A Tool for Help or Harm?

Associations between Sexual Minority Youth's Social Networking Use and their Social Support, Sexual Identity, and Mental Health

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Abstract

With the increasing popularity of social networking sites, research has begun to investigate the implications for youth development, with concern for possible negative effects on their relationships and well-being. But for youth who feel somewhat marginalized, these sites could be important sources of social support. Accordingly, our study sought to examine the relations between sexual minority youth's social networking site use and their social support, sexual identity strength, and mental health. We conducted an online survey, sampling 146 sexual minority youth respondents (M = 21 years; SD=2.87 years) and 476 heterosexual youth respondents (M = 20 years; SD=2.76 years). Results indicated that although both sexual minority and heterosexual youth use social networking sites at equal rates, sexual minority youth indicated that they use the sites more for each of our identity development and social communication motives. At the same time, neither frequency of use nor number of sites used was as strongly related to sexual minority youth's mental health as were their reasons for using the sites. Specifically, using sites for identity expression or exploration predicted negative mental health outcomes, whereas using sites for sexual identity work predicted positive mental health outcomes. These results provide us with greater insight into how social networking sites may be affecting the mental health of marginalized groups, and open up questions as to why differences in social networking site experiences between sexual minority and heterosexual youth exist.

Keywords: sexual minority, youth, social networking sites, mental health, social support, sexual identity, identity development

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It is widely recognized that social networking sites (SNS) are becoming one of the most popular domains online, especially for young people. Although the exact definition varies across researchers, many agree with Boyd and Ellison's (2007) definition of a social networking site, which Subrahmanyam and Greenfield summarize as "web-based services that allow individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system" (Subrahmanyam & Greenfield, 2008, p. 417). As social networking sites increasingly become a part of adolescents' and young adults' daily lives, more research is being done looking at how use of these sites influences youth development. Areas of communication, relationship maintenance, identity exploration and definition, community involvement, psychological well-being, and even minority group use of social networking sites have all been topics of research in this field. Although many of the initial findings on youth and Internet use suggested that time spent on the Internet could have negative consequences on psychosocial development (e.g., Kraut, et al. 1998), some of the current studies are showing more positive outcomes for youth (e.g., Deters & Mehl, 2012), especially for youth who may feel marginalized. I seek to address this issue with this study, exploring connections between use of social networking sites, identity development, social support, and psychological outcomes among both heterosexual and sexual minority youth.

Social Networking Sites and Adolescents' General Use, Behaviors, and Outcomes

A significant number of the early studies looking at how Internet use affected people mirrored that of the often-cited Kraut and colleagues' study of 1998, which claimed that Internet

use is positively correlated with depression, loneliness, and stress. Many of these results matched an exaggerated sense of the negative effects of Internet use by the media and public opinion that was prevalent during the early years of Internet use (Shaw & Gant, 2002). However, a few years later, studies began to reexamine the effects Internet use was having on individuals. In their 2002 article "In Defense of the Internet," Shaw and Gant describe the results of a 4-8 week study in which they placed 40 young-adult participants into anonymous online-chat dyads, recorded their conversations, and tested for ratings of depression, loneliness, self-esteem, and perceived social support before, in the middle, and after the experimental period. In their study, they found that Internet communication actually had beneficial effects for each one of their measures, in contrast to the previous studies. They also cited other researchers who had found similar results.

However, in contrast to both of these extreme perspectives, research by Gross (2004) began to show a middle ground concerning Internet use and youths' psychological adjustment. In the Gross study, 261 seventh and tenth graders completed a questionnaire examining the context of their internet use, their online pretending activity, and their well-being and social adjustment. Then, they completed diary entries for up to four consecutive nights on their daily after-school activity, daily Internet usage, characteristics of their online communication, and daily well-being and social adjustment. In this study, it was found that, for the most part, there was no correlation between the time adolescents spent online and their psychological adjustment. However, they did find a result that has been replicated many times since, that most of adolescents' Internet time is used for communication—mostly with "physical-world" friends. Beyond that, though, when relating to other variables, such as identity, Gross concluded that there is a complexity to digital media use, and that it is impossible to make any one claim (Gross, 2004).

Despite these findings that suggested that Internet use and communication held a positive effect—if any—on youth's psychological well-being, there was still a "moral panic" concerning adolescents' use of the then-newly-emerging social networking sites. This "panic," discussed by Tynes in 2007, was over-hyped by the media and adopted by worried parents, as people made claims of social networking sites' potential negative consequences—similar to those made by Kraut et al. in 1998. Tynes (2007) argues that despite this negative backlash to the emergence of social networking sites, parents, educators, policy-makers, and those dealing with adolescent health should be aware that the benefits of online social networking outweigh the risks. She claims that worries over predation, privacy, bullying, and potential negative adjustment, while real, are not as common as they are perceived to be by the media. Furthermore, she argues that there are crucial educational benefits of social networking to be found in critical thinking, argumentation, and other cognitive skills fostered by use of the sites. She also discussed all of the potential psychosocial benefits of online social networking, such as identity exploration, perspective taking development, social support, intimacy, and autonomy fulfillment, as well as racialized role-taking. She concludes by saying that not only would banning or limiting social networking site use not work in our modern society, but it would also deprive adolescents of these critical developmental tools. Therefore, she encourages teaching media literacy and technological sophistication to youth, so that they may be self-aware of the risks and dangers associated with being online (Tynes, 2007).

In conjunction with Tynes' review and argument in 2007, there has been much research since, investigating specifically what adolescents and young adults are using social networking sites for, with many of the findings dispelling the "rumors," just as Tynes suggested. At the time that Subrahmanyam and Greenfield wrote their article in 2008, social networking sites were

becoming popular, yet little was known about what specific activities youth were engaging in online and how these activities related to their offline activity, nor was there much known about how one's "friends" online related to their friends offline. Through conducting surveys that asked young adults about their daily online and offline activity, Subrahmanyam, Reich, Waechter, and Espinoza (2008) found that social networking sites were used primarily for social reasons involving the people from individuals' offline lives. On average, nearly half of the people that participants listed as instant-messaging partners and as their top social-networking site friends were those that they considered their closest "face-to-face," or offline, friends. Participants also reported that the majority of their connections online were with people they had met in person. Furthermore, 73% of participants reported that social networking sites made no difference in their relationships with friends, and 20% reported that the interactions enhanced their relationships. The researchers concluded that social networking site use integrated aspects of young adults' offline lives, such as social concerns and relationships with other people. They inferred that both offline and online activities represented a stressed importance on maintaining interconnectedness with others, for young adults (Subrahmanyam et al., 2008).

Other studies since this initial work have found similar results. Pempek, Yermolayeva, and Calvert in 2009 reported that one of the greatest uses for Facebook amongst college students was communicating with friends. Mazur and Richards (2011) suggested that, for the most part, adolescents' interactions with friend-groups on MySpace resemble their offline friend-interactions: both types of interactions are predominately cross-gender, but with people of the same ethnicity, age, and location. In 2009, Clarke reported that adolescents can and do use social networking sites as a means of maintaining distant friendships, and view their friend circles as ever-evolving and inclusive through the lens of social networking sites. In addition, Clarke also

stressed the importance of social networking for identity exploration. She reported that adolescents focus a great deal on identity presentation on social networking sites, and although they seem to "establish" an identity on the sites, they are "fickle" about it. She argued that identity exploration is prolonged in first-world or technologically advanced cultures, and that adolescents—at an increasingly younger age—are taking advantage of social networking sites to play with their identity in this extended period, but in a manner that makes them feel in control of their own image and development (Clarke, 2009). Overall, the perception of internet use and social networking sites amongst youth has shifted from one of fear to one of acceptance and curiosity about the sites' relationships to youth's identities.

Social Networking Sites and Identity Development

The interest in social networking sites' relationships with youth's identity development has extended far beyond the Clarke (2009) study. In the formerly mentioned study, Pempek et al. (2009) also suggest that online social networking is used as a means to establish identity. In fact, much research has been conducted examining the so-called "identity playground" of social networking sites, and the implications that use of these sites could have for adolescents' identity development. Nabeth (2009) suggests that use of the social web (such as social networking sites) provides a way for people to reinforce their sense of belonging, and provides support for defining and constructing one's online identity. The author further suggests that rather than being two separate entities, online and offline identity are two facets of a single, "blended" identity (Nabeth, 2009). These points are extended by Cover (2012), who argues that social networking sites are a tool for trying to articulate a coherent and recognizable self—similar to the use of a diary—yet this identity is constantly "under construction." He poses the questions as to whether or not users will tire of the additional "identity-maintenance work" caused by incompatibilities

between past and present posts, tags, and pictures on one social networking site profile, or if social networking sites are the beginning of a new framework in which culture begins to "embrace the complexity and incoherence of identity" (Cover, 2012, p. 191). The questions and ideas surrounding identity development through social networking sites are very diverse and broadly-encompassing, as there are many different theoretical manners of approaching identity development.

That being said, a popular manner of investigating how identity is shaped and expressed on social networking sites is by looking at how people present themselves in terms of their relationships with friends and groups online. Barker (2009) used a questionnaire to assess adolescents' motives for social networking site use, motives for attaining social identity gratification, their levels of group identity and collective self-esteem, and their frequency of site use. Her sample included 734 college freshman, 68% of whom were 18 years old, 59% of whom were female, and 57% of whom were Anglo. Variables relating to participants' group identity (racial, social, gender, or otherwise) and collective self-esteem (how positively they felt about the identity associated with their group) were examined. Through her study, she found that adolescents' with higher levels of group identity and positive collective self-esteem cited maintaining contact with their closest peer group as their most important use for online social networking. On the other hand, she found moderate support that those with a more negative sense of collective self-esteem used social networking sites more for social compensation and for seeking out virtual companionship. Women were more motivated to use social networking sites for communication with close peers, whereas men were more motivated to use social networking sites for learning purposes.

