found for the hypothesized model, such that greater OSC predicted lower CH, which then predicted lower IH, which in turn predicted greater positive psychological outcomes. While several alternative models had adequate fit, the hypothesized model was best supported statistically and by previous literature. These findings provide insights into the psychological benefits of social media connections for sexual minorities and the potential

for OSC to lessen the impact of heterosexist norms. This study also adds to the existing literature regarding OSC and sexual minority adults, expanding the literature from primarily focusing on sexual minority youth. Future studies should be more socio-demographically diverse and longitudinal in nature in order to help better understand the directionality of the relationship between CH and IH. The present findings may also inform the development of interventions aimed at decreasing CH and IH, which future studies should investigate more fully.

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Introduction

The need to connect with others and experience feelings of belonging has long been understood to be a fundamental need for humans (Baumeister & Leary, 1995; Maslow, 1943). This is demonstrated in the social bonds humans form from the earliest stages of life (Ainsworth & Bell, 1970; Main & Solomon, 1986) and in the strong association between belongingness, psychological well-being, and feelings of self-worth (Leary, 2005; Williams, 2007). Affiliative motives may be especially fulfilled with the connections that are formed with similar others (Byrne & Griffitt, 1973), which is supported by the findings that people form social bonds with others based on even the trivial commonality of having similar first or last names (Jones et al., 2004) or similar fingerprints (Burger et al., 2004). The need to experience connections with others helps to explain the widespread adoption of social media, evidenced by the recent finding that over 70% of U.S. adults use at least one social media site (Auxier & Anderson, 2021). While there are a variety of reasons for using social networking sites, the ability to connect with other people may be a main contributor (Hoffman & Novak, 2012; Smith, 2011).

Although use of online social networking platforms has occurred across broad segments of the population, sexual minority individuals, including individuals who identify as Lesbian, Gay, Bisexual, Transgender, or Queer (LGBTQ+), have been found to use the internet and social media platforms at higher rates than their heterosexual counterparts (Gay, Lesbian, and Straight Education Network (GLSEN) et al., 2013; Seidenberg et al., 2017). For instance, according to a survey by GLSEN et al. (2013), 94% of LGBT youth spent time on the internet via a computer at home, with 77% of

them doing so for at least an hour per day. In research by Seidenberg et al. (2017), LGB participants had significantly greater odds of having social media accounts and of being a frequent internet user compared to heterosexual participants.

One explanation for this finding is that sexual minorities use the internet and social networking sites to connect with other sexual minorities, in particular. As an example, sexual minorities often use social media apps to find other sexual minorities in an effort to connect to the broader LGBTQ+ community online (Ceglarek & Ward, 2016; Craig & McInroy, 2014). For sexual minorities, online social connectedness— defined in this thesis as the idea that individuals use social media to find and connect with groups of similar others with whom they identify— may be especially beneficial. For instance, because sexual minorities are often stigmatized within immediate family or social environments (GLSEN et al., 2013; Gruberg et al., 2020), online connectedness to similar others, such as other members of the LGBTQ+ community, may be a crucial source of social support (Brandt & Carmichael, 2020; Craig & McInroy, 2014). Online social connections may also be important for acquiring information specific to the health and well-being of sexual minorities (McInroy et al., 2019) by helping sexual minorities access and share LGBTQ+ resources and explore different sexual identities alongside others who are also exploring their sexual identity (Craig & McInroy, 2014; GLSEN et al., 2013).

There is a surprising lack of empirical work investigating online social connectedness among (adult) sexual minorities (vs. youth) and the role connectedness to the online LGBTQ+ community via social media may play in promoting positive psychological outcomes. One study by Brandt and Carmichael (2020) had a sample of

men who have sex with men and found that social network support was positively associated with psychological well-being and feelings of mattering, but to my knowledge, no studies have included the broader LGBTQ+ adult community in looking at online social media connection. The goal of this thesis is to test a model examining the relationship between online social connectedness and positive psychological outcomes among sexual minority adults, adding to and expanding the literature from sexual minority youth to sexual minority adults.

Online Social Connectedness and Psychological Outcomes Among Sexual Minorities

Research examining the link between social media usage and mental health, in the general population, has yielded mixed results (see Verduyn et al., 2017, for a review). Some studies have found a negative association between social media use and mental health. For example, greater social media use has been linked with increased loneliness, depression, and anxiety (Miller, 2020; Reer et al., 2019) and poorer well-being and self-esteem (Çikrikci, 2016; Huang, 2010; Huang, 2017; Marino et al., 2018; Vogel et al., 2014). Further, in a study conducted over ten days, greater daily use of social media corresponded with lower subjective well-being, across multiple social media platforms (Facebook, Twitter, and Instagram) (Wirtz et al., 2020).

Other studies, however, have found a positive link between social media usage and mental health (Grieve et al., 2013; Mackson et al., 2019), particularly when individuals are seeking connectedness with others (Ahn & Shin, 2013; Chen, 2011), when they are using mobile social media apps to communicate and self-disclose (Chen & Li, 2017), or when their fear of missing out (FoMO) motivates social media usage that fosters connection with family or friends (Roberts & David, 2019). For sexual minorities,

the relation between online social connectedness and well-being may also be less equivocal and more consistently positive.

Online Social Connectedness as a Source of Identity-Related Support

Why might online social connectedness promote positive psychological outcomes, such as resilience, well-being, self-acceptance, and self-esteem, among sexual minorities? One explanation pertains to the distinct identity challenges that sexual minorities face and the role online social connectedness may play in helping sexual minorities address these challenges. According to Cass's (1979) homosexual identity formation model, interactions with the environment and others influence and help create and solidify one's homosexual identity. For example, interactions with the LGBTQ+ community help solidify one's identity within the LGBTQ+ community. Further, as they interact with the LGBTQ+ community and find others who are like themselves, they will be influenced and inspired to act in a manner consistent with their specific identity within the LGBTQ+ community.

The benefits of online social connectedness for identity development among sexual minorities is supported by the finding that the majority of LGBT youth participate in online LGBT communities and have social media accounts, where the internet is often a place they hear positive messages about being LGBT (HRC, 2012). Relatedly, isolation, lack of support, and lack of resources available to sexual minority teens and adolescents have been found to be related to greater psychological distress and to be an underlying factor regarding completed suicides (see Wilson & Cariola, 2020, for a review). Additionally, in a study by Brandt and Carmichael (2020), sexual minority men were more likely to interact with similar others through computer-mediated communication

than through in-person communication, and this identity-related support from others with similar identities was associated with higher psychological well-being and higher perceptions of mattering. Finally, Craig and McInroy (2014) found through interviews with LGBTQ+ young adults that being online allows individuals to access resources, explore multiple identities and communities, and rehearse tasks (such as coming out) online, where there may be less to lose, before doing so in-person. In light of these findings, I propose that online social connectedness to other sexual minority individuals and groups helps sexual minorities identify with and connect with a meaningful reference group. Especially for individuals who are still in the closet and have not yet come out, being able to find people and groups on social networking sites that they can follow on private accounts will help expose them to others who are like them.

Online Social Connectedness and the Shared Experience of Stigma

Given the chronic experience of sexual minority stigma, online social connectedness might also help provide a way to connect for those who are otherwise isolated. According to Herek et al. (2007), sexual stigma is “society’s shared belief system through which homosexuality is denigrated, discredited, and constructed as invalid relative to heterosexuality” (p. 171). In other words, it is being marked and treated as an “other” due to one’s sexual orientation. Sexual minorities are often stigmatized for their sexual orientation and feelings of disgust and dislike are often made explicitly known (Kiss et al., 2020; Lick & Johnson, 2016; Morrison et al., 2019; O’Handley et al., 2017). Online social connections can provide exposure to new (i.e., non-heterosexual) norms (Ceglarek & Ward, 2016; Selkie et al., 2019), buffer against the effects of internalized self-hatred (Puckett et al., 2015), and provide a platform for connecting with

other sexual minorities who function as a more meaningful reference group (Brandt & Carmichael, 2020; Craig & McInroy, 2014), helping to protect against the negative impact of sexual minority stigma.

Online Social Connectedness as a Buffer against Heterosexist Norms

For sexual minorities, online social connectedness might also help alleviate the negative impact of chronic exposure to heterosexist norms. A recent study consisting of four experiments by Thorne et al. (2021) found that while heterosexual participants were able to classify concepts of romantic love equally across heterosexual and non-heterosexual couples, they found it more cognitively effortful to do so for examples of non-heterosexual couples. The authors suggest that heterosexist norms may be manifested at the cognitive level, shown by how hard it was for participants to access similar concepts of love across diverse types of romantic couples when under time pressure. While heterosexist norms have been found to be the norm on even a cognitive level, online social connectedness might provide greater exposure to non-heterosexual norms. This exposure, in turn, may make it easier to cognitively access non-heterosexual norms and thus limit the negative effects of heterosexual norms on non-heterosexual individuals.

Compulsory Heterosexuality. One possible explanation for the relationship between online social connectedness and positive psychological health is compulsory heterosexuality. *Compulsory heterosexuality* refers to the belief that heterosexuality is innate and enforced by society through patriarchal norms, with noncompliance viewed as deviant and punishable by society (Rich, 1980). Compulsory heterosexuality is often interchanged with heterosexism, with compulsory heterosexuality drawing more attention

to the fact that heterosexuality is *forced and expected* (i.e., compulsory) as the norm upon the majority of people in society. Heterosexism and compulsory heterosexuality definitions often encompass three components: an attitudinal component (e.g., feelings of disgust or disapproval directed toward individuals who do not adhere to the norms), a beliefs component (e.g., the view that sexual minorities can be converted to heterosexuality through conversion therapy), and a behavioral component (e.g., name-calling involving slurs or advocating to make same-sex marriage illegal) (Herek, 1995).

Heteronormativity is another related but broader term, with many definitions and meanings depending upon one's interpretation (see Marchia & Sommer, 2019, for a review). Rubin (1984, 1993) takes the concept and definition of heteronormativity and includes gender, drawing attention to the intersection between gender and sexuality. For this study, sexuality is viewed as a social construct, heterosexuality is the norm, and compulsory heterosexuality is the enforcing of heterosexuality as the norm in all aspects of society and life. Drawing on the definitions of both Rich (1980) and Rubin (1984, 1993), my interpretation of compulsory heterosexuality includes ideas about gender and gender-normative-related beliefs.

Despite the term's increasing popularity in mainstream culture, compulsory heterosexuality has not been widely studied. When it has been studied, it is often as the behavioral component of heterosexism rather than the attitude or belief components. For instance, Woodford et al. (2014) conducted a study with current or recently graduated (within past year) college students to investigate heterosexism on college campuses. Their measure of heterosexism included blatant victimization (both verbal and physical), interpersonal microaggressions (i.e., being told LGBTQ+ is "just a phase"), and

environmental microaggressions (“it’s okay to make LGBTQ+ jokes at work/school”). They found that greater instances of victimization and microaggressions (i.e., heterosexism) was associated with increased psychological distress and decreased self-acceptance.

Szymanski and colleagues (2005, 2009, 2014) have studied the behavioral component of heterosexism the most widely, often measuring heterosexism through sexual orientation-based hate crimes or heterosexist harassment, rejection, and discrimination. Across studies, they have consistently found a positive relationship between instances of heterosexism and psychological distress among sexual minority women (see Szymanski, 2005; Szymanski & Owens, 2009, for examples). In a study of sexual minority women by Szymanski and Henrichs-Beck (2014), they found that the frequency of experiencing heterosexist harassment, rejection, and discrimination was a unique predictor of psychological distress, such that higher frequency was associated with greater psychological distress.

One possibility is that online social connectedness with the LGBTQ+ community may correspond with greater well-being and positive psychological outcomes because it provides sexual minorities with access to non-heterosexual norms, attitudes, and beliefs. That is, by providing exposure to more relevant normative information, online social connectedness may help decrease the degree to which heterosexist attitudes and beliefs affect sexual minority individuals.

Internalized Heterosexism. Internalized heterosexism is another possible explanation for the relationship between online social connectedness and psychological health for sexual minorities. *Internalized heterosexism* is when one internalizes, accepts,

and believes the norms they have been taught regarding heterosexuality as the only acceptable option (CH), leading to feelings of dislike or hatred towards themselves regarding their “deviant” feelings towards others of the same sex (Herek et al., 2009; Mason et al., 2015). In other words, they believe something is inherently wrong with them due to their non-heterosexual identity and that in order to be fully accepted by society and perhaps their family and friends, they feel the need to act straight and only enter into heterosexual presenting relationships, despite how unhappy this may make them feel personally.

Several studies have looked at internalized heterosexism and community connectedness, often finding a negative relationship between the two (Frost & Meyer, 2009; McLaren & Castillo, 2020; Puckett et al., 2015; Sanscartier & MacDonald, 2019). In these studies, connectedness was most often measured using the Connectedness to the LGBT Community Scale (or a revised version of it) by Frost and Meyer (2009, 2012) and internalized heterosexism was measured in various ways, often using different scales with the same name, the Internalized Homophobia Scale (Wagner, 1998; Wright et al., 1999) or the Internalized Homonegativity subscale of the Lesbian, Gay, and Bisexual Identity Scale by Mohr and Kendra (2011). Participants varied greatly, from a community sample of participants recruited from local venues, businesses, and outdoor areas, to online samples and a convenience sample of sexual minority women. Yet all four studies found a negative relationship between community connectedness and internalized heterosexism, such that as connectedness increased, internalized heterosexism decreased (Frost & Meyer, 2009; McLaren & Castillo, 2020; Puckett et al., 2015; Sanscartier & MacDonald, 2019). These studies highlight the pervasiveness of internalized heterosexism and how

community connectedness is an important and helpful tool for reducing the negative impact internalized heterosexism has on sexual minorities.

Internalized heterosexism has been associated with poorer psychological health, including relationship problems, symptoms of depression and anxiety (Frost & Meyer, 2009; Newcomb & Mustanski, 2010; Szymanski et al., 2008), psychological distress (Szymanski & Henrichs-Beck, 2014; Szymanski et al., 2008), poorer self-esteem and lower social support (Szymanski et al., 2008), and increased substance abuse (Brubaker et al., 2009). Thus, I expect that sexual minorities who use social media to connect with other sexual minorities to a greater extent will report lower levels of internalized heterosexism, because their online social connectedness provides exposure to norms and beliefs that counteract compulsory heterosexuality. I also expect greater internalized heterosexism to be associated with poorer psychological health.

Present Study

To summarize, for sexual minorities, online social connectedness may just not be about making friends and forming social bonds, but it may also play a crucial role in mitigating the harmful effects of compulsory heterosexuality and internalized heterosexism, which may foster greater self-acceptance and predict greater resilience and well-being. The purpose of this proposed study is thus to test a model (shown below in Figure 1) in which the relationship between online social connectedness and positive psychological outcomes (resilience, well-being, self-acceptance, and self-esteem) is mediated by compulsory heterosexuality and internalized heterosexism.

My proposed model is loosely informed by the media practice model, developed by Steel and Brown (1995). According to the model, adolescents are active users of

media, choosing what to partake in and follow, working to integrate the meanings into their everyday lives. Sociocultural elements such as race and sexuality, as well as culture and family religion, influence what is interpreted and applied. Ones' understanding of who they are and want to become affects what media is absorbed and at what intensity while also influencing their sense of self (Steel & Brown, 1995). Although the focus of my thesis is not on adolescents, the media practice model provides helpful insights about how social media is used today. As sexual minorities are able to actively seek out and follow LGBTQ+ friendly groups and other sexual minority individuals/celebrities, these social media accounts are able to influence individuals and help to combat the messages of compulsory heterosexuality and feelings of internalized heterosexism experienced in everyday life by sexual minorities.

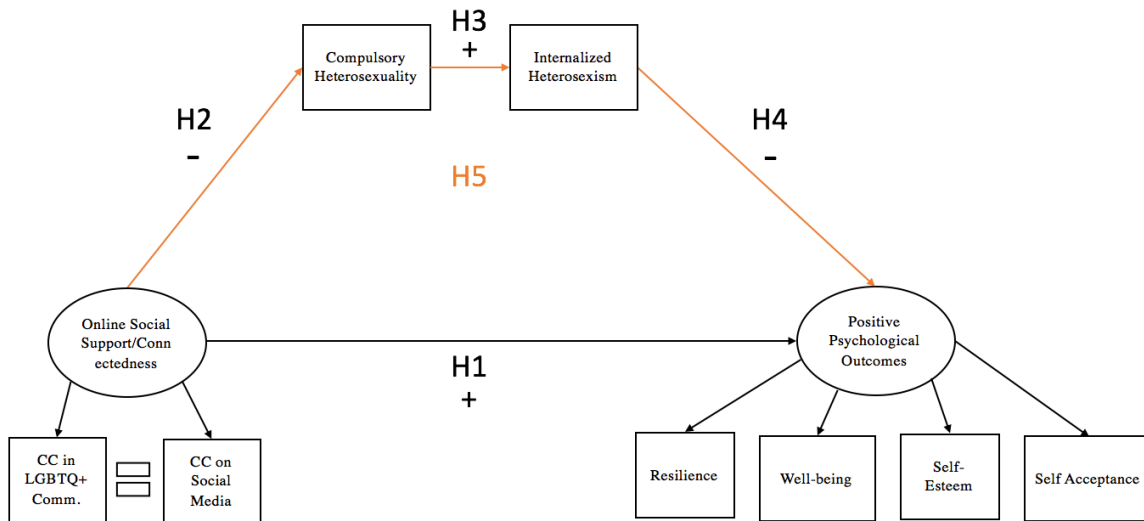


Figure 1. Proposed SEM model pathways and expected relationships.

Specifically, I hypothesize that online social connectedness will have a positive relationship with positive psychological outcomes, such that as levels of online social connectedness increase, so too will levels of positive psychological outcomes such as

resilience and well-being (H1). Second, I hypothesize that online social connectedness will have a negative relationship with compulsory heterosexuality, such that as online social connectedness increases, I expect compulsory heterosexuality attitudes and beliefs to decrease (H2). Third, I hypothesize that compulsory heterosexuality and internalized heterosexism will have a positive relationship with each other such that as compulsory heterosexuality attitudes and beliefs decrease, so too will levels of internalized heterosexism (H3). Fourth, I hypothesize that internalized heterosexism will have a negative relationship with positive psychological outcomes such that as levels of internalized heterosexism decrease, positive psychological outcomes will increase (H4). Finally, I hypothesize that the relationship between online social connectedness and positive psychological outcomes will be serially mediated by levels of compulsory heterosexuality and internalized heterosexism, such that greater online social connectedness will lead to lower compulsory heterosexuality, which will in turn lead to lower levels of internalized heterosexism, ultimately leading to greater positive psychological outcomes (H5).

As depicted in Figure 1, online social connectedness is the key predictor variable in the model. Compulsory heterosexuality and internalized heterosexism, the proposed mediators, are measured as single-measure constructs. The outcome variable is a latent factor, called positive psychological outcomes, which consists of a single measure each of resilience, well-being, self-acceptance, and self-esteem.

Method

Participants were recruited and completed a 15-20-minute survey through Prolific. They were compensated \$2.85 USD, an amount determined by Prolific to be equivalent

to a rate of \$9.50 USD per hour. Informed consent was obtained prior to the survey and all data collected was anonymous.

Participants

After dropping 2 participants due to indicating being heterosexual, there were 298 self-identified sexual minority participants. Overall, participants were young ($M = 27.43$, $SD = 8.52$), identified as cisgender male (26.8%) or cisgender female (51.3%), identified as lesbian, gay, or bisexual (78.2%), White (71.1%), and educated, with 88% having at least some college experience. See Table 1 for demographic information. A majority of the participants indicated being out of the closet (71%) on a yes/no item, but the degree of outness varied based on whether it was a family member, friend, work peer/boss, or religious individual (see Table 2). Participants indicated using about 4 social media apps ($M = 3.96$, $SD = 1.89$), with over 50% of participants reporting using Instagram (64.1%), YouTube (61.4%), and Twitter (54.4%), followed by Reddit (45.3%) and Facebook (40.3%) rounding out the top five. 80.5% of participants indicated using social media either daily, a couple of times per day, or several times throughout the day, and 86% of participants indicated actively using social media between 1-6 hours per day.

Table 1
Demographic Information for Sample (N = 298)

	<i>M</i>	<i>SD</i>	<i>Range</i>	<i>n (%)</i>
Age	27.43	8.52	18-75	
Gender				
Cisgender Male				80 (26.8%)
Cisgender Female				153 (51.3%)
Non-binary or gender fluid				39 (13.1%)
Transgender Male				7 (2.3%)
Transgender Female				6 (2.0%)
Prefer not to answer				4 (1.3%)
Other				9 (3.0%)

Sexual Orientation

Lesbian	33 (11.1%)
Gay	43 (14.4%)
Bisexual	157 (52.7%)
Asexual	16 (5.4%)
Pansexual	29 (9.7%)
Demisexual	7 (2.3%)
Other	13 (4.4%)

Race

White	212 (71.1%)
Black or African American	21 (7.0%)
American Indian/Alaskan Native	6 (2.0%)
Asian/Asian American	41 (13.8%)
Native Hawaiian or Pacific Islander	1 (0.3%)
Other	17 (5.7%)

Education

Less than high school degree	6 (2.0%)
High school/GED	30 (10.1%)
Some college but no degree	98 (32.9%)
Associate degree in college	33 (11.1%)
Bachelor's degree in college	97 (32.6%)
Graduate degree	34 (11.4%)

Annual Household Income

Less than \$25,000	82 (27.5%)
\$25,000 – \$34,999	46 (15.4%)
\$35,000 – \$49,999	37 (12.4%)
\$50,000 – \$74,999	51 (17.1%)
\$75,000 – \$99,999	19 (6.4%)
\$100,000 – \$149,999	43 (14.4%)
\$150,000 – \$199,999	10 (3.4%)
More than \$200,000	9 (3.0%)

Table 2*Outness Inventory Means and Standard Deviations*

Out to:	<i>M</i>	<i>SD</i>
Mother	3.32	1.94
Father	2.46	1.96
Siblings (sisters, brothers)	3.07	2.14
Extended family/relatives	2.19	1.56
New straight friends	3.20	2.09
Work peers	2.05	1.94
Work supervisor(s)	1.71	1.76

Members of religious community	0.68	1.33
Leaders of religious community	0.53	1.10
Strangers, new acquaintances	2.22	1.55
Old straight friends	3.75	1.92

Note. 1 = Person definitely does NOT know about your sexual orientation status, 2 = person might know about your sexual orientation status, but it is NEVER talked about, 3 = person probably knows about your sexual orientation status, but it is NEVER or RARELY talked about, 4 = person definitely knows about your sexual orientation status, but it is RARELY talked about, 5 = person definitely knows about your sexual orientation status, and it is SOMETIMES talked about, 6 = person definitely knows about your sexual orientation status, and it is OPENLY talked about, 0 = not applicable to your situation, there is no such person or group of people in your life.