Barker concluded from her results that those feeling negatively about their social identities would use social networking sites to distance themselves from their existing in-group, and would seek a more favorable group and social identity. She also discussed the action of seeking social identity gratification, which she defined as an individual's acting upon opportunities to identify with one's in-group members who look and act similarly to each other, as well as comparing oneself to out-group members. She claimed that youth who are more comfortable with their in-group social identity obtain social identity gratification via social networking sites, in order to further strengthen their affirmed social identity, online (Barker, 2009). In her 2012 study, Barker obtained similar results, and concluded that aspects of social identity and group belonging transfer similarly from the offline world to the realm of online social networking, and that social networking online is important in reinforcing these two aspects of the self. Furthermore, she again argued that social identity gratification is most directly related to identity establishment via social networking sites, while social compensation is related to seeking connections via social networking sites (Barker, 2012).

Many other studies found that examining identity development on social networking sites was a valuable method of analysis, as well. Livingstone, in 2008, concluded that social networking online is about presentation of the self, imbedded in one's peer group, rather than a narcissistic presentation (Livingstone, 2008). Similarly, yet also contrastingly, Gentile, Twenge, Freeman, and Campbell (2012) reported an experiment that found that more time spent editing one's MySpace profile actually lead to increased narcissism in adolescents, and that more time spent editing one's Facebook profile lead to increased positive self-views, but not increased narcissism. Again, the authors claim a possible explanation is the fact that MySpace is centered more around presenting one's individual self, while Facebook is geared towards networking with

friends and family—or is more related to social identity (Gentile, et al., 2012). Also addressing the risks and advantages of identity development through social networking sites, Manago and colleagues concluded that MySpace provides tools for personal, social, and gender identity construction, yet also increases pressure for female sexual objectification and intensifies individuals' levels of social comparison (Manago, Graham, Greenfield, & Salimkhan, 2008). Yet despite differences between the outcomes of use of specific sites, the common theme seems to be that social networking sites are providing adolescents and young adults a crucial space to test out new identities with minimal risk. This use of the sites is most crucial for youth during their developmental stage in which identity work and social perceptions are so important to their sense of being.

Psychosocial Consequences of Social Networking Site Use

Although social networking sites have emerged as a valuable tool for identity—especially social identity—development, they also have both risk and protective factors associated with them for youths' identity development and overall psychosocial well-being. In a review, Moreno and Kolb (2012) discussed that social networking site use poses potential risks to adolescents through providing opportunity to display or witness risky material, and be subject to privacy violations, cyberbullying, or sexting behaviors. However, they noted that benefits of online social networking include access to social support, improved self-esteem and social capital, and access to organization of classroom or civic activities (Moreno & Kolb, 2012). In their 2012 study, Vitak and Ellison sought to further examine such variables in looking at how individuals viewed exchanging information and support-based resources on Facebook. In their interviews with 18 adults, they found that people used status updates to gain support for actions from contacts with whom the participants had both strong and weak relationships, and that they used

online group pages to express shared experiences. These results suggested that social networking sites have a powerful influence as social support tools. However, they also found concerns raised by individuals that Facebook feedback may not be "genuine," and that support on the website is sometimes viewed as "less meaningful" than more direct modes of communication, such as phone calls or physical visits (Vitak & Ellison, 2012).

In addition, other studies continue to find little to no support for serious negative consequences of social networking site use. For example, in Jelenchick, Eickhoff, and Moreno's 2012 study on "Facebook Depression," researchers found that there was no significant association between social networking site use and probability of reporting any depression; this outcome is similar to studies that found no link between email or online chatting and depression (Jelenchick et al., 2012). Moreover, there have been studies reporting positive psychosocial benefits to youth's developing identity through the Internet, in general. In their 2012 experiment, Deters and Mehl instructed an experimental group of 37 participants between the ages of 18 and 22 to increase their average amount of Facebook status updates. The participants completed a baseline, a daily, and a post-study (one-week) mental health questionnaire, and the researchers found that posting more status updates was related to a decrease in loneliness. Further analysis led the researchers to believe that this decrease in loneliness was mediated by the participants' feeling of relatedness with their friends, as they were posting more status updates. In both Suzuki and Calzo's study (2004) and Nicholas' case study (2010), researchers stress the unique importance of youth's using peer-discussions and online resources on the Internet in talking about their health and well-being. In particular, adolescents seem to find the Internet a great resource for candidly discussing their sexual health and relationships. Researchers discuss that the broad spectrum and anonymity of the Internet allow young adults and adolescents to discuss

these sensitive topics that they may not feel comfortable discussing with their parents, health-care providers, or even peers, in-person (Nicholas, 2010; Suzuki & Calzo, 2004).

Despite the benefits youth can derive from Internet and social networking site use, there are a few studies that still demonstrate negative psychological consequences—specifically, in regards to social networking site use. In their 2013 study, Kross et al. text-messaged their 82 participants (*M*age = 19.52 years) five times per day for two weeks to assess how they were feeling, how satisfied they were with their life, and how much they had been using Facebook versus communicating in-person with other people, since last they were contacted. Although neither direct social contact nor social networking use was related to overall life satisfaction, the authors found that Facebook use did predict declines in one's present mood. Interestingly enough, however, this finding was only significant when participants experienced moderate-to-high levels of social contact—it was not significant for participants who experienced low levels of direct social contact. Kross and his colleagues conclude that Facebook may provide a unique form of social interaction that predicts poorer well-being in youth.

Yet, given the many reports describing all the positive benefits to well-being and identity found through social networking sites and the Internet, from where do some of these negative consequences mentioned originate? In their 2009 article, Kim, Larose, and Peng surveyed young adults to see if certain individuals with psychological problems developed uncontrolled patterns of Internet use, and whether this problematic Internet use had negative life outcomes for the individuals. In this study, it was found that the "rich get richer" in terms of extraverts' social interactions on online social networking. Although this finding has been shown elsewhere, the researchers found that the "poor get poorer," as well. Their results indicated that while an individual's level of psychological distress increases, so does his/her reliance on favorite online

activities, as the individual seeks to diminish or escape from psychosocial problems. In turn, such individuals further isolate themselves, and report even lower scores of well-being (Kim, et al., 2009).

Similar results have been found with social networking sites, specifically. In their study looking at rumination's possible mediation of links between Facebook use and depressive symptoms, Davila, Hershenberg, Feinstein, Gorman, Bhatia, and Starr (2012) found that frequency of Facebook use had no relation to depression; instead, it was the quality of interactions on sites that affected mental health. Although the authors found that negative interactions were associated with greater levels of depressive symptoms, they also found that more positive interactions were related to fewer depressive symptoms. Furthermore, a recent longitudinal study (Teppers, Luyckx, Klimstra, & Goossens, 2013) found that participants' motives for Facebook use were the driving force behind these psychosocial outcomes. The researchers found that greater levels of baseline peer-related loneliness among high school students predicted using Facebook over time to compensate for social skills, to attempt to decrease loneliness, and to increase personal contact. If students expressed a baseline motive for using social networking to compensate for social skills, they experienced greater levels of loneliness later on. On the other hand, if the students expressed a higher drive to use Facebook to meet new people, they expressed lower levels of loneliness at the end of the study. These studies reveal two aspects of negative outcomes from online media use. First, there appears to be a bi-directional association, in which people with poorer psychological adjustment seek out compulsive or problematic Internet use, and such use can further worsen adjustment. Second, the consequences—positive or negative—of one's Internet or social networking use are not universal, but rather depend upon the reasons an individual has for use, in the first place.

Sexual Minority Youth and Social Networking Site Use

Social networking site use and impact are not universal, but have instead been found to vary based on characteristics of the users, such as gender, culture, and race (Tynes, García, Giang, & Coleman, 2012). Although limited, evidence also indicates that Internet practices also vary by sexual orientation. For example, Kuper, Nussbaum, and Mutanski (2012) looked at a sample of transgender young and older adults online, to better assess what specific identities people constructed for themselves within the label of "transgender." They found that there was, in fact, a great diversity to what people identified themselves as—with the term "transgender" not being the most common. They concluded that this growth in identities could be the result of two factors. First, they describe the increase in identities as a having a bi-directional relation with sociocultural evolution, claiming that as society becomes more open to different identities and less strict about gender-norms, more people will be free to express themselves in unique ways. However, they also point out that this finding may only be representative of "transgender" individuals who have access to social networking sites and list-servs. Through access to such new media, they argue that these individuals could have access to many more resources about sexual and gender identity, and therefore be able to more knowledgeably construct an identity specific and unique to them (Kuper, et al., 2012).

Others have found that many sexual minority youth report using the Internet for sexual health information. Pascoe (2011) conducted 23 case studies and 40 interviews, looking at adolescents' new media use in terms of discussing and seeking information about sexuality and sexual health. She concluded that new media provide an "ideal venue" for conveying information about the sensitive, and sometimes, embarrassing, topics of sexual practices and sexuality. However, she also warns that there seem to be racial, class, and disenfranchised youth

disparities when it comes to access to new media, in which underprivileged minority groups [including sexual minorities] do not have access to these resources as much—even if they need them most (Pascoe, 2011). Additionally, DeHaan, Kuper, McGee, Bigelow, and Mutanski (2012) interviewed 32 LGBT youth (ages 16-24) on their Internet use and on how they related it to health information, identity, and their relationships and sex. Findings indicated many similarities between heterosexual and sexual minority youth's online uses, including uses for identity development, maintaining social lives, and having parallel concerns between their offline and online lives. In addition, LGBT youth found importance in the anonymity of the internet in trying to resolve questions and issues they had in their offline lives.