Measures

Online Social Connectedness. Connectedness to the online LGBTQ+ community was measured using two scales: an adapted version of the 8-item Connectedness to the LGBT Community Scale (CLGBTCS; Frost & Meyer, 2012) and an adapted version of the 5-item Connectedness on Twitter Scale (Chen, 2011). The Connectedness to the LGBT Community Scale originally asked participants how connected they felt to New York City’s LGBT community. For the present study, the wording was changed to be more inclusive and to reflect the broader *online* LGBTQ+ community. As an example, the item “You are proud of NYC’s LGBT community” was changed to “I am proud of the online LGBTQ+ community.” Further, following Sanscartier and MacDonald (2019), the eighth item (“You feel a bond with [same gendered similar others]”) was not included as it is hard to re-word for a gender-diverse sample, which applies to the sample here. Responses were measured on a 5-point scale (*1 = strongly agree, 5 = strongly disagree*). All items were reverse-coded and a mean score was created so that higher scores indicate higher online LGBTQ+ community connectedness. Reliability for the current study was good at $\alpha = .88$.

The 5-item Connectedness on Twitter scale (Chen, 2011), which originally asked participants how connected they feel on Twitter, was modified to reflect connectedness on social media, in general, and to be about the LGBTQ+ community. As an example, the item “I feel I am connected to other users on Twitter” was changed to “I feel I am connected to other LGBTQ+ users on social media.” Responses were measured on a 5-point scale (*1 = strongly disagree, 5 = strongly agree*). A mean score was created, with higher scores indicating higher social media connectedness, with a good reliability of $\alpha = .87$. For the sole purpose of this study and from this point forward, this scale will be referred to as the Connectedness on Social Media (CSM) scale.

Positive Psychological Outcomes. The dependent variable consisted of four indicators: resilience, overall well-being, self-acceptance, and self-esteem.

Resilience. Resilience was measured using the 9-item Resilience Evaluation Scale (RES; van der Meer et al., 2018). This measure includes statements such as “I can easily adjust in a difficult situation” and has participants rate agreement on a 5-point scale (*1 = completely disagree, 5 = completely agree*). A mean score was created, with higher scores indicating higher levels of resilience, and reliability was found to be excellent at $\alpha = .93$.

Well-Being. Well-being was measured using the 29-item Well-Being Scale (WeBS; Lui & Fernando, 2018), which assess well-being across five primary areas: financial well-being (e.g., “I feel in control of my finances”), physical well-being (e.g., “I take good care of my physical health”), social well-being (e.g., “I have someone who knows me well to talk to when I have problems”), eudaimonic well-being (e.g., “I believe I have the potential to reach my goals”), and hedonic well-being (e.g., “I try to do

things that make me happy”). Participants rated level of agreement on a 6-point scale, where 1 = *Strongly Disagree* and 6 = *Strongly Agree*. Whereas the items assessing each of these facets of well-being can be treated as distinct subscales, the WeBS was also designed as an overall index of well-being (Lui & Fernando, 2018; see also Pham, 2020). A mean score was thus created of all items, with higher scores indicating higher levels of well-being, and the reliability was found to be excellent at $\alpha = .94$.

Self-Acceptance. Self-acceptance was measured using the 20-item Unconditional Self-Acceptance Questionnaire (USAQ; Chamberlain & Haaga, 2001). This measure includes statements such as “I feel worthwhile even if I am not successful in meeting certain goals that are important to me”. The current study had the items on a 5-point scale from “Strongly disagree” (1) to “Strongly agree” (5), as the original scale points were thought to be confusing (1 = *Almost always untrue*, 7 = *Almost always true*). Due to poor reliability of the scale found in the current study ($\alpha = .37$), 5-items were chosen out of the original 20-items (see appendix B for a list of all items) based on face validity to be used instead. An average was created of just these five items and their reliability found to be good at $\alpha = .87$.

Self-Esteem. The 10-item Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was used to measure self-esteem, which was expected to be strongly positively correlated with, yet distinct from, resilience, well-being, and self-acceptance. Items include “I feel that I am a person of worth, at least on an equal basis with others,” and had participants indicate agreement on a 5-point scale (1 = *strongly agree*, 5 = *strongly disagree*). All items were reverse-coded and a mean score was created such that higher scores indicated higher self-esteem. Reliability for the current study was excellent at $\alpha = .93$.

Compulsory Heterosexuality. Compulsory heterosexuality was measured using the 20-item Heteronormative Attitudes and Beliefs Scale (HABS; Habarth, 2015), which consists of two subscales. The Essential Sex and Gender Subscale asks about beliefs regarding binary categories of gender and sex, and the Normative Behaviour Subscale asks about expectations regarding women and men in sexual or romantic relationships. Sample items for each subscale are “There are only two sexes: male and female,” and “There are particular ways that men should act and particular ways that women should act in relationships,” respectively. The original measure consisted of 16 items but has four suggested items to be included to help determine if participants are able to distinguish between the terms “sex” and “gender.” These four items were included in this study. Items were measured on a 7-point scale (*1 = strongly disagree, 7 = strongly agree*). Relevant items were reverse-coded and a mean score was created, with higher scores indicating higher agreement with heteronormative attitudes and beliefs (i.e., a higher degree of compulsory heterosexuality). Cronbach’s alpha for the total scale showed excellent reliability ($\alpha = .91$).

Internalized Heterosexism. Internalized heterosexism was measured using the 11-item Personal Homonegativity subscale of the Internalized Homonegativity Inventory (IHNI; Mayfield, 2001). This measure includes items such as “I sometimes resent my sexual orientation” and has participants indicate agreement on a 6-point scale (*1 = strongly disagree, 6 = strongly agree*). The measure was created specifically for gay men and so some of the wording was changed to be inclusive of all members of the LGBTQ+ community. As an example, “Sometimes I get upset when I think about being attracted to men” was changed to “Sometimes I get upset when I think about being attracted to

[men/women/both/neither].” A mean score was created, with higher scores indicating higher internalized heterosexism. Reliability was found to be excellent, at $\alpha = .93$.

Covariates

Outness. Participants were asked about their current degree of outness, using the 10-item Outness Inventory (Mohr & Fassinger, 2000). This measure asks participants how out they are to family members, the world, and religious figures on a 6-point scale (*1 = person definitely does NOT know about your sexual orientation status, 6 = person definitely knows about your sexual orientation status and it is OPENLY talked about, with 0 for any items participants deemed as “not applicable”*). Because the majority of the sample did not identify as religious, a mean score was taken for just the outness to world and family items, with higher scores indicating a higher degree of outness. The reliability of these items was found to be good ($\alpha = .83$).

Percent of friends and family part of LGBTQ+ community. Participants were asked to report the percentage of their close friends and family who identify as sexual minorities on a sliding scale from 0 to 100. Higher scores indicate a higher percentage of those among their close friends and family who are sexual minorities.

Social media usage. Social media usage was measured using a 7-item measure of active and passive social media use created by Escobar-Viera et al. (2018). Participants were asked how often they engaged in certain behaviors while using any social media site on a 6-point scale (*1 = Never, 6 = Several times a day*), with sample items including “read comments/reviews” and “comment on or respond to someone else’s content.” For the current study, a mean of all items was calculated, with higher scores representing higher amounts of social media usage. Reliability was found to be acceptable at $\alpha = .79$.

Impact of COVID-19 on well-being. Participants were asked to indicate how positively or negatively the impact of the COVID-19 pandemic had three aspects of well-being (happiness and well-being, physical health, psychological or mental health), on a 7-point scale (*1 = Extremely negative impact, 7 = Extremely positive impact*). Given good reliability ($\alpha = .82$), a mean score was created with higher scores indicating a more positive impact of the COVID-19 pandemic on well-being.

Impact of COVID-19 on social media use. Participants were asked to indicate how positively or negatively the impact of the COVID-19 pandemic had impacted three aspects of social media use (degree of activity on social media, amount of time spent on social media, the people one interacts with on social media) on a 7-point scale (*1 = Extremely negative impact, 7 = Extremely positive impact*). Given acceptable reliability ($\alpha = .73$), a mean score was created with higher scores indicating a more positive impact of the COVID-19 pandemic on social media usage.

Age, gender, and racial/ethnic minority status. Age was measured as a continuous variable. Participants indicated their gender from the following options: cisgender male, cisgender female, non-binary or gender fluid, transgender male, transgender female, prefer not to answer, other. For inclusion as a covariate in the analyses below, gender was recoded so that 1 = cisgender male or cisgender female ($n = 233$), and 2 = non-binary or gender fluid, transgender male, and transgender female ($n = 52$), with “other” and “prefer not to answer” filtered out. Ethnic and racial minority status was assessed with two items. First, participants indicated their ethnicity as either Hispanic/Latinx or Non-Hispanic/Non-Latinx. Then, participants indicated their race from the following items: White, Black or African American, American Indian or

Alaskan Native, Asian or Asian American, Native Hawaiian or Pacific Islander, Other. For inclusion as a covariate in the analyses below, ethnic and racial minority status was combined and recoded so that if participants indicated their ethnicity as Hispanic/Latinx, and/or if they identified their race as something other than White, they were coded as 1, while participants who indicated both non-Hispanic/non-Latinx *and* White were coded as 0.

Table 3
Means, Standard Deviations, and Reliabilities of All Variables in the SEM Analysis

Variable	<i>M</i>	<i>SD</i>	α
Online Social Connectedness			
1. CLGBTCS	3.57	0.73	.88
2. CSM	3.45	0.94	.87
Mediators			
3. CH	1.93	0.82	.91
4. IH	3.21	0.95	.93
Positive Psychological Outcomes			
5. Resilience	3.49	0.85	.93
6. Well-being	4.28	0.84	.94
7. Self-accept	3.25	1.03	.87
8. Self-esteem	3.21	0.95	.93
Covariates			
9. Friends/family	31.55	25.19	-
10. SM Use	4.04	0.95	.79
11. Outness	2.53	1.28	.83
12. COVID SM	3.85	1.04	.73
13. COVID WB	4.93	1.21	.82
14. Race/ethnicity	0.33	0.47	-
15. Gender	1.18	0.39	-
16. Age	27.43	8.52	-

Note. CLGBTCS = Connectedness to LGBT Community Scale; CSM = Connectedness on Social Media; CH = Compulsory Heterosexuality; IH = Internalized Heterosexism; Friends/family = Percentage of friends and family part of LGBTQ+ community; SM Use = Social media usage; COVID SM = Impact of COVID on social media use; COVID WB = Impact of COVID on well-being; Race/ethnicity (0 = White, 1 = minority); Gender (1 = cisgender, 2 = transgender/gender non-conforming).

Table 4*Bivariate Correlations of All Variables in the SEM Analysis*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Online Social Connectness															
1. CLGBTCS	-														
2. CSM	.66**	-													
Mediators															
3. CH	-.36**	-.23**	-												
4. IH	-.19**	-.14*	.23**	-											
Positive Psychological Outcomes															
5. Resilience	.09	.06	.10	-.32**	-										
6. Well-being	.14*	.13*	.09	-.31**	.72**	-									
7. Self-Accept	.10	.08	.11	-.27**	.71**	.66**	-								
8. Self-esteem	.13*	.10	.09	-.33***	.80***	.77***	.77***	-							
Covariates															
9. Friends/family	.18**	.21***	-.28***	-.15*	.02	.04	-.01	-.03	-						
10. SM Use	.32***	.36***	-.10	.03	-.07	-.09	-.08	-.08	.11	-					
11. Outness	-.02	-.01	-.13*	-.12*	-.002	-.04	-.003	-.05	.14*	-.10	-				
12. COVID SM	.02	-.03	-.01	.04	.002	.05	-.08	-.04	.01	.01	.03	-			
13. COVID WB	.07	.01	.01	.001	.01	.04	-.01	.04	.01	-.03	-.01	.29***	-		
14. Race/ethnic	-.06	-.01	-.01	.02	-.05	-.02	-.05	-.04	.02	.14*	.05	.01	-.09	-	
15. Gender	.02	-.004	-.08	-.13*	.01	-.001	-.01	-.04	.10	-.12*	.04	-.12	-.01	-.03	-
16. Age	-.02	.04	.06	.14*	-.09	.02	-.01	-.08	.07	-.05	.07	-.08	-.05	-.26***	-.12*

Note. CLGBTCS = Connectedness to LGBT Community Scale; CSM = Connectedness on Social Media; CH = Compulsory Heterosexuality; IH = Internalized Heterosexism; Friends/family = Percentage of friends and family part of LGBTQ+ community; SM Use = Social media usage; COVID SM = Impact of COVID on social media use; COVID WB = Impact of COVID on well-being; Race/ethnicity (0 = White, 1 = minority); Gender (1 = cisgender, 2 = transgender/gender non-conforming). * $p < .05$, ** $p < .01$, *** $p < .001$

Analytic Strategy

I first examined the means, standard deviations, reliabilities (see Table 3) and bivariate correlations (see Table 4) between key variables using SPSS v26. There was sufficient covariance among the variables, allowing me to proceed with testing the model using SEM. I conducted an SEM analysis using EQS v.6.4. Maximum likelihood estimation was used as the multivariate normality assumption was not violated. To make sure that the indicators properly loaded onto their respective factors, I tested measurement models as confirmatory factor analyses that only included the factors and their indicators for each model. Model fit (see Tables 5, 6) was assessed using the comparative fit index (CFI), the root mean square error of approximation (RMSEA), 95% confidence intervals, the standardized root mean square residual (SRMR), and AICs, with $CFI > .90$, $RMSEA < .08$, $SRMR < .08$, narrower 95% confidence intervals, and lower AIC values as the criteria for determining good fit. Rho's reliability coefficient is also reported for the measurement models, with $Rho > .80$ as showing good fit, given that Rho

is preferred for multiple latent factor models, whereas Cronbach's alpha is better for single factor models. Based on an $N:q$ ratio (where q represents the number of free parameter estimates) of 10:19, I would need 190 participants. In order to ensure I had sufficient statistical power for testing the model and to account for possible incomplete data, I recruited 300 participants. Finally, the hypothesized model was properly overidentified, with 36 known parameters to 19 unknown parameters.

Structural equation models. To test for indirect effects, I tested several serial mediation models with exogenous predictors and endogenous mediator and outcome variables. Because the data are cross-sectional, however, it is impossible to determine causality. There may be many plausible ways of ordering the variables and thus several alternative models were tested. In total, six models were tested. The first four include my hypothesized model (compulsory heterosexuality (CH) and internalized heterosexism (IH) as mediators, online social connectedness (OSC) as the predictor, and positive psychological outcomes as the outcome), and alternative model 1 as a reversed version of my hypothesized model (CH and IH as predictor variables, OSC as the mediator, and positive psychological outcomes as the outcome), alternative model 2 in which the order of the serial mediation pathway via CH and IH was reversed (i.e., the relationship between OSC and positive psychological outcomes is first mediated by IH and then by CH), and alternative model 3 (OSC as the predictor variable, CH, IH, and self-acceptance as mediators in a serial mediation, and positive psychological outcomes as the outcome). Additionally, I performed an exploratory analysis testing alternative model 4 with CH and IH combined into a single latent factor reflecting perceived stigma, with the covariances set equal to each other as there were only two indicators. For this model,

OSC was the predictor variable, perceived stigma was the mediator, and positive psychological outcomes was the outcome. Finally, alternative model 5 was tested as well, with perceived stigma as the predictor, OSC as the mediator, and positive psychological outcomes as the outcome.

Table 5

Values of Fit Statistics for Measurement and Structural Models without Covariates

Model	χ^2	df	RMSEA	CFI	SRMR	AIC	Rho
1	4.58***	8	0.00 [.00, .04]	1.00	0.02	-11.42	.90
2	29.31**	18	0.05 [.01, .08]	0.99	0.07	-6.69	
3	57.71***	17	0.09 [.07, .12]	0.97	0.11	23.71	
4	83.33***	18	0.11 [.09, .13]	0.94	0.12	47.33	
5	43.64***	18	0.07 [.04, .10]	0.98	0.08	7.64	
6	60.49***	17	0.09 [.07, .12]	0.96	0.10	26.49	.81
7	60.48	17	0.09 [.07, .12]	0.96	0.10	26.48	
8	60.48	17	0.09 [.07, .12]	0.96	0.10	26.48	

Note. Model 1 = measurement model with two latent factors- online social connectedness (OSC) and positive psychological outcomes; Model 2 = hypothesized model with OSC as an endogenous predictor, compulsory heterosexuality (CH) → internalized heterosexism (IH) as exogenous serial mediators, and positive psychological outcomes as the exogenous outcome; Model 3 = CH and IH as endogenous predictors, OSC as an exogenous mediator, and positive psychological outcomes as the exogenous outcome; Model 4 = OSC as an endogenous predictor, IH → CH as exogenous serial mediators, and positive psychological outcomes as the exogenous outcome; Model 5 = OSC as an endogenous predictor, CH, IH, and self-acceptance as exogenous serial mediators, and positive psychological outcomes as the exogenous outcome; Model 6 = measurement model with OSC, perceived stigma, and positive psychological outcomes as latent factors; Model 7 = OSC as an endogenous predictor, perceived stigma as an exogenous mediator, and positive psychological outcomes as the exogenous outcome; Model 8 = perceived stigma as an endogenous predictor, OSC as an exogenous mediator, and positive psychological outcomes as the exogenous outcome. * $p < .05$; ** $p < .01$ *** $p < .001$

Table 6

Values of Fit Statistics for Measurement Models and Structural Models with Covariates

Model	χ^2	df	RMSEA	CFI	SRMR	AIC	Rho
1	4.58***	8	0.00 [.00, .04]	1.00	0.02	-11.42	.90
2	69.14***	32	0.06 [.04, .08]	0.97	0.07	5.14	
3	76.60***	25	0.08 [.06, .10]	0.96	0.10	26.60	
4	124.71***	32	0.10 [.08, .12]	0.92	0.12	60.71	
5	87.07***	33	0.08 [.06, .09]	0.96	0.08	21.07	
6	60.49***	17	0.09 [.07, .12]	0.96	0.10	26.49	.81
7	129.65**	61	0.06 [.05, .08]	0.94	0.09	7.65	
8	117.20**	51	0.07 [.05, .08]	0.95	0.09	15.20	

Note. Model 1 = measurement model with two latent factors- online social connectedness (OSC) and positive psychological outcomes; Model 2 = hypothesized model with OSC as an endogenous predictor, compulsory heterosexuality (CH) → internalized heterosexism (IH) as exogenous serial mediators, and positive psychological outcomes as the exogenous outcome; Model 3 = CH and IH as endogenous

predictors, OSC as an exogenous mediator, and positive psychological outcomes as the exogenous outcome; Model 4 = OSC as an endogenous predictor, IH → CH as exogenous serial mediators, and positive psychological outcomes as the exogenous outcome; Model 5 = OSC as an endogenous predictor, CH, IH, and self-acceptance as exogenous serial mediators, and positive psychological outcomes as the exogenous outcome; Model 6 = measurement model with OSC, perceived stigma, and positive psychological outcomes as latent factors; Model 7 = OSC as an endogenous predictor, perceived stigma as an exogenous mediator, and positive psychological outcomes as the exogenous outcome; Model 8 = perceived stigma as an endogenous predictor, OSC as an exogenous mediator, and positive psychological outcomes as the exogenous outcome. * $p < .05$; ** $p < .01$ *** $p < .001$

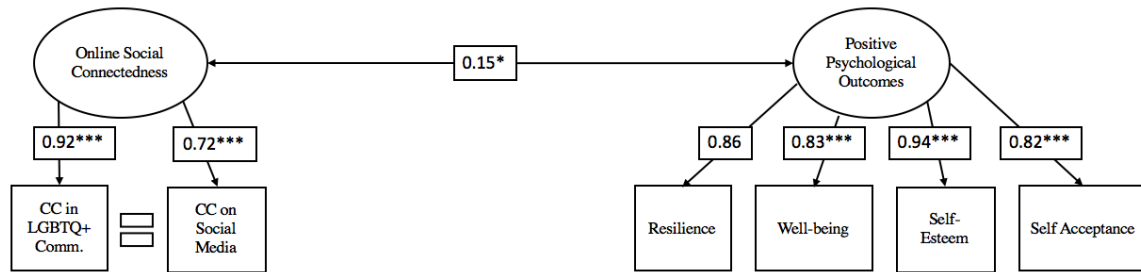


Figure 2. Measurement Model 1. Standardized estimates for the hypothesized measurement model using SEM analysis; significance levels for these paths are based on the unstandardized estimates as EQS does not provide standard errors to conduct significance tests for standardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Measurement model. I first constructed a measurement model with the two latent factors in Figure 2. All factor loadings were significant and resilience was fixed at 1.0 because it was predicted to be the strongest indicator of positive psychological outcomes. Because the covariance between the latent variables was significant and the model showed good fit (CFI = 1.00, RMSEA = .00, 95% CI [.00, .04]; SRMR = .02, Rho = .90), I proceeded to the covariate and structural models. For all models, I tested versions with and without covariates. Overall, the models without covariates typically had better fit than the models with covariates, as determined by comparing AICs. Thus, the models described below are models without covariates.