Other work highlights the importance of the Internet for identity development among sexual minority youth. Pingel, Bauermeister, Johns, Eisenberg, and Leslie-Santana (2013) investigated how young gay men were using the Internet during adolescence and emerging adulthood. The researchers conducted in-depth, semi-structured interviews with 34 young, gay men between the ages of 18 and 24, and inquired about youth's initial experiences of online dating. The study sought to test the idea that the Internet primarily poses risks among the young gay population for encounters that lead to HIV and STI transmission. Through their interview responses, they found that young gay men seemed to greatly benefit from online sexual identity exploration. They argue that young gay men used the Internet to seek out friendships, sexual partners, and romance. Participants also found the Internet as a method of gaining access to discussions that were difficult and rare in public, and utilized online anonymity to test out and internalize interpersonal scripts, as they were safe from rejection or stigmatization. When it came to risks, participants seemed to express that the emotional risk presented with online dating were of far greater concern than the risks of contracting HIV or an STI. The paper argues that young

gay men are balancing these online risks, with their successes in identity development, into their interpersonal scripts used for social development.

Further investigating the risks faced by the sexual minority community, McDermott, Roen, and Piela (2013) examined online discourse among LGBT youth to discover youth's self-perceived relationships between physical self-harm and sexual identity. The researchers analyzed 49 posts from 20 websites created by individuals supposedly ranging in age from 16 to 25 years. The three main themes they found were that self-harm was due to homo- or transphobia, that self-harm was due to self-hatred, fear, or shame, and that self-harm was not related to sexuality or gender. Overall, the authors concluded that a lack of support and the necessity of dealing with stigmatization and pathology (i.e., regarding homo- or bisexuality as a mental illness) of identity both contribute to producing self-harm as a coping strategy for LGBT youth facing homo- or transphobia related distress. Moreover, they found evidence that, although negotiating their identities in online spaces may make youth more vulnerable in some aspects, they are also gaining the opportunity to develop their identity by speaking out and articulating themselves.

Summary

Evidence indicates that social networking sites are an important component of the social lives of both heterosexual and sexual minority youth and serve numerous functions. Findings indicate that social networking sites seem to be primarily used for communication with close friends and for maintenance of these relationships. These sites are also becoming an integral part of youth's identity formation, as they explore, develop, and evolve their social identity through presentation and social interactions, online. Despite some negative aspects related to privacy, cyberbullying, sexting, and intensified social comparison, social networking sites seem to provide benefits to self-esteem and positive self-views, as well as give youth an opportunity to

develop a sense of belonging with the social identity of their choice. Furthermore, both new media (i.e., social networking sites) and traditional Internet (i.e., search engines, chat-rooms, blogs) provide a great resource for heterosexual, gender-typical, and sexual and gender minority youth to explore their sexuality, sexual health, and physical health.

From this research, we could infer that sexual minority youth could also use social networking sites and the Internet in such ways, and experience similar benefits, when relating to their sexual identities, rather than general social identities. Furthermore, Tynes' research suggests that African Americans and other racial minorities can use social networking sites to forge what they feel is their "true identity," online, when they may feel restricted in doing so in person (Tynes, García, Giang, & Coleman, 2012). She also suggests that a sense of ethnic identity can weaken the negative psychological effects of discrimination experienced online through providing better psychological adjustment (Tynes, UmaÑa-Taylor, Rose, & Lin, 2012). From this, it could be inferred that sexual minority youth could also use social networking sites to form a "true" sense of identity, if their physical environment inhibits this, and that this developed sense of sexual identity could become a protective factor for them, as well, against discrimination and its negative, psychological outcomes.

Limitations in Current Evidence in the Field

Although there is emerging research on sexual minorities' use of the Internet and its contributions to their identity and well-being, there seems to be a lack of investigation into how sexual minority youth use social networking sites, specifically, in their sexual or gender identity formation, and the consequences this may have. The current literature has several limitations within this issue. First, the majority of research done on sexual minority's online experiences has primarily been qualitative. This research has been useful in pointing out themes in reasons youth

use different sites (e.g., DeHaan, et al., 2012), but quantitative research is necessary to gauge the magnitude of importance of various reasons and behaviors, online. More so, very few of the studies looking at sexual minority youth's online behaviors have had large sample sizes—lending any attempted quantitative (or even qualitative) analysis subject to power bias, and misrepresentation of the population.

Second, in relation to identity, there have not been any studies that look into the protective potential of a well-developed sexual identity, online, nor have there even been very many that look into protective sexual identity, offline. Given research that indicates that a strong ethnic identity is a protective factor, both on- and offline (e.g., Tynes, et al. 2012), it would be useful to examine the potential of sexual minorities' sexual identity to have the same effect. And although there have been studies that show the importance of social support as a protective factor for sexual minority youth (e.g., Hatzenbuehler, 2011), no study has simultaneously examined social support and sexual identity strength in relation to mental health, to examine which, if either, is more significant.

Finally, even though the literature on youth's social networking site use is growing, there has yet to be a study that directly compares heterosexual youth and sexual minority youth's SNS use, simultaneously. Therefore, our knowledge of differences between the groups' motives and outcomes of use is lacking. Indeed, the aforementioned growing body of SNS research predominately focuses on heterosexual youth's use—with very few studies looking at sexual minority youth's use and outcomes, specifically.

The Current Study

As evident above, there is much work that needs to be done to understand sexual minority youth's social networking site use, motives, and behaviors. We found it important to design an

investigation that would begin to address each of the aforementioned issues. Important questions arising out of this investigation include the following: first, do sexual minority youth use social networking sites for sexual or social-sexual identity construction and for seeking social support lacking in their offline world? Second, can online-work relating to sexual identity development or social support protect against the negative psychological outcomes associated with being in a marginalized group, and even increase overall well-being? Third, can online-work regarding sexual identity and social support not only transcend into the offline world, but potentially compensate for a lack of offline support?

To address these questions, the current study investigates sexual minority youth's social networking site uses and behaviors, the strength of their developed sexual identity, their perceived levels of social support, and their overall mental health. When examining mental health among sexual minority youth, it is important to measure participants' amount of social support, as studies such as Hatzenbuehler's (2011) suggest that social support is the primary protective factor against negative mental health outcomes for sexual minority youth. However, because pieces like Tynes' previously mentioned research (2012) suggests that a strong sense of identity would be a robust protective factor against negative mental health outcomes for marginalized youth, our study examines both identity strength and social support to investigate the potential contributions each has on mental health—and also investigates how each interacts with social networking site use, specifically, to potentially affect mental health outcomes.

Therefore, we sought to investigate six hypotheses. First, we hypothesized that heterosexual youth would have higher levels of perceived social support, and better mental health than sexual minority youth, overall (H1). Second, we hypothesized that sexual minority youth would use social networking sites more for the uses of identity exploration than

heterosexuals, overall (H2). Third, we hypothesized that for both groups, those with higher levels of perceived social support would experience better mental health outcomes in relation to their social networking site use, in comparison with participants with lower levels of social support (H3). Fourth, we hypothesized that using social networking sites for the uses of identity exploration and identity expression would relate to better mental health outcomes for both groups (H4). Fifth, we hypothesized that for sexual minority youth (specifically lesbians, gays, and bisexuals), those with a stronger sense of sexual identity would experience better mental health outcomes, related to their social networking site use, than those with a weaker sense of sexual identity (H5). Finally, our sixth hypothesis (H6) was that among LGB youth with lower scores in sexual identity strength and social support, those who are primarily using social networking sites for sexual identity exploration and expression, would experience fewer negative mental health outcomes than those who were not frequently using social networking sites for these compensatory purposes.

Method

Participants

Eight-hundred-and-seventy people consented to take our survey. Out of this sample, 623 completed enough of the survey to be included in the analysis. Respondents identified as exclusively homosexual (n = 48, 7.7%), predominately homosexual (n = 32, 5.1%), bisexual (n = 37, 5.9%), predominately heterosexual (n = 83, 13.3%), exclusively heterosexual (n = 394, 63.2%), not sure (n = 5, 0.8%), or other (n = 24, 3.9%). Sexual minorities were considered those who indicated an identity other than predominately or exclusively heterosexual. This gave us a sample size of 146 sexual minority participants (M = 21 years; SD = 2.87 years). Within this sample, 91 identified as female (62.3%), 52 identified as male (35.6%), and 3 identified as "other" (2.1%). One-hundred-and-four identified as white or Caucasian (71.2%), 6 identified as

black or African American (4.1%), 8 identified as Hispanic (5.5%), 2 identified as Western Asian or Asian-American (1.4%), 6 identified as Eastern Asian or Asian-American (4.1%), 1 identified as South Asian or Asian-American (0.7%), 5 identified as general Asian or Asian-American (3.4%), 4 identified as Native American (2.7%), 7 identified as multi-racial (4.8%), and 3 did not disclose their ethnic identity (2.1%).