Hypothesized model. I first tested an SEM with OSC predicting positive psychological outcomes, with this relationship serially mediated by CH and IH. In this section I report unstandardized path estimates (see Figure 3 for the SEM model with standardized estimates). Consistent with my hypothesis, OSC predicted lower levels of

CH ($B = -0.30, SE = 0.05, p < .001$); lower levels of CH predicted lower levels of IH ($B = 0.28, SE = 0.07, p < .001$); lower levels of IH ($B = -0.25, SE = 0.04, p < .001$) predicted greater levels of positive psychological outcomes, and there was a significant direct effect of OSC on positive psychological outcomes ($B = 0.11, SE = 0.05, p < .05$). This total effect was driven by a significant indirect effect by way of both CH and IH: greater OSC predicted lower CH, which then predicted lower IH, which in turn predicted greater positive psychological outcomes ($B = 0.02, SE = 0.01, p < .01$).

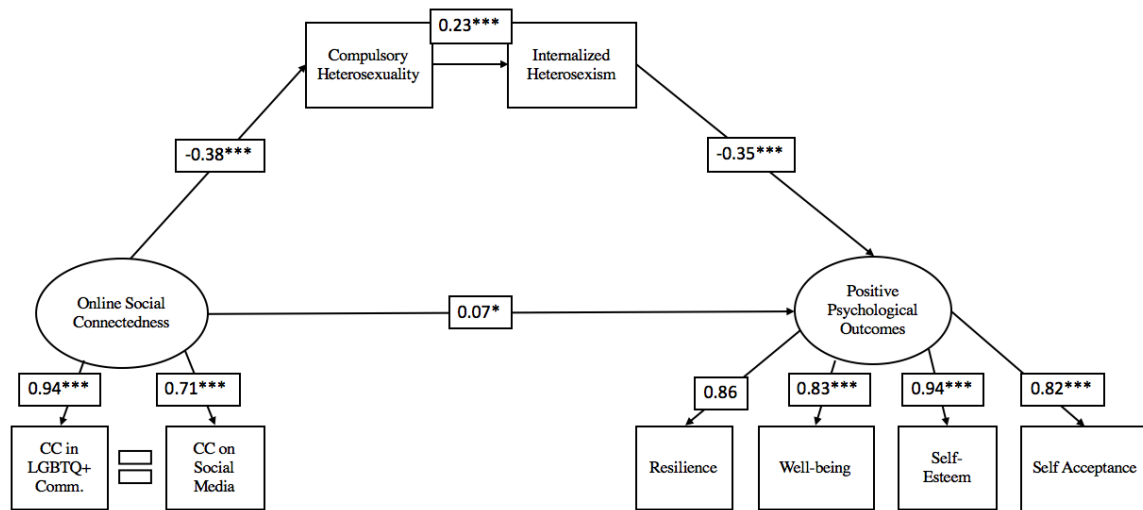


Figure 3. Hypothesized Model. Standardized estimates for the hypothesized structural model using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Alternative model 1: CH and IH as predictors of OSC. Because the data are cross-sectional, it is plausible that levels of CH and IH predict OSC, which then predicts positive psychological outcomes. To investigate this possibility, I tested a reversed version of my hypothesis model (i.e., CH and IH as predictors, OSC as a mediator, and positive psychological outcomes as the outcome; see Figure 4). When reversed, CH predicted lower OSC ($B = -0.65, SE = 0.12, p < .001$) while IH did not ($B = -0.17, SE =$

0.09, $p = .07$), and OSC predicted greater positive psychological outcomes ($B = 0.11$, $SE = 0.05$, $p < .05$). The indirect effect through OSC was significant for CH ($B = -0.04$, $SE = 0.02$, $p < .05$) but not for IH.

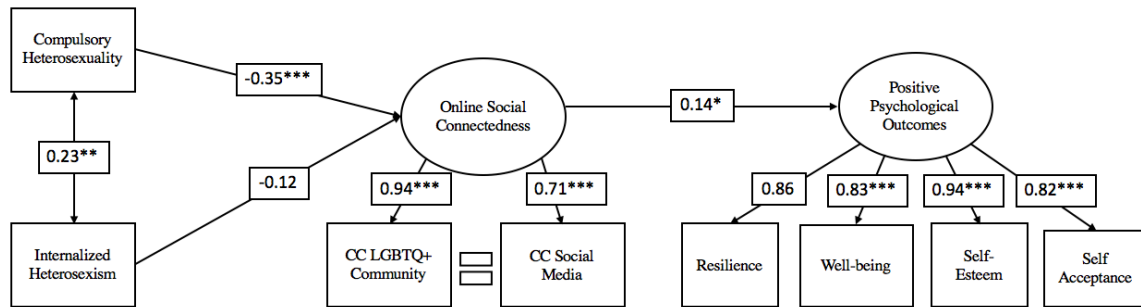


Figure 4. Alternative Model 1: CH and IH as predictors of OSC. Standardized estimates using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Alternative model 2: Reversed serial mediation. I tested another mode, alternative model 2, where the order of CH and IH as serial mediators were switched, so that OSC predicts IH, which then predicts CH, which then predicts positive psychological outcomes (see Figure 5). In this alternate model, greater OSC predicted lower IH ($B = -0.20$, $SE = 0.06$, $p < .01$); lower IH predicted lower CH ($B = 0.19$, $SE = 0.05$, $p < .001$); lower CH ($B = 0.17$, $SE = 0.05$, $p < .01$) predicted lower positive psychological outcomes, and there was a direct effect of OSC on positive psychological outcomes ($B = 0.11$, $SE = 0.05$, $p < .05$). This total effect was driven by a significant indirect effect by way of both IH and CH: greater OSC predicted lower IH, which then predicted lower CH, which then predicted greater positive psychological outcomes ($B = -0.01$, $SE = 0.003$, $p < .05$).

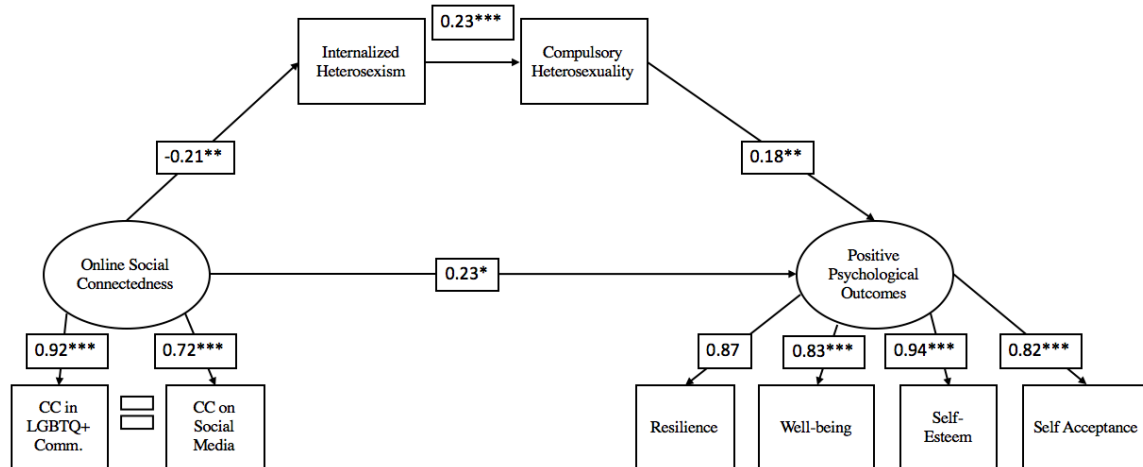


Figure 5. Alternative Model 2: Reversed Serial Mediation Model. Standardized using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Alternative model 3: Serial mediation with self-acceptance.

I also tested alternative model 3, where OSC is the predictor, CH, IH, and self-acceptance are serial mediators (in this order), and positive psychological outcomes- with just three indicators (i.e., resilience, well-being, and self-esteem- is the outcome (see Figure 6). In this model, greater OSC predicted lower CH ($B = -0.30, SE = 0.05, p < .001$); lower CH predicted lower IH ($B = 0.28, SE = 0.07, p < .001$); lower IH predicted greater self-acceptance ($B = -0.28, SE = 0.06, p < .001$); greater self-acceptance predicted greater positive psychological outcomes ($B = 0.58, SE = 0.03, p < .001$); and there was a direct effect of OSC on positive psychological outcomes ($B = 0.11, SE = 0.05, p < .05$). This total effect was driven by a significant indirect effect by way of CH, IH, and self-acceptance: higher OSC predicted lower CH, lower CH predicted lower IH, lower IH predicted greater self-acceptance, and greater self-acceptance predicted greater positive psychological outcomes ($B = 0.01, SE = 0.01, p < .05$).

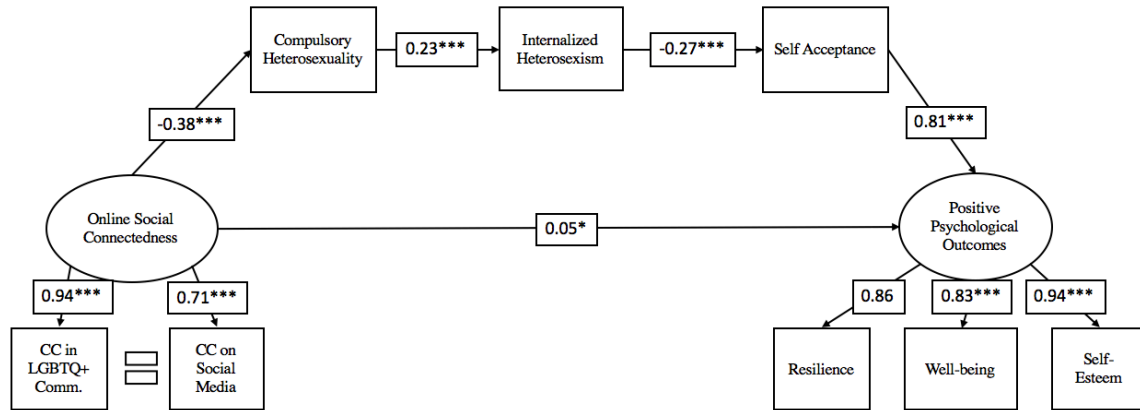


Figure 6. Alternative Model 3: Serial mediation with self-acceptance. Standardized estimates using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Due to the possibility that CH and IH have too much conceptual overlap, two additional alternative models were tested with CH and IH as indicators of a single perceived stigma latent factor. I again constructed a measurement model first, this time with the three latent factors shown in Figure 7. As indicators of the new perceived stigma latent factor, CH and IH were constrained to be equal to one another. All factor loadings were significant and resilience was fixed to 1.0 because it was predicted to be the strongest indicator of positive psychological outcomes. The covariances between OSC and perceived stigma ($p < .001$) and between OSC and positive psychological outcomes were significant ($p < .05$), but the covariance between perceived stigma and positive psychological outcomes was not significant ($p = .09$). The model showed good fit (CFI = .96, RMSEA = .09, 95% CI [.07, .12]; SRMR = .10, Rho = .81), so I proceeded to the structural models.