The full sample also included 477 heterosexual participants (M = 20; SD = 2.76 years). Within this group, 296 identified as female (62.1%), 180 identified as male (37.7%), and 1 identified as "other" (0.2%). Three-hundred-and-forty-six identified as white or Caucasian (72.5%), 8 identified as black or African American (1.7%), 18 identified as Hispanic (3.8%), 8 identified as Western Asian or Asian-American (1.7%), 38 identified as Eastern Asian or Asian-American (8.0%), 10 identified as South Asian or Asian-American (2.1%), 6 identified as Southeast Asian or Asian-American (1.3%), 21 identified as general Asian or Asian-American (4.4%), 1 identified as Native American (0.2%), 11 identified as multi-racial (2.3%), and 10 did not disclose their ethnic identity (2.1%).

Procedure

Data for this study come from an online survey that asked participants about their social support, sexual identity, online social networking experiences, and their general mental health. To be eligible for participation, people had to be between the ages of 18 and 24, and could be of any sexual identity—although those of lesbian, gay, bisexual, or other same-sex attraction (LGB) identities represented the population of interest. Participants were recruited via reaching out to various LGBTQ support groups and organizations (throughout the country, but primarily in the state of Michigan), as well via the University of Michigan Office of Registrar. LGBTQ groups contacted were asked to forward an email explaining the purpose of our study to people on their

organizations' listserv. A flyer was sent to the organizations, as well, if they preferred to post that in their centers. A similar email was sent out to a random sampling of 4,004 undergraduates at the University of Michigan, via the Office of Registrar.

The email and flyer included a link to the survey on Qualtrics. The email and flyer also mentioned the opportunity for participants to enter themselves in a randomized drawing for one of 70 $10 Amazon.com gift cards, or one of 30 $10 iTunes gift cards.

The survey was designed using Qualtrics' online survey application via the University of Michigan Department of Psychology group account, and was accessible only by the project coordinator and the advising professor. Participants followed the link found in either their recruitment email or on a flyer that took them to the first page of the survey. The first page of the survey explained the goals of study, ensured the participants' anonymity, and asked, if they were 18 or older, whether or not they consented to take place in the survey. If they chose not to consent, the survey was closed. However, if participants did opt to consent to take part in our study, they were then taken to a page that asked them to enter their age (in years and months). If participants were under 18 years old, their survey was ended. From there, participants answered demographic questions, before completing the measures. On average, the survey took between 10-15 minutes to complete. Upon completion of the survey, participants were directed to a page that asked if they would like to enter themselves into a drawing to potentially receive one of 70 $10 Amazon.com gift cards, or one of 30 $10 iTunes gift cards. If they chose no, their survey was ended. However, if they chose to enter in the drawing, they were taken to a page that asked participants to email the project coordinator a specific email subject-line and body given to them at the end of the survey. They were ensured their entry into the drawing would not be linked to their survey responses. Reminder emails were sent out to the participants contacted via the

University of Michigan's Registrar Office and LGBTQ organizations at the university approximately one week before the survey was closed.

Measures

Demographics. In addition to the participant information described above, participants also indicated the highest level of education each parent had received, as well as the highest level they hoped to receive (in years since Kindergarten or equivalent). Religiosity was assessed via the following three items, each scored from 1 (not at all) to 5 (very much/every week): how religious are you; how often do you attend religious services; how often do you pray. A mean score was computed across the three items such that higher scores equaled a higher degree of religiosity (3 items; $\alpha = 0.93$). Descriptive statistics for the demographics used in our analysis of our sample can be seen in Table 1.

Social Support. To measure participants' perceived social support, we used the MOS Social Support Survey (Sherbourne & Stewart, 1991). This measure consists of four separate social support subscales, although for our survey we only used the subscale that specifically analyzes "emotional/informational social support." This subscale consists of 8 items, which each ask how often the participant has someone who can provide a certain type of support (i.e., "Someone you can count on to listen to you when you need to talk"). Response options ranged from 1 (none of the time) to 5 (all of the time). We added our own item that asked participants how often they had "someone of a similar community to relate to," to try and assess sexual minority community support, specifically. Mean scores were computed across the 9 items ($\alpha = 0.93$) such that higher scores indicate greater perceived social support.

Lesbian, Gay, and Bisexual Identity Development. To measure participants' strength of sexual identity, we used the Lesbian, Gay, and Bisexual Identity Development Scale (Mohr &

Kendra, 2011). The scale is a revised version of the Lesbian and Gay Identity scale, modified to be able to assess bisexual identity, as well. The scale contains 27 items, and is made up of six subscales meant to assess different dimensions of LGB identity discussed in clinical and theoretical literature. These six subscales are *internalized homonegativity/binegativity* (i.e., "I would rather be straight if I could;" 5 items; $\alpha = 0.84$), *need for privacy* (i.e., "I prefer to keep my same-sex romantic relationships private;" 6 items; $\alpha = 0.79$), *need for acceptance* (i.e., "I will never be able to accept my sexual orientation until all of the people in my life have accepted me;" 5 items; $\alpha = 0.75$), *identity confusion* (i.e., "I'm not totally sure what my sexual orientation is;" 4 items; $\alpha = 0.89$), *difficult process* (i.e., "Coming out to my friends and family has been a very lengthy process;" 5 items; $\alpha = 0.83$), and *superiority* (i.e., "I look down on heterosexuals;" 2 items; $\alpha = 0.66$). Participants responded to each item, using a 1 (disagree strongly) to 7 (agree strongly) response scale, with responses indicating how much each statement reflects their personal experience as a sexual minority person. A mean score was created across the items for each sub-scale. In addition, a second-order factor called *Negative Identity* was computed by averaging *homonegativity, need for privacy, need for acceptance,* and *difficult process*. The higher the average scores for the *Negative Identity* score, its subscales, and *identity confusion*, the lower the identity strength. The higher the average score for *superiority*, the greater the identity strength.

Social Networking Site Use. To assess participants' social networking site use frequency and behaviors, we developed for this study a "Social Networking Site Use" scale. The scale items were generated after an extensive review of the research literature on the social networking site uses and behaviors of adolescents and young adults. After an analysis of the literature, it was found that there was not a popular, standardized scale used by multiple studies,

and most researchers developed their own measures tailored to their studies' needs. Some common themes did emerge from the literature, and those themes were used as subscales in our own measure. Participants were first asked a few questions assessing how often they use social networking sites, which sites they use, what age they started using the sites, and what their favorite, as well as most commonly used, social networking site is. The remaining 30 items assess different motives for SNS use by asking participants to rate how much each statement applies to them (e.g., "I use social networking sites to communicate with friends," "I use social networking sites to seek groups of people similar to myself"), with response options including "never (1)," "rarely (2)," "sometimes (3)," "often (4)," "all of the time (5)," or "N/A (null)."

The SNS Use scale is scored by finding the averages of each individual subscale. The higher the average score for each subscale, the more the participant uses social networking sites for that specific purpose. Five subscales were determined based on a principal axis factoring analysis, with Kaiser Normalization rotation method. Subscales included *Identity Exploration* (i.e., "I use social networking sites to explore aspects of myself;" 6 items; $\alpha = 0.84$), *Identity Expression* (i.e., "I use social networking sites to speak my mind;" 2 items; $\alpha = 0.93$), *Social Communication* (i.e., "I use social networking sites to communicate with my friends;" 6 items; $\alpha = 0.77$), *Finding a Partner* (i.e., "I use social networking sites to find romantic relationships;" 2 items; $\alpha = 0.78$), *Witnessing Discrimination* (i.e., "I witness others experience discrimination due to their sexual identity on SNS, specifically;" 2 items; $\alpha = 0.81$), and *LGB Identity Work* (i.e., "I use social networking sites to learn about my sexuality;" 4 items; $\alpha = 0.89$ for only sexual minority sample). Within the *LGB Identity Work* subscale, two further subscales were established: *LGB Identity Work with Others* (i.e., "I use social networking sites as a way to stay

engaged with the LGB community;" 2 items; α = 0.91), and *Sexual Identity Work* (i.e., "I use social networking sites to discuss issues of sexual identity, online;" 2 items; α = 0.74).

Mental Health and Wellbeing. Two scales were used to assess participants' overall level of negative mental health symptoms (i.e., loneliness, depression, anxiety, and hostility). To measure participants' levels of perceived loneliness, a short scale was used from a 2004 study (Hughes, Waite, Hawkley, & Cacioppo, 2004). This scale is three items long, asking participants how often do they "feel that [they] lack companionship," "feel left out," and "feel isolated from others." Response options are "hardly ever," "some of the time," or "often." A mean Loneliness score is computed across the three items, with the highest possible score of three and a lowest possible score of one (α = 0.83).

To assess participants' mental health symptoms, more broadly, 26 items from the Brief Symptom Inventory were used (Derogatis & Melisaratos, 1983), which we titled "Stress and the Body," for our survey. The items used assessed participants' mental health through five subscales that measure levels of *anxiety* (6 items; α = 0.86), *depression* (6 items; α = 0.88), *hostility* (5 items; α = 0.77), *paranoia* (5 items; α = 0.74), and *sensitivity* (4 items; α = 0.83). Participants are asked to rank ("not at all" [1], "a little bit" [2], "moderately" [3], "quite a bit" [4], "extremely" [5], or "N/A" [null]) how much they were distressed by different sentiments (i.e., "feeling easily annoyed or irritated," "suddenly scared for no reason"). The score for the Stress and the Body scale is taken by finding the average score for each subscale.

Results

Preliminary Analyses

Descriptive statistics for the main study variable are provided in the first two columns of Table 1. The mean levels for social support and sexual identity strength (assessed only for

sexual minority youth) were both found to be relatively high. Reported frequency of social networking sites also was high, with the mean values indicating all youth using the sites "often." Concerning the number of sites used, we found that youth used close to 3 different social networking sites. The mean scores for each social networking site motive indicate that using social networking sites for social communication was the greatest motive (M = 3.40), with identity expression being the next prevalent motive (M = 2.58). Mean scores for negative mental health symptoms were overall relatively low, indicating relatively high levels of mental health. On a 1-5 scale, the highest reported symptom was sensitivity (M = 2.00), followed by depression (M = 1.93).

As the first preliminary analysis, we used analyses of variance to examine differences in the main variables for sexual minority (SM) and Heterosexual youth, in order to test Hypotheses 1 and 2. Results are listed in the final columns of Table 1. Concerning demographics, both sexual minority and heterosexual youth had similar educational backgrounds, but heterosexual youth were, on average, significantly more religious than SM youth. Our sexual minority sample was significantly older than the heterosexual sample, but this could have been due to some outlier participants in the sample that were over 30-years-old. For the main study variables, both sexual minority and heterosexual youth exhibited relatively high levels of social support, with no significant difference between the two. However, in terms of reasons for using social networking sites, we did find that sexual minority youth reported higher levels of each motive, as well as a higher number of sites used, in comparison with heterosexual youth. Yet, both groups experienced a similar frequency of social networking site use. Finally, as expected, sexual minority youth reported overall worse mental health, as they were found to experience higher levels of loneliness, anxiety, and depression in comparison with their heterosexual peers.

As the second set of preliminary analyses, we performed intercorrelations among the social networking sub-scales, to further test its reliability as a newly designed scale. Results are listed in Table 2. All items show a strong relation with each other, with the strongest associations being between LGB Identity Work, LGB Identity Work with Others, and Sexual Identity Work. Both LGB Identity Work with Others and Sexual Identity Work are subscales of LGB Identity Work, resulting in their very strong relation.

As the third set of preliminary analyses, zero-order correlations were calculated between social support and mental health symptoms for the entire sample, and both sexual minority and heterosexual youth, separately. Results are indicated in Table 3. As found in previous literature, higher levels of social support were related to lower levels of negative mental health symptoms, for the full sample and for the heterosexual sub-sample. However, among sexual minority youth, higher levels of social support were only related to lower levels of loneliness and paranoia.

Social Networking Sites and Social Support

To begin testing Hypothesis 3, concerning whether or not social networking site use relates to perceived levels of social support, we calculated zero-order correlations between social support and our seven main social networking site use variables for both sexual minority and heterosexual youth, separately. Results are indicated in Table 4. Surprisingly, social support showed no relation with social networking site use behaviors for sexual minority youth. For heterosexual youth, higher levels of social support was related to a greater frequency of social networking sites use, and a higher number of different sites used. More frequent use of sites for identity exploration was associated with lower levels of social support, however.

Mental Health in Relation to SNS Use Motives

To test Hypothesis 4, concerning whether social networking site use relates to mental health outcomes, we calculated zero-order correlations between the reported levels of negative mental health symptoms and the seven variables representing social networking site use behaviors. Results are provided in Table 5. For sexual minority youth, greater frequency of site use, greater use for identity exploration, and greater dependency on social networking sites were related to higher levels of loneliness. Higher use for identity expression was associated with higher levels of depressive symptoms, whereas greater number of sites used was associated with higher levels of hostility. Higher levels of all social networking site use behaviors were associated with higher levels of sensitivity, except for LGB Identity Work and Witnessing Discrimination. Among heterosexual youth, frequency of site use and number of sites used showed no relation to mental health, whereas greater use for identity exploration and identity expression, as well as higher levels of witnessing discrimination and site dependency, all are related to greater levels of negative mental health symptoms, overall. In general, more significant relations between social networking use and negative mental health emerged for heterosexual youth than for their sexual minority peers.

Sexual Identity Strength in Relation to SNS and Mental Health

For sexual minority youth, specifically, we were interested in seeing whether or not high versus low levels of identity strength interacted with social networking site behaviors' contribution to mental health—relating to Hypothesis 5. To test this, as well as further test Hypothesis 6, we divided sexual minority youth into two groups based on a median-split for high versus low levels of negative sexual identity (a higher level of negative sexual identity indicates poorer sexual identity strength). We then ran zero-order correlations between social networking site use behaviors and mental health symptoms. Results are provided in Table 7. Overall,

participants with a poorer sexual identity (high negative sexual identity) experienced more significant links between social networking site behaviors and worse mental health. Most notably, greater levels of SNS dependency related to higher levels of negative mental health symptoms, except for hostility and paranoia. Also, frequency of site use was associated with higher levels of loneliness and sensitivity, similar to the findings for sexual minority youth with high levels of social support. Among sexual minority youth with a stronger sexual identity (low negative sexual identity), only two significant associations emerged: here, greater site use for identity exploration and expression was each associated with higher levels of sensitivity.

SNS Links to Social Support, Identity Development, and Mental Health

To begin testing Hypothesis 6, and further test Hypothesis 3, we assessed how high versus low levels of social support interact with social networking site use's potential relation with mental health, by separating both sexual minority and heterosexual youth into two groups, each, based on a median-split of high versus low levels of social support. Then, zero-order correlations were calculated between social networking site behaviors and mental health symptoms for each group. Results are indicated in Table 6. Among sexual minority youth, participants with higher levels of social support experienced higher levels of negative mental health related to higher levels of social networking site use behaviors, in general. Specifically, higher levels of SNS dependency and use for identity exploration related to greater levels of poor mental health among those with higher social support in comparison to those with lower social support. However, among those with lower social support, a greater number of sites used had a stronger relation with negative mental health.

For heterosexual youth, the overall pattern was similar, as those reporting higher levels of social support also reported more negative mental health associated with greater levels of most

social networking site behaviors. Both high and low social support groups experienced poorer mental health related to higher levels of identity exploration. Those high in social support experienced more negative mental health associated with greater levels of witnessing discrimination, and with social networking site use dependency.

In order to assess which variables from our study best predict mental health outcomes for sexual minority youth, we conducted a regression analyses among the social support, sexual identity strength, and six social networking site variables, and negative mental health symptoms for sexual minority youth in two steps. These analyses sought to provide more directional, predictive results, in order to further test Hypotheses 3, 4, 5, and, mainly, 6. The first step involved determining which demographic variables should be controlled for in the regression. This was done by calculating zero-order correlations between the six negative mental health symptoms and the following nine demographic variables: sex, age, mother's education level, father's education level, religiosity, and Asian, Latino, Black, or Multiracial ethnic identity. The results are indicated in Table 8. We found that sex (being male), self-identification as "Latino," and religiosity all had significant relations with mental health. We interpreted this result as an indication that these specific demographics could potentially confound contributions of social support, sexual identity strength, and social networking site use to mental health. Therefore, we decided to control for these variables in our regression.

As the second step, a simultaneous regression analysis was conducted in which the six mental health variables served as the dependent variables, and the demographics, social support, negative sexual identity, and social networking site variables were entered together as predictors. Results are provided in Table 9. Overall, the strongest predictors for poor mental health (higher levels of negative mental health symptoms) were higher levels of social networking site use for

identity exploration and identity expression. More specifically, we found that greater use of SNS for identity exploration predicted higher levels of loneliness, paranoia, and sensitivity, and greater use for identity expression predicted higher levels of depression and hostility. Conversely, the strongest predictors for better mental health (lower levels of negative mental health symptoms) were higher levels of social support, and greater use of social networking sites for LGB identity work. This was seen as higher levels of social support predicted lower levels of both loneliness and paranoia, and as greater use of SNS for LGB identity work predicted lower levels of anxiety, hostility, and paranoia. Together, the variables tested here accounted for from 2.1% to 18.5% of the variance in sexual minority students' mental health. When the same regression was performed for the whole sample, with sexual orientation tested as a predictor for mental health, sexual minority status was only associated with greater levels of perceived loneliness ($\beta = 0.10$, $p < 0.05$; Adjusted $R^2 = .233$; Equation $F = 19.122$, $p < 0.001$).

Discussion

Overall, our results indicate that although sexual minority youth use social networking sites at the same frequency as their heterosexual peers, sexual minority youth express stronger motives, overall, for using the sites. However, in terms of these social networking site use motives, greater use for identity exploration, and greater site dependency, were most frequently associated with worse negative mental health outcomes. Social networking site use motives and behaviors were most frequently related to loneliness, and sensitivity. Our regression analyses further showed that among sexual minority youth, greater site use for identity exploration and identity expression predicted various worse mental health outcomes. However, the analyses also showed that higher levels of social support and site use for LGB identity development predicted

better mental health outcomes. Results are further summarized below in terms of the specific hypotheses.

Hypothesis 1: Sexual Orientation Differences in Social Support and Mental Health

The first hypothesis predicted that heterosexual youth would express higher levels of perceived social support, as well as better mental health than sexual minority youth, overall. This hypothesis was partially supported. We found that sexual minority youth experienced higher levels of loneliness, anxiety, and depression, compared to their heterosexual peers. This is concurrent with literature on sexual minority youth (e.g., Lewis, 2009) that implies that sexual minority youth, like many other members of marginalized groups, experience poorer mental health than their non-marginalized peers, overall. However, there was no significant difference between levels of social support within the sexual minority and heterosexual samples. This finding runs counter to existing findings (e.g., Hatzenbuehler, 2011), which indicate that sexual minorities often experience less social support in their offline environments, which usually is related to poorer mental health outcomes. Our results could potentially be caused by the fact that our sampling was predominately from college-aged students, as well as people registered with various LGBTQ community centers and activism groups. Those registered with the sexual and gender minority groups could have a higher level of social support, as they have contact with outreach organizations. Similarly, college students (especially those at the more liberal-minded campuses of the University of Michigan, Wayne State University, and Michigan State University, that we sampled from) often have access to many support groups and student organizations for a variety of identities. Furthermore, given that sexual minority youth expressed greater motives for social networking site use, overall, they could have inflated social support as they are using social networking sites to compensate for a lack of support that they would

otherwise have. As these data are cross-sectional, and temporality and causality cannot be determined, there is no way to speculate as to the accuracy of this idea.