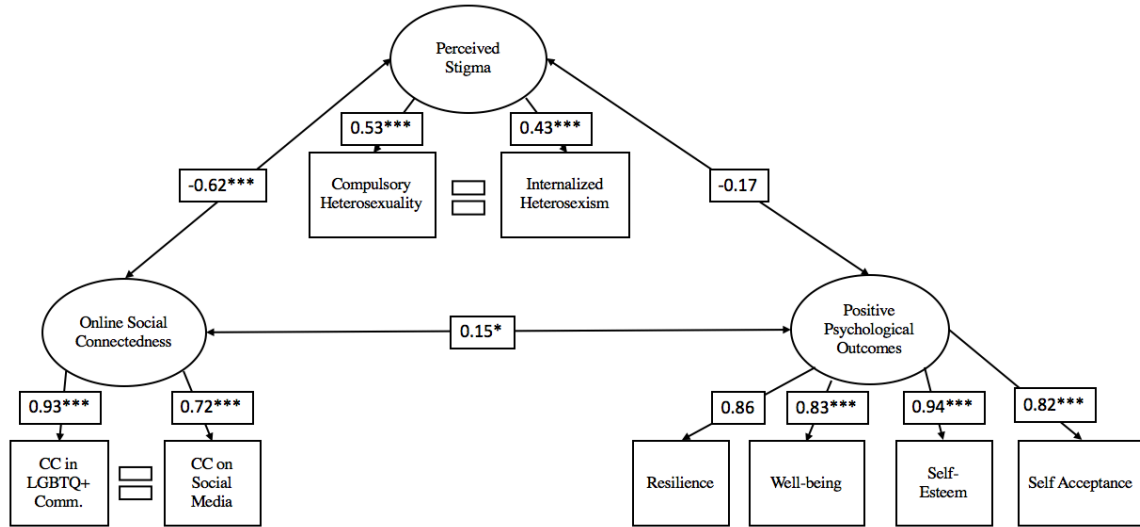


Figure 7. Measurement Model 2. Standardized estimates using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Alternative model 4: Perceived stigma as latent factor. In this model, OSC predicted lower perceived stigma ($B = -0.54, SE = 0.14, p < .01$) and greater positive psychological outcomes ($B = 0.10, SE = 0.05, p < .05$), but perceived stigma did not predict positive psychological outcomes ($p = .38$). There was not a significant indirect effect of perceived stigma.

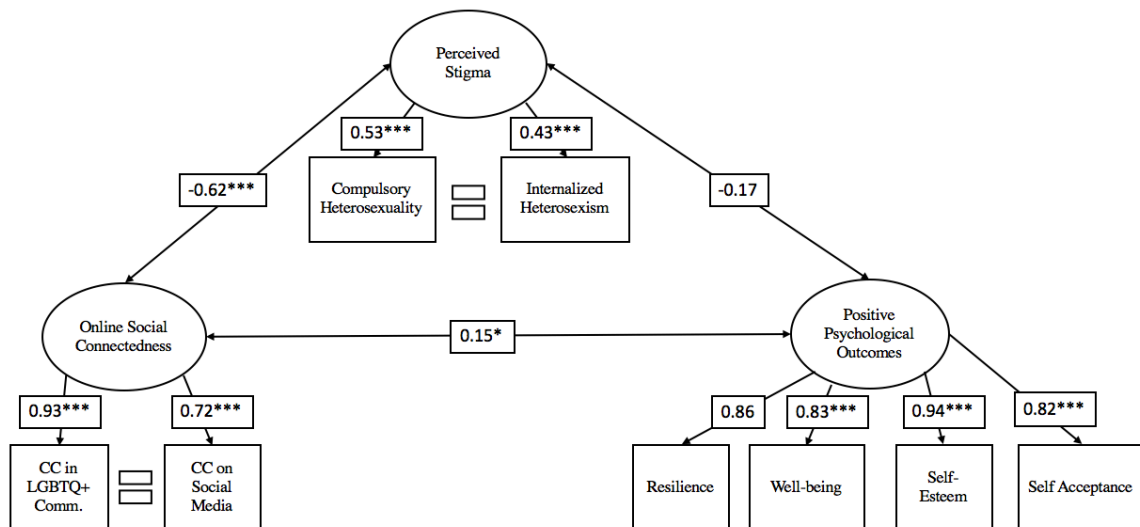


Figure 8. Alternative Model 4: Perceived stigma as latent factor. Standardized estimates using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Alternative model 5: Perceived stigma as predictor. To be thorough, I also tested a model with perceived stigma as the predictor, OSC as the mediator, and positive psychological outcomes as the outcome. Perceived stigma predicted lower OSC ($B = -1.42$, $SE = 0.00$, $p < .001$), OSC did not predict greater positive psychological outcomes ($p = .59$), and perceived stigma did not predict positive psychological outcomes ($p = .09$). Further, there was not a significant indirect effect of OSC.

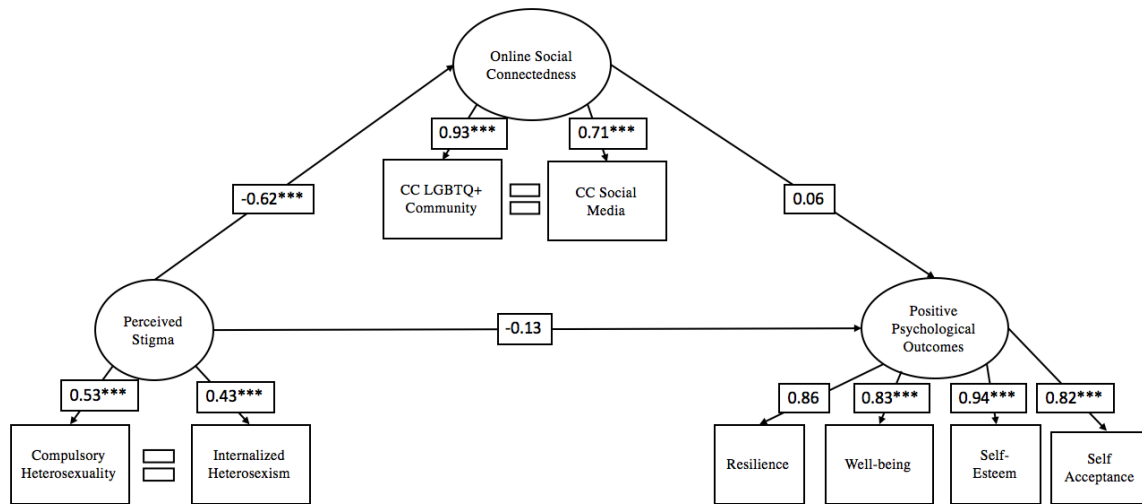


Figure 9. Alternative Model 5: Perceived stigma as a predictor. Standardized estimates using SEM analysis; significance levels for these paths are based on the unstandardized estimates. * $p < .05$, ** $p < .01$, *** $p < .001$.

Discussion

This study investigated the relationships between sexual minorities’ degree of connectedness to the LGBTQ+ community through social media (i.e., online social connectedness) and multiple indicators of positive psychological outcomes, and the extent to which compulsory heterosexuality and internalized heterosexism help to explain these relationships. Consistent with my hypotheses, participants who reported greater social connectedness on social media also reported greater positive psychological outcomes, including higher levels of resilience, well-being, self-acceptance, and self-esteem. Furthermore, this relation between online social connectedness and these

outcomes was mediated serially by compulsory heterosexuality and internalized heterosexism. In other words, greater online connectedness was associated with lower levels of compulsory heterosexuality, which predicted lower internalized heterosexism, which, in turn, corresponded with more positive psychological outcomes.

The results of the SEM models yield insights into how online social connectedness and positive psychological outcomes are related, shedding light on the mechanisms that help explain this relationship. That is, these indirect effects help explain why social media may be especially beneficial for sexual minorities by highlighting the link between the connections that sexual minorities form with the LGBTQ+ community through social media and decreased internalization of heterosexist norms. These findings underscore the benefit of experiencing a sense of belonging, particularly to similar others, for well-being, and that this goes beyond just trivial similarities. The support I found for my hypothesized mediation effects, in particular, demonstrates a crucial benefit of online connectedness to similar others: connecting with similar others online can help increase exposure to more personally-relevant norms. This, in turn, can help to decrease the internalization of norms that go against the core of who one is. The internalization of more psychologically meaningful norms may then translate into more positive psychological outcomes, such as greater resilience, well-being, self-acceptance, and self-esteem. These online connections may be especially vital for sexual minorities who have fewer offline connections to other sexual minorities in their immediate physical environments, or to the extent that they are closeted and have very few people to turn to or talk to about what they are experiencing and feeling.

The present study adds to the existing literature examining online social connectedness among sexual minorities, which has focused nearly exclusively on sexual minority adolescents. These results suggest that compulsory heterosexuality and internalized heterosexism may influence sexual minorities of all ages, not just adolescents, and that using social media to connect with other sexual minorities can help buffer against the negative impact of heterosexist norms. Moreover, whereas online social connectedness may have similar benefits for sexual minority youth and adults, it may also have distinct benefits for sexual minorities at specific life stages. This study thus marks an initial step towards understanding the converging and distinct benefits of online social connections for sexual minorities at different points in their lives.

Alternative Models

It is important to note that although my hypothesized model fit the data the best based on AICs, three of the alternative models also fit the data well and had significant indirect effects. For alternative model 1, in which compulsory heterosexuality and internalized heterosexism both were predictors of online social connectedness, there was a significant indirect effect of compulsory heterosexuality on positive psychological outcomes through online social connectedness, but no indirect effect of internalized heterosexism. The absence of an indirect effect of internalized heterosexism on positive psychological outcomes was driven by the lack of a significant relationship between internalized heterosexism and online social connectedness. This runs counter to previous research that has found that greater internalized heterosexism is associated with greater relationship problems and less social support (Frost & Meyer, 2009; Szymanski et al., 2008). One possible explanation is that because internalized heterosexism is an

intrapersonal process, it may be less visible to others. For those who keep the struggle hidden and do not openly discussing it with others, the benefits of online social connectedness may be limited to only a reduction in compulsory heterosexuality.