Hypothesis 2: Sexual Orientation Differences in SNS Use and Identity Exploration

Our second hypothesis was that sexual minority youth would use social networking sites more than heterosexual youth for the purpose of identity exploration. This was indeed the case. Identity exploration is an important part of all adolescent and youth development. However, it is possible that sexual minority youth are using social networking sites more for identity exploration because they do not always have the safe and accepting environment offline to do so. It may also be the case that SM youth do not know others, personally, like them in their current offline environment. Therefore, sexual minority youth would be more likely to seek out social networking sites for the specific purpose of developing and exploring their identities. This idea is further supported as sexual minority youth were found to use the sites more for identity expression, too, compared with heterosexuals.

Hypothesis 3: Social Support Level in Relation to SNS and Mental Health

Hypothesis four states that youth with higher levels of social support will experience fewer negative mental health symptoms in relation to their social networking site use, compared to those with lower levels of social support. Although the results indicate that, overall, higher social support is related to and predictive of better mental health, this specific hypothesis was not supported. For the sexual minority youth, we saw that there are more relations between SNS use and poor mental health for those who report high levels of social support than there was for those who report low social support. Interestingly, those with low social support do not have any associations between loneliness and social networking site use, yet those with high social support do—with especially strong relations with greater identity exploration and site dependency.

Furthermore, those high in social support report worse mental health in relation to higher levels of site dependency, while those low in social support did not. Together, these results could indicate that just because sexual minority youth report greater levels of social support, does not mean they are actually utilizing it. The measure used in our study asked for self-report of social support based on how frequently people felt they had different types of people they could go to in certain situations. This does not mean that they necessarily are using those people when they need to. Also, the social support could be defined in the online environment, just as much as in the offline realm. If youth indicate that they have higher levels of social support, but their support is coming from online relationships, it is possible that they feel more vulnerable in their online presentation regarding these relationships. And, finally, there could be an issue of temporality in the report, as was implicated regarding Hypothesis 1.

Hypothesis 4: Mental Health in Relation to SNS Use Motives

Our fourth hypothesis predicted that greater use of social networking sites for identity exploration and identity expression would each relate to ***better*** mental health outcomes for all youth. This hypothesis was not supported. Instead, greater use of SNS for identity exploration was related to worse mental health, overall, for heterosexuals, and to more loneliness and sensitivity for sexual minorities. Greater site use for identity expression was related to higher levels of depression and sensitivity for sexual minority youth, and to greater levels of all mental health problems, except depression and paranoia, for heterosexuals. The regression analyses indicated that, among sexual minority youth, greater SNS use for identity exploration predicted higher amounts of loneliness, paranoia, and sensitivity, and greater SNS use for identity expression predicted higher levels of depression and hostility. It was originally hypothesized that greater identity exploration and expression would relate to better mental health, because

literature suggests that youth who have the opportunity to comfortably and successfully develop and explore their identities have better psychological outcomes (e.g., Waterman, 1982). Yet, the opposite findings could be explained if youth—particularly sexual minorities—are feeling more vulnerable and insecure in their identities, as they present themselves online. The element of social comparison with others could be mediating this effect, too, as youth who present their identities critique and judge their own self and profile based on identities they see as more developed or desirable than their own.

Hypothesis 5: Sexual Identity Strength in Relation to SNS and Mental Health

The fifth hypothesis of the study stated that sexual minority youth with a stronger sense of sexual identity would experience better mental health outcomes, related to their social networking site use, compared to those who had a weaker sense of identity. We did obtain some support for this hypothesis. Sexual minority youth, with a stronger sexual identity (low negative identity), only experienced greater amounts of sensitivity associated with greater site use for identity exploration and expression. Youth with poorer sexual identity strength experienced more negative mental health symptoms associated with greater social networking behaviors or motives. Once again, greater sensitivity was related to higher levels of many social networking behaviors, and greater site dependency was related to worse mental health, overall. These results seem to indicate that sexual identity strength could be a psychological protective factor for sexual minority youth, online. However, this interpretation is weakened by the fact that sexual identity was not predictive of any mental health symptoms, other than sensitivity, in the regression analysis. Further study is needed of the contributions of LGB identity as a protective factor—similar to research that has found ethnic identity a protective factor (Tynes, UmaÑa-

Taylor, Rose, & Lin, 2012). Perhaps it does work in this way in a small sense, but this contribution was outweighed by other factors considered in the regressions (e.g., social support).

Hypothesis 6: SNS for Identity Development and Mental Health

Hypothesis six stated that sexual minority youth with lower levels of sexual identity strength, and social support, would experience better mental health outcomes if they are using social networking sites more for sexual identity development, than those who are not. This hypothesis was partially supported by the data we were able to obtain. We found that sexual minorities low in social support and sexual identity strength did not have any associations between their LGB identity work and negative mental health outcomes. Moreover, our regression analyses indicated that greater use of social networking sites for LGB identity work predicts lower levels of anxiety, hostility, and paranoia. These findings support the notion that sexual identity can be a protective psychological factor, as well as the idea that people can benefit from identity development done via social networking sites, like they can offline. It is important to note that the LGB identity work subscale included items related to an individual's sexual identity exploration and expression, and also one's outreach and engagement with the sexual minority community. Therefore, some of these relations may be mediated by the social support found through the community engagement, as well as (or possibly instead of) the development of one's sexual identity. Assuming the result of the mental health benefit is due to the sexual identity component, this raises the question of why sexual identity work predicts mental health benefits, while general identity work predicts mental health risks. One explanation could be that sexual minority youth are seeking out social networking sites for the specific purpose of engaging in the LGBTQ community and developing their identity as a sexual minority, when they cannot offline. Therefore, their benefits would derive from developing an identity specific to themselves and

others like them, online, as opposed to when either group of youth present their general identity on social networking sites, and must deal with the general sea of social comparisons, which can be detrimental.

Implications

Putting the findings related to our hypotheses in the context of our research questions, we are able to draw even broader implications from our results. Our first question asked if sexual minority youth use social networking sites for sexual identity development and for seeking social support that they might be lacking in their offline environments. Based on our findings, it would appear that sexual minority youth are using social networking sites for seeking both sexual identity development and social support. However, from our data, it is unclear whether or not sexual minority youth are using social networking sites to make-up for a lack of social support or opportunities to develop their sexual identity in the offline world. Future research could include observational data, or measures that specifically deal with individuals' offline identity and behaviors, to analyze the differences between the magnitude of their support and motives offline versus online.

The second research question asked if sexual identity developed online protects against negative mental health outcomes associated with being part of a marginalized group. Our findings suggest that the answer to this question is yes. Again, increased LGB identity work via social networking sites was seen to predict reduced levels of several mental health symptoms, and was not associated with negative mental health for sexual minority youth anywhere else in our results. In conjunction with the research done by Tynes and colleagues (2012) regarding racial and ethnic minorities, these results seem to suggest that people of different marginalized groups can find psychological benefits from developing their group's unique identity, online.

Unfortunately, the analyses we were able to run with our data did not end up allowing use to address social support found online, in the same way.

Finally, the third research question asked whether online development of sexual identity and social support could compensate for a lack-thereof, offline. Although our results are not able to answer this question, directly, the data do start to scratch the surface, providing some evidence that the online work can be compensatory. Sexual minority youth—who reported poorer mental health, overall—are seen to have fewer associations between their social networking site use behaviors and mental health symptoms, in comparison with their heterosexual peers, when considering social support or sexual identity as potential moderators. In conjunction with the discussion regarding Hypothesis 6 about selective exposure and comparison, the finding that sexual minority youth are using a greater number of social networking sites than heterosexuals further suggests that these marginalized youth are actively seeking out something more via social networking sites. Given the relations described above, and the positive benefits predicted by online LGB identity work, it seems as if there is some sort of compensatory association between online identity and social support development compared to the same factors, offline.

Limitations

Of course, these questions cannot be entirely answered by this study, alone. In addition to the constraints noted throughout the discussion section, this study has several other limitations that future research will want to address. First, the data obtained for this study were self-report, cross-sectional data. For many of the measured aspects and tested-relations, having temporal data from a longitudinal study, or even causal data from an experiment, would prove extremely beneficial to clarify some of the less intuitive relations observed, and solidify the predicted ones obtained. Also, using observational data for measures such as mental health and SNS behaviors

would have been useful to validate our findings. However, with variables such as motives, social support, and sexual identity strength, it is difficult to assess without using self-report data.

Another limitation to this study is the scope of data collected. Particularly when assessing data about social networking site motives, it was realized that including items dealing with online social comparison, social support specific to social networking sites, and online social relationships would have helped clarify issues surrounding the ambiguity of some of our findings regarding the potential moderation of social support on mental health related to social networking site use.

Future Directions and Conclusion

Given these limitations, future avenues of research should include narrowing in on the key relationships found in this study—looking at site dependency, sensitivity, and general identity development among sexual minority youth. These future studies should include data collection methods mentioned above, and should work to establish mediating and causal relations for the associations that emerged. On a broader scale, this study paves the way for future research regarding marginalized groups, in general, and their mental health implications of social networking site use. It is interesting to see that even if a group experiences overall worse mental health, they can still find benefits to potentially combat those symptoms via different social networking motives and behaviors. Further research in determining the exact workings of these relations could lead to another avenue of community support and mental health interventions. Through creating and allowing social networking spaces online where people can escape the discrimination and stressful environments they may encounter offline, we can offer people of marginalized groups the chance to develop good mental health and identity online, while at the same time encouraging them to stray away from harmful uses of the sites.

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References

Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *CyberPsychology & Behavior, 12*(2), 209-213. doi: 10.1089/cpb.2008.0228

Barker, V. (2012). A generational comparison of social networking site use: The influence of age and social identity. *International Journal of Aging and Human Development, 74*(2), 163-187. doi: 10.2190/AG.74.2.d

Clarke, B. (2009). Friends forever: How young adolescents use social-networking sites. *IEEE Intelligent Systems*, 22-26. doi: 10.1109/MIS.2009.114

Cover, R. (2012). Performing and undoing identity online: Social networking, identity theories and the incompatability of online profiles and friendship regimes. *Convergence: The International Journal of Research into New Media Technologies, 2*(18), 177-193. doi: 10.1177/1354856511433684

Davila, J., Hershenberg, R., Feinstein, B. A., Gorman, K., Bhatia, V., & Starr, L. (2012). Frequency and quality of social networking experiences: Associations with depressive symptoms, rumination, and co-rumination. *Psychology of Popular Media Culture*, *2*(3), 72-78. doi: 10.1037/a0027512

DeHaan, S., Kuper, L. E., Magee, J. C., Bigelow, L., & Mustanski, B. S. (2012). The interplay between online and offline explorations of identity, relationships, and sex: A mixed-methods study with LGBT youth. *Journal of Sex Research*, *50*(5), 1-14. doi: 10.1080/00224499.2012.661489

Derogatis, L.R., Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine, 13*(3), 595-605. doi: 10.1017/S0033291700048017

Deters, F. g., & Mehl, M. R. (2012). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychological and Personality Science, 3*(5), 579-586. doi: 10.1177/1948550612469233

Foster, D. (1996). Community and identity in the electronic village. *Internet Culture*, 23-37.

Gentile, B., Twenge, J. M., Freeman, E. C., & Campbell, W. K. (2012). The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behavior, 28*, 1929-1933. doi: 10.1016/j.chb.2012.05.012

Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Applied Developmental Psychology, 25*(6), 633-649. doi: :10.1016/j.appdev.2004.09.005

Hatzenbuehler, M. L. (2011). The social environment and suicide attempts in lesbian, gay, and bisexual youth. *Pediatrics, 127*(5), 896-903. doi: 10.1542/peds.2010-3020

Hughes, M.E., Waite, L., Hawkley, L., Cacioppo, J. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging, 26*(6), 655-672. doi: 10.1177/0164027504268574

Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2012). "Facebook Depression?" Social networking site use and depression in older adolescents. *Journal of Adolescent Health, 52*(1), 128-130. doi: 10.1016/j.jadohealth.2012.05.008

Kavanaugh, A., Carroll, J. M., Rosson, M. B., Zin, T. T., & Reese, D. D. (2005). Community networks: Where offline communities meet online. *Journal of Computer-Mediated Communication, 10*(4). doi: 1111/j.1083-6101.2005.tb00266.x

Kim, J., LaRose, R., & Peng, W. (2009). Loneliness as the cause and the effect of problematic Internet use: The relationship between Internet use and psychological well-being. *CyberPsychology & Behavior, 12*(4), 451-455. doi: 10.1089/cpb.2008.0327

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., Scherlis W. (1998). Internet paradox. A social technology that reduces social involvement and psychological well-being? *American Psychology, 53*(9), 1017-1031. doi: 10.1037/0003-066X.53.9.1017

Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., Shablack, H., Jonides, J., Ybarra, O. (2013). Facebook use predicts declines in subjective well-being in young adults. *PLOS One*, *8*(8), 1-6. doi: 10.1371/journal.pone.0069841

Kuper, L. E., Nussbaum, R., & Mutanski, B. (2012). Exploring the diversity of gender and sexual orientation identities in an online sample of transgender individuals. *Journal of Sex Research*, *49*(2-3), 244-254.

Lewis, M.N. (2009). Mental health in sexual minorities: recent indicators, trends, and their relationships to place in North America and Europe. *Health Place*, *15*(4), 1029-1045. doi: 10.1016/j.healthplace.2009.05.003

Livingstone, S. (2008). Taking risky opportunities in youthful content creation: teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media & Society*, *10*(3), 393-411. doi: 10.1177/1461444808089415

Manago, A. M., Graham, M. B., Greenfield, P. M., & Salimkhan, G. (2008). Self-presentation and gender on MySpace. *Journal of Applied Developmental Psychology*, *29*(6), 446-458. doi: :10.1016/j.appdev.2008.07.001

Mazur, E., & Richards, L. (2011). Adolescents' and emerging adults' social networking online: Homophily or diversity? *Journal of Applied Developmental Psychology*, *32*(4), 180-188. doi: 10.1016/j.appdev.2011.03.001

McDermott, E., Roen, K., & Piela, A. (2013). Explaining self-harm: Youth cybertalk and marginalized sexualities and genders. *Youth & Society*. doi: 10.1177/0044118X13489142

Moreno, M. A., & Kolb, J. (2012). Social networking sites and adolescent health. *Pediatric Clinics of North America, 59*(3), 601-612. doi: 10.1016/j.pcl.2012.03.023

Mohr, J., Kendra, M. (2011). Revision and extension of a multidimensional measure of sexual minority identity: the Lesbian, Gay, and Bisexual Identity Scale. *Journal of Counseling Psychology, 58*(2), 234-245. doi: 10.1037/a0022858

Nabeth, T. (2009). Social web and identity: A likely encounter. *Identity in the Information Society, 2*(1), 1-5. doi: 10.1007/s12394-009-0029-z

Nicholas, J. (2010). The role of internet technology and social branding in improving the mental health and wellbeing of young people. *Perspectives in Public Health, 130*(2), 86-90. doi: 10.1177/1757913908101797

Pascoe, C. J. (2011). Resource and risk: Youth sexuality and New Media use. *Sexuality Research and Social Policy, 8*(1), 5-17. doi: 10.1007/s13178-011-0042-5

Pempek, T. A., Yermolayeva, Y. A., & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology, 30*(3), 227-238. doi: 10.1016/j.appdev.2008.12.010

Pingel, E. S., Bauermeister, J. A., Johns, M. M., Eisenberg, A., & Leslie-Santana, M. (2013). "A safe way to explore": Reframing risk on the Internet amidst young gay men's search for identity. *Journal of Adolescent Research, 28*(4), 453-478. doi: 10.1177/0743558412470985

Shaw, L. H., & Gant, L. M. (2002). In defense of the Internet: The relationship between Internet communication and depression, loneliness, self-esteem and perceived social support. *CyberPsychology & Behavior, 5*(2), 157-171. doi: 10.1089/109493102753770552

Sherbourne, C.D., Stewart, A.L. (1991). The MOS social support survey. *Social Science Medicine, 32*(6), 705-714. doi: 10.1016/0277-9536(91)90150-B

Subrahmanyam, K., & Greenfield, P. M. (2008). Virtual worlds in development: Implications of social networking sites. *Journal of Applied Developmental Psychology*, 29(6), 417-419. doi: :10.1016/j.appdev.2008.07.004

Subrahmanyam, K., Reich, S. M., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology, 29*(6), 420-433. doi: 10.1016/j.appdev.2008.07.003

Suzuki, L. K., & Calzo, J. P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexualtiy. *Applied Developmental Psychology, 25*(6), 685-698. doi: 10.1016/j.appdev.2004.09.002

Teppers, E., Luyckx, K., Klimstra, T. A., & Goossens, L. (2013). Loneliness and Facebook motives in adolescence: A longitudinal inquiry into directionality of effect. *Journal of Adolescence*. doi: 10.1016/j.adolescence.2013.11.003

Tynes, B. M. (2007). Internet safety gone wild?: Sacrificing the educational and psychosocial benefits of online social environments. *Journal of Adolescent Research, 22*(6), 575-584. doi: 10.1177/0743558407303979

Tynes, B. M., García, E. L., Giang, M. T., & Coleman, N. E. (2012). The racial landscape of social networking sites: Forging identity, community, and civic engagement. *A Journal of Law and Policy for the Information Society, 7*(1), 701-730.

Tynes, B. M., UmaÑa-Taylor, A. J., Rose, C. A., & Lin, J. (2012). Onlinle racial discrimination and the protective function of ethnic identity and self-esteem for African American adolescents. *Developmental Psychology, 48*(2), 343-355. doi: 10.1037/a0027032

Vitak, J., & Ellison, N. B. (2012). 'There's a network out there you might as well tap': Exploring the benefits of and barriers to exchanging informational and support-based resources on Facebook. *New Media & Society*, *15*(2), 243-259. doi: 10.1177/1461444812451566

Waterman, A.S. (1982). Identity development from adolescence to adulthood: An extension of theory and a review of research. *Developmental Psychology*, *18*(3), 341-358. doi: 10.1037/0012-1649.18.3.341

Table 1.

Means of social support, sexual identity, demographics, SNS, and mental health for both sexual minority and heterosexual samples (Hypotheses 1 and 2).