With alternative model 2, in which the sequential indirect effects of compulsory heterosexuality and internalized heterosexism were reversed (i.e., internalized heterosexism predicted compulsory heterosexuality), the indirect effect of online social connectedness on positive psychological outcomes through internalized heterosexism and compulsory heterosexuality was significant. One surprising relationship in this model was the positive pathway between compulsory heterosexuality and positive psychological outcomes. That is, in this model, higher compulsory heterosexuality was associated with greater positive psychological outcomes, which also runs counter to previous research that has consistently found compulsory heterosexuality to be associated with increased psychological distress (Szymanski & Henrichs-Beck, 2014; Woodford et al., 2014). One possible explanation for this unexpected finding is that just over half of the participants in the study identified as bisexual, compared to only one-quarter who identified as lesbian or gay. It is possible that the bisexual participants in this study may have held greater heterosexist attitudes and beliefs and may have been less negatively affected by these attitudes and beliefs, compared to lesbian and gay male participants; perhaps because they are in heterosexual-presenting relationships more often than lesbians and gay men. If bisexual participants were less negatively affected by heterosexist attitudes and beliefs, this could help explain the positive relationship between compulsory heterosexuality and positive psychological outcomes. Future analyses examining differences in the relation between compulsory heterosexuality and positive psychological outcomes between gay

and lesbian participants, on one hand, and bisexual participants, on the other hand, could help determine if this was the case.

Additionally, for alternative model 3, in which self-acceptance was added as a third serial mediator instead of as an indicator of positive psychological outcomes, the indirect effects of online social connectedness on positive psychological outcomes through compulsory heterosexuality, internalized heterosexism, and self-acceptance was significant. This suggests that self-acceptance works well as a mediator and as an outcome, highlighting the versatility of self-acceptance and also the need for future studies to better tease apart the role of self-acceptance regarding social connection and mental health.

Alternative models 4 and 5, in which compulsory heterosexuality and internalized heterosexism became indicators of a single latent variable (perceived stigma), with perceived stigma as a mediator of the relationship between online social connectedness and positive psychological outcomes (model 4) and with perceived stigma as the predictor variable of positive psychological outcomes with online social connectedness as the mediator (model 5), did not have significant indirect effects but showed decent model fits. While they were a decent fit for my data, they did not fit as well as my hypothesized model, highlighting the need for more studies, in general, as well as a need for longitudinal studies that can more definitively determine the order and direction of these relationships. Crucially, however, because the primary model was best supported statistically (AICs) and by previous literature, it seems plausible that my hypothesized model is the best for this data.

Limitations

Several limitations include the relative homogeneity of the sample with respect to sociodemographic variables including age, race and ethnicity, and sexual minority identity. That is, a majority of participants were younger adults, White, and LGB. The lack of diversity within the sample limits the generalizability of the present findings. For instance, it is possible that older sexual minority adults may have more established in-person connections to the LGBTQ+ community and may thus use social media differently from younger sexual minorities.

The small number of participants over the age of 40 ($n = 23$) prevented sufficiently powered between-group analyses with respect to age. The present findings are thus primarily applicable to younger adults. However, having a younger sample was also beneficial for this study, given that more social media users in the U.S. tend to be younger rather than older (Auxier & Anderson, 2021).

Along similar lines, because the sample was predominantly White (i.e., 71.1%), the present findings may not be representative of non-White sexual minorities. The comparatively lower numbers of participants from different ethnic and racial groups limited my ability to investigate racial and ethnic differences more systematically. Yet for minority individuals, and especially multiple-minority individuals, using social media to connect with others who are similar on multiple identity dimensions, such as race, ethnicity, and sexual orientation, may be even more important due to the increased unfair treatment and stereotypes they are exposed to by having multiple minority identities (Remedios & Snyder, 2018).

Further, while the study was intended to be inclusive of all sexual minorities, the majority of the sample identified as lesbian, gay, or bisexual ($n = 233$), limiting generalizations that can be made regarding all sexual minorities. For lesser-known and less-visible sexual orientations, it may be easier to feel invisible within society and within the LGBTQ+ community as well (Hayfield, 2020), making the ability to use social media to find and connect with others of the same identity potentially that much more important. While age, racial/ethnic minority status, and gender (cisgender vs. transgender/gender-non-conforming) were included as covariates, they were not significant predictors of compulsory heterosexuality and internalized heterosexism, perhaps partly due to the limitations discussed (i.e., small sample sizes).

Another limitation is that the data is cross-sectional and thus causality cannot be inferred. As shown by several of the alternative models, there were other plausible models that fit the data adequately, highlighting the need for future longitudinal studies to better understand the directionality of the relation between compulsory heterosexuality and internalized heterosexism and to determine whether self-acceptance is better as a measure of positive psychological outcomes or as a mediator between online social connectedness and positive psychological outcomes.

Future Directions

Future research should be longitudinal and more representatively diverse with regard to race, ethnicity, age, sexual orientation, and gender identity to help address the limitations of the current study. As an example of a potential future longitudinal study, it may be interesting to measure feelings of online social connectedness and various psychological outcomes (e.g., well-being, resilience, anxiety, depression, etc.) starting in

early adolescence (~ age 12) and going into adulthood. By measuring online social connectedness, various psychological health outcomes, and also levels of compulsory heterosexuality and internalized heterosexism yearly, one would be able to see how levels of compulsory heterosexuality and internalized heterosexism fluctuate and/or decrease over time, whether online social connectedness fluctuates and/or increases over time in response to compulsory heterosexuality and internalized heterosexism decreasing, and how this affects various psychological health outcomes. A longitudinal study of this nature would allow researchers to explore how plausible online social connectedness is as an intervention for helping sexual minority individuals resolve personal struggles coping with compulsory heterosexuality and/or internalized heterosexism. In a study of gay and bisexual men, those who had resolved their feelings of internalized heterosexism over time had higher odds of positive psychological health outcomes than those who had not resolved these feelings (Herrick et al., 2013). Thus, online social connectedness may help resolve feelings of compulsory heterosexuality and internalized heterosexism over time, leading to better psychological outcomes, and a longitudinal study inclusive of all sexual minorities measuring this yearly would be highly beneficial.

Future research could also look into social media platforms themselves to better determine what fundamental aspects of connection, belonging, and social support social media use is tapping into, examining different social media apps and the different features of apps to determine if one is better for connecting to certain groups and why this may be. Finally, future studies could also be experimental in nature, such as by manipulating the degree of online social connectedness participants are exposed to by assigning them to sexual minority-related social media groups that are either highly

interactive or weakly interactive, alongside a control social media group that is unrelated to sexual orientation (e.g., a group for gaming or for pets). By measuring levels of compulsory heterosexuality, internalized heterosexism, and various positive psychological outcomes at baseline and then weekly for several weeks, one would be able to make more concrete conclusions about whether amount of online social connectedness to other sexual minorities influences levels of compulsory heterosexuality, internalized heterosexism, and positive psychological outcomes.

Conclusion

This study provides insight into the importance of connecting with others on social media for positive psychological outcomes among sexual minority individuals. My finding that social media connectedness may buffer against the negative effects of compulsory heterosexuality and internalized heterosexism highlights how social media can be beneficial for marginalized groups and warrants future empirical studies to investigate these benefits more fully.

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APPENDIX A
IRB APPROVAL

EXEMPTION GRANTED

[Deborah Hall](#)
[NCIAS: Social and Behavioral Sciences, School of \(SSBS\)](#)
 602/543-2832
 d.hall@asu.edu

Dear [Deborah Hall](#):

On 2/16/2021 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Online Social Connectedness and Wellbeing Among Sexual Minorities
Investigator:	Deborah Hall
IRB ID:	STUDY00013410
Funding:	Name: Social and Behavioral Sciences, School of; NCIAS
Grant Title:	
Grant ID:	
Documents Reviewed:	<ul style="list-style-type: none"> • Funding Information.docx, Category: Sponsor Attachment; • IRB Appendix, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Recruitment Message, Category: Recruitment Materials; • Updated Consent Form, Category: Consent Form; • Updated IRB Protocol, Category: IRB Protocol;

APPENDIX B
MATERIALS

Dear Participant:

We are researchers in the School of Social & Behavioral Sciences at Arizona State University.

We are conducting research investigating social media use within the LGBTQ+ community. We are inviting your participation, which will involve answering questions about your social media use, social relationships and connections, and wellbeing, as well as providing some basic demographic information.

This is an online study that takes approximately 15-20 minutes to complete. In return for participating in the survey, you will be paid \$2.85.

Your participation in this study is voluntary. You can skip questions if you wish. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 years old or older, speak English, reside in the U.S., and identify as LGBTQ+ to participate in this study.

Although there is no direct benefit of participating in this study, there is the potential for you to gain a better understanding of the process of conducting psychological research. There are no foreseeable risks or discomforts to your participation.

The responses you provide in this study will be anonymous—that is, the researchers can in no way link the responses you provide in the study to any personally identifying information including computer IP address or geographic location. The only record of your participation will be in the form of your randomly-generated study completion code, which will allow PROLIFIC to process your payment upon study completion. The results of this study may be used in reports, presentations, or publications but your name will not be known. All data collected in this study will be reported in aggregate form.

If you have any questions concerning this research study, please contact the research team at: d.hall@asu.edu / (602) 543-2382. If you have any questions about your rights as participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board at Arizona State University, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Sincerely,
Deborah L. Hall, Ph.D.
Katie Baumel, B.A.

If you do not wish to participate, please exit the study by closing this webpage, returning to Prolific, and choosing the "Stop without completing" option.

Clicking to move forward to the next page will signify your consent to participate in this study.


Have you come out?


Yes

No

Outness Inventory:

OI





Use the following rating scale to indicate how open you are about your sexual orientation to the people listed below. Try to respond to all of the items, but choose Non-applicable if they do not apply to you. If an item refers to a group of people (e.g., work peers), then indicate how out you generally are to that group.

	Person definitely does NOT know about your sexual orientation status	Person might know about your sexual orientation status, but it is NEVER talked about	Person probably knows about your sexual orientation status, but it is NEVER or RARELY talked about	Person definitely knows about your sexual orientation status, but it is RARELY talked about	Person definitely knows about your sexual orientation status, and it is SOMETIMES talked about	Person definitely knows about your sexual orientation status, and it is OPENLY talked about	Not applicable to your situation, there is no such person or group of people in your life
Mother	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Father	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Siblings (sisters, brothers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extended family/relatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My new straight friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My work peers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My work supervisor(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Members of my religious community (e.g., church, temple)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leaders of my religious community (e.g., church, temple)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strangers, new acquaintances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My old straight friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Unconditional Self-Acceptance Questionnaire (USAQ):

INSTRUCTIONS: Please indicate your level of agreement with each statement below.

1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree

1. When someone compliments me for something, I care more about how it makes me feel about myself than about what it tells me about my strengths or abilities.