	M	S.D.	Sexual Minority M	Heterosexual Youth M	F of Group Diff.
Social Support	4.07	.80	4.05	4.07	.101
Sexual Identity Strength	1.49	.85	2.32		
Demographics					
Age (in years)	20.25	2.81	21.00	20.03	13.693***
Mother's Education	16.30	2.52	16.01	16.39	2.573
Father's Education	16.73	3.03	16.47	16.81	1.431
Participant's Education	18.96	2.27	18.90	18.98	.149
Religiosity	2.56	1.34	2.07	2.72	27.305***
SNS Variables					
Frequency of site use	4.21	.91	4.32	4.17	2.789
Number of sites used	2.63	1.31	2.86	2.56	5.789*
Identity Exploration	1.94	.79	2.37	1.81	61.425***
Identity Expression	2.58	1.15	3.01	2.44	28.141***
Finding Partners	1.27	.57	1.48	1.20	27.047***
Social Communication	3.40	.77	3.52	3.37	4.088*
LGB Identity Work	1.47	.83	2.34		
LGB Work with Others	1.47	.91	2.39		
Witnessing Discrimination	2.04	.99	2.64	1.86	74.982***
Dependency	2.45	.70	2.66	2.39	16.778***
Mental Health Variables					
Loneliness	1.80	.59	1.93	1.77	8.911**
Anxiety	1.73	.76	1.86	1.69	6.011*
Depression	1.93	.85	2.06	1.89	4.725*
Hostility	1.56	.59	1.62	1.54	1.825
Paranoia	1.64	.68	1.68	1.62	.715
Sensitivity	2.01	.90	2.13	1.97	3.437

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 2.

Inter-correlations among social networking site use variables.

	Freq. of site use	ID Explore	ID Express	Finding Partners	Social Comm.	LGB ID Work	LGB Work w/ Others	Sex ID Work	Witness Disc.	Dependency
Frequency of site use		.25***	.55***	.05	.31***	.13***	.13**	.14***	.16***	.58***
ID Explore			.54***	.42***	.39***	.65***	.58***	.67***	.43***	.47***
ID Express				.19***	.40***	.43***	.39***	.45***	.32***	.39***
Finding Partners					.14***	.43***	.44***	.41***	.23***	.13**
Social Comm.						.23***	.21***	.23***	.22***	.49***
LGB ID Work							.96***	.96***	.50***	.26***
LGB Work w/ Others								.83***	.47***	.24***
Sex ID Work									.51***	.27***
Witness										.21***
Dependency										

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 3.

Zero-order correlations between social support and mental health.

	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Social Support—All	-.37***	-.20***	-.30***	-.23***	-.28***	-.21***
Heterosexuals	-.39***	-.25***	-.35***	-.28***	-.30***	-.25***
Sexual Minorities	-.29***	.00	-.13	-.08	-.19*	-.08

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 4.

Zero-order correlations between social networking site use and perceived social support (Hypothesis 4).

Sexual Minority Youth	Social Support
Frequency of site use	-.06
Number of sites used	.09
Identity Exploration	-.04
Identity Expression	-.05
LGB Identity Work	-.06
Witnessing Discrimination	.08
Dependency	.03
Heterosexual Youth	
Frequency of site use	.16***
Number of sites used	.19***
Identity Exploration	-.12**
Identity Expression	-.02
Witnessing Discrimination	-.06
Dependency	.03

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 5.

Zero-order correlations between social networking site use and mental health (Hypothesis 3).

Sexual Minority Youth	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Frequency of site use	.22**	.07	.09	.16	.07	.25**
Number of sites used	.09	.07	.11	.22**	.13	.20*
Identity Exploration	.23**	.03	.15	.06	.14	.29***
Identity Expression	.08	.07	.21*	.16	.15	.19*
LGB Identity Work	.07	-.09	.00	-.07	-.05	.09
Witnessing Discrimination	.12	.01	.06	.03	.05	.16
Dependency	.26**	.13	.15	.07	.11	.29***
Heterosexual Youth						
Frequency of site use	-.05	-.06	-.05	-.03	-.01	.02
Number of sites used	-.08	-.01	-.03	-.05	-.00	.07
Identity Exploration	.30***	.24***	.29***	.19***	.28***	.29***
Identity Expression	.10*	.10*	.09	.11*	.09	.10*
Witnessing Discrimination	.11*	.13**	.13**	.15***	.17***	.17***
Dependency	.18***	.10*	.13**	.03	.11*	.20***

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 6.

Zero-order correlations between social networking site use and mental health at low and high levels of perceived social support (Hypothesis 4 and 6).

SEXUAL MINORITY YOUTH

Low Social Support	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Frequency of site use	.12	.08	.02	.15	-.00	.17
Number of sites used	.21	.25*	.20	.34**	.27*	.37**
Identity Exploration	-.01	.03	.08	-.04	.02	.25*
Identity Expression	.07	.12	.27*	.20	.13	.30*
LGB Identity Work	-.06	-.05	.02	-.09	-.07	.11
Witnessing Discrimination	.06	.01	.05	-.13	.03	.14
Dependency	.13	-.01	.05	-.01	-.03	.18
High Social Support						
Frequency of site use	.29*	.08	.16	.16	.14	.33**
Number of sites used	.03	-.04	.05	.13	.03	.08
Identity Exploration	.45***	.04	.22	.18	.27*	.33**
Identity Expression	.09	.04	.14	.13	.18	.10
LGB Identity Work	.18	-.12	-.03	-.04	-.04	.06
Witnessing Discrimination	.16	.02	.06	.24*	.06	.19
Dependency	.38***	.22	.26*	.16	.26*	.40***

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 6.

HETEROSEXUAL YOUTH

Low Social Support	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Frequency of site use	.02	-.10	-.03	-.05	-.00	.00
Number of sites used	-.01	-.01	-.01	-.06	.06	.11
Identity Exploration	.24***	.14*	.18**	.11	.25***	.23***
Identity Expression	.12	.06	.09	.08	.09	.10
Witnessing Discrimination	.11	.11	.09	.12	.18**	.16*
Dependency	.18**	.09	.12	.03	.11	.23***
High Social Support						
Frequency of site use	-.02	.02	-.01	.03	.03	.07
Number of sites used	-.03	.04	.03	.01	.01	.09
Identity Exploration	.32***	.31***	.38***	.24***	.26***	.33***
Identity Expression	.10	.13*	.10	.16*	.09	.10
Witnessing Discrimination	.10	.15*	.16**	.17**	.14*	.17**
Dependency	.20***	.11	.15*	.03	.11	.19**

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 7.

Zero-order correlations between social networking site use and mental health at low and high levels of negative sexual identity among sexual minority youth (Hypotheses 5 and 6).

Low Negative Identity	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Frequency of site use	.17	-.08	-.01	.05	.03	.14
Number of sites used	.07	-.03	.04	.09	.09	.17
Identity Exploration	.22	-.03	.14	.13	.24	.37**
Identity Expression	.09	.09	.15	.20	.23	.28*
LGB Identity Work	.12	-.17	-.06	-.10	.04	.17
Witnessing Discrimination	.11	.01	-.07	.01	.16	.12
Dependency	.12	-.06	-.01	-.01	.04	.14
High Negative Identity						
Frequency of site use	.37**	.10	.21	.18	-.01	.27*
Number of sites used	.12	.11	.17	.32**	.13	.21
Identity Exploration	.22	.12	.20	-.02	.01	.26*
Identity Expression	.12	.08	.27	.11	.03	.17
LGB Identity Work	.11	.05	.19	-.03	-.13	.20
Witnessing Discrimination	.18	.05	.17	.05	-.06	.33**
Dependency	.36**	.30*	.30*	.08	.09	.33**

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 8.

Zero-order correlations between demographic background factors and mental health outcomes for sexual minority youth.

	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Sex	.-.07	.03	-.01	-.06	-.03	.10*
Age	-.02	-.00	-.05	-.04	.04	-.07
Mother Ed.	.07	.06	.08	.06	-.04	.02
Father Ed.	.01	.08	.06	.09*	-.01	.01
Religiosity	-.10*	-.09*	-.12**	-.06	-.02	-.08*
Asian	.01	-.01	-.00	-.03	.01	.01
Latino	-.03	.04	.02	.08*	.12**	.08
Black	.01	-.07	-.06	-.07	-.07	-.06
Multiracial	-.00	.01	.04	-.01	-.01	-.05

Note. *p≤.05; **p≤.01; ***p≤.001.

Table 9.

Simultaneous regressions predicting mental health outcomes for sexual minority youth.

	Loneliness	Anxiety	Depression	Hostility	Paranoia	Sensitivity
Sex	-.18*	.01	-.08	-.02	-.08	.02
Latino	-.14	-.03	-.10	.06	.04	.02
Religiosity	.05	-.02	-.08	-.11	-.04	-.09
Social Support	-.30***	-.00	-.08	-.01	-.27**	-.03
Negative Sexual ID	.02	.01	.13	.14	-.13	.28**
Site Use Frequency	.02	-.15	-.15	.07	-.14	-.05
ID Exploration	.28*	.09	.19	.08	.34*	.29*
ID Expression	-.12	.22	.27*	.32*	.21	.09
LGB ID Work	-.12	-.33*	-.25	-.35*	-.43**	-.21
Witnessing Discrimination	.14	.10	.05	.10	.16	.15
Dependency	.17	.09	.06	-.14	-.01	.05
Adjusted R2	.185	-.021	.054	.042	.092	.145
Equation F	3.645***	.756	1.659	1.503	2.173*	2.967**

Note. *p≤.05; **p≤.01; ***p≤.001. Standardized coefficients (betas) reported.