2. I feel worthwhile even if I am not successful in meeting certain goals that are important to me.

3. When I receive negative feedback, I take it as an opportunity to improve my behavior or performance.

4. I feel that some people have more value than others.

5. Making a big mistake may be disappointing, but it doesn't change how I feel about myself overall.

6. Sometimes I find myself thinking about whether I am a good or bad person.

7. To feel like a worthwhile person, I must be loved by the people who are important to me.

8. When I am deciding on goals for myself, trying to gain happiness is more important than trying to prove myself.

9. I think that being good at many things makes someone a good person overall.

10. My sense of self-worth depends a lot on how I compare with other people.

11. I believe that I am worthwhile simply because I am a human being.

12. When I receive negative feedback, I often find it hard to be open to what the person is saying about me.

13. I set goals for myself that I hope will prove my worth.

14. Being bad at certain things makes me value myself less.

15. I think that people who are successful in what they do are especially worthwhile people.

16. To me, praise is more important for pointing out to me what I'm good at than for making me feel valuable as a person.

17. I feel I am a valuable person even when other people disapprove of me.

18. I avoid comparing myself to others to decide if I am a worthwhile person.

19. When I am criticized or when I fail at something, I feel worse about myself as a person.

20. I don't think it's a good idea to judge my worth as a person.

Rosenberg Self-Esteem Scale (RSES):

Please rate the items using the following scale:

1 = strongly agree 2 = agree 3 = neither agree nor disagree 4 = disagree 5 = strongly disagree

1. I feel that I am a person of worth, at least on an equal basis with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I take a positive attitude toward myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times I think I am no good at all.

Heteronormative Attitudes and Beliefs Scale (HABS):

Please indicate your level of agreement with the following statements:

1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree

1. Masculinity and femininity are determined by biological factors, such as genes and hormones, before birth.
2. There are only two sexes: male and female.
3. All people are either male or female.
4. Gender is the same thing as sex.
5. Sex is complex; in fact, there might even be more than two sexes.
6. Gender is a complicated issue, and it does not always match up with biological sex.
7. People who say that there are only two legitimate genders are mistaken.
8. Gender is something we learn from society.
9. In intimate relationships, women and men take on roles according to gender for a reason; it is really the best way to have a successful relationship.
10. In intimate relationships, people should act only according to what is traditionally expected of their gender.
11. It is perfectly okay for people to have intimate relationships with people of the same sex.
12. The best way to raise a child is to have a mother and a father raise the child together.
13. In healthy intimate relationships, women may sometimes take on stereotypical “male” roles, and men may sometimes take on stereotypical “female” roles.
14. Women and men need not fall into stereotypical gender roles when in an intimate relationship.
15. People should partner with whomever they choose, regardless of sex or gender.
16. There are particular ways that men should act and particular ways that women should act in relationships.

17. How we identify ourselves and act socially in terms of masculinity and femininity is determined by biological factors, such as genes and hormones, before birth.

18. The social roles and identities people take on as men and women are the same thing as biological sex.

19. The social roles people take on as women and men are complicated, and they do not always match up with biological sex.

20. Social roles and identities based on who people are as men and women are learned from society.

Resilience Evaluation Scale (RES):

Please indicate your level of agreement with each statement below:

Completely disagree (1), disagree (2), neutral (3), agree (4), completely agree (5)

1. I have confidence in myself.
2. I can easily adjust in a difficult situation.
3. I am able to persevere.
4. After setbacks, I can easily pick up where I left off.
5. I am resilient.
6. I can cope well with unexpected problems.
7. I appreciate myself.
8. I can handle a lot at the same time.
9. I believe in myself.

Internalized Homonegativity Inventory (IHNI)- Personal Homonegativity Subscale:

Please indicate your level of agreement with the following statements:

1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = somewhat agree, 5 = agree, 6 = strongly agree

1. When I think of my sexual orientation, I feel depressed.
2. I feel ashamed of my sexual orientation.
3. When I think about my attraction towards [men/women/both/neither], I feel unhappy.
4. When people around me talk about the LGBTQ+ community, I get nervous.
5. I wish I could control my feelings of attraction toward other [men/women/both/neither].
6. I am disturbed when people can tell I am a sexual minority.
7. Sometimes I get upset when I think about being attracted to [men/women/both/neither].
8. Sometimes I feel that I might be better off dead than a sexual minority.
9. I sometimes resent my sexual orientation.
10. I sometimes feel that my sexual orientation is embarrassing.
11. I wish I could control my feelings of attraction toward other [men/women/both/neither].

Well-Being Scale (WeBS)

Please indicate your level of agreement with each statement below:

1 = strongly disagree, 2 = moderately disagree, 3 = mildly disagree, 4 = mildly agree, 5 = moderately agree, 6 = strongly agree

1. I am physically healthy.
2. I have enough financial resources to meet my needs.
3. I have enough financial resources to have fun.
4. I am satisfied with my housing.
5. I feel in control of my finances.
6. I feel in control over my physical health.
7. I am satisfied with my weight.
8. I have enough energy to do the things I need to do.
9. I take good care of my physical health.
10. I plan for the future.
11. I have someone who knows me well to talk to when I have problems.
12. I know I can count on my friends and/or family in a time of crisis.
13. There is at least one person I know who loves me and/or needs me.
14. I feel confident that I am able to solve most problems I face.
15. I like my life at home.
16. I am satisfied with my physical appearance.
17. I get along with people in general.
18. I enjoy spending time with friends and/or relatives.
19. I find time to do things that are fun and interesting.

20. I believe I have the potential to reach my goals.
21. I believe that I can make a difference in the lives of others.
22. Life has meaning for me.
23. I am satisfied with my spirituality.
24. I think I am as smart as, or smarter than, others.
25. I often do things that bring out my creative side.
26. I like engaging in stimulating conversations.
27. I try to do things that make me happy.
28. I feel happy often.
29. I enjoy life.

Connectedness to the LGBT Community Scale

Please rate the following items using the following scale:

1 = strongly agree, 2 = agree, 3 = neither agree nor disagree, 4 = disagree, 5 = strongly disagree

1. I feel I am part of the online LGBTQ+ community.
2. Participating in the online LGBTQ+ community is a positive thing for me.
3. I feel a bond with the online LGBTQ+ community.
4. I am proud of the online LGBTQ+ community.
5. It is important for me to be politically active in the online LGBTQ+ community.
6. If we work together, LGBTQ+ people can solve problems in the online LGBTQ+ community.
7. I really feel that any problems faced by the online LGBTQ+ community are also my own problems.

Connectedness on Social Media Measure

Please indicate your level of agreement with the following statements:

1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree

1. I feel I am connected to other LGBTQ+ users on social media.
2. I feel like I fit in with the LGBTQ+ community on social media.
3. I have made connections to other LGBTQ+ people on social media.
4. I feel comfortable communicating with other LGBTQ+ people on social media.
5. I feel like I belong in the LGBTQ+ social media community.

Additional Questions:

To what extent do you feel connected to the LGBTQ+ community through your social media usage?

- Not at all connected
- Slightly connected
- Moderately connected
- Greatly connected
- Extremely connected

Have you used social networking sites (i.e., Twitter, Tumblr, Facebook) to follow other LGBTQ+ accounts or specific LGBTQ+ individuals?

- Yes
- No

Which of the sites below have you used to follow LGBTQ+ individuals/accounts? Check all that apply:

- Facebook
- Instagram
- LinkedIn
- Pinterest
- Reddit
- Snapchat
- TikTok
- Tumblr
- Twitch
- Twitter
- WhatsApp
- Youtube
- Other (please list)

SMU3

How often do you engage in the behaviors listed below while using any social media site?

	Never	Less than once a week	Once a week	2-6 times a week	Once a day	Several times a day
Read discussions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read comments/reviews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Watch videos or view pictures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share others' content (e.g., retweet, share posts or status updates)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For this row, please select "Once a week"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Like/favorite/voting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comment on or respond to someone else's content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post your own content (e.g., tweet, status update)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How often do you use the above social networking sites?

- Do not use
- Every other week
- Once a week
- A couple of times during a week
- Four to five times a week
- Daily
- A couple of times a day
- Several times throughout the day

On average, how many hours **per day** are you logged in on social media?


Dropdown box with options from 0 hours to 24 hours

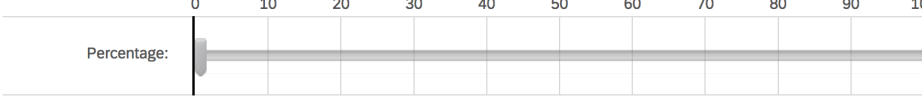
On average, how many hours **per day** do you actively use social media?

Dropdown box with options from 0 hours to 24 hours

How often do you watch LGBTQ+ shows/movies or read LGBTQ+ literature?

- Never
- Less than once a week
- Once a week
- 2-6 times a week
- Once a day
- Several times a day

SMU6  What percentage of your close friends and family identify as sexual minorities? If zero, please make sure to click 0 and that a 0 becomes visible above the slider.

Percentage: 

0	10	20	30	40	50	60	70	80	90	100
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How often do you encounter LGBTQ+ individuals **online** in your daily life?

- Never
- Rarely
- Sometimes
- Often
- Always

How often do you encounter LGBTQ+ individuals **in person** in your daily life?

- Never
- Rarely
- Sometimes
- Often
- Always

How has your social media usage changed during the COVID-19 pandemic?

- Greatly decreased
- Moderately decreased
- Slightly decreased
- Neither decreased nor increased
- Slightly increased
- Moderately increased
- Greatly increased

Have you joined any social media platforms during the COVID-19 pandemic or because of the COVID-19 pandemic? Check all that apply:

- None/NA
- Facebook
- Instagram
- LinkedIn
- Pinterest
- Reddit
- Snapchat
- TikTok
- Tumblr
- Twitch
- Twitter
- WhatsApp
- Youtube
- Other (please list)

SMCOVID
3

How has the COVID-19/coronavirus pandemic affected each of the following for you?

	Extremely positive impact	Moderately positive impact	Slightly positive impact	Neither positive nor negative impact	Slightly negative impact	Moderately negative impact	Extremely negative impact
Your relationships	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your social life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your degree of activity on social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The people you interact with on social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount of time you spend on social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to work or perform schoolwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to make money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your daily routine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your family life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your happiness and well-being	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your physical health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your psychological or mental health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your life overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What is your age?

Free response

What is your sexual orientation?

Lesbian

Gay

Bisexual

Asexual

Pansexual

Demisexual

Other (fill in the blank)

What is your gender?

Cisgender Male

Cisgender Female

Non-binary/gender fluid

Transgender Male

Transgender Female

Prefer not to answer

Other (fill in the blank)

What is your ethnicity?

- Hispanic/Latinx
- Non-Hispanic/Non-Latinx

What is your race?

- White
- Black or African American
- American Indian or Alaskan Native
- Asian or Asian American
- Native Hawaiian or Pacific Islander
- Other

What is your current annual household income (before taxes)?

- < \$25,000
- \$25,000-\$34,999
- \$35,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,999
- \$100,000-\$149,999
- \$150,000-\$199,999
- \$200,000 or more

What is the highest level of education you have completed?

- Less than high school degree
- High school graduate or equivalent
- Some college but no degree
- Associate degree in college (2-year)
- Bachelor's degree in college (4-year)
- Graduate degree

Is there anything I did not ask that you think I should have?

- Free response