

The minority strengths model: Development and initial path analytic validation in racially/ethnically diverse LGBTQ individuals

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Abstract

Objective: The minority stress model and much research based upon it tend to adopt and reinforce a deficit-based approach. This study created and initially validated the minority strengths model, which by contrast outlines how personal and collective strengths in minority populations create resilience and positive mental and physical health.

Materials and Method: A sample of 317 lesbian, gay, bisexual, transgender, and queer individuals from diverse racial/ethnic backgrounds completed a national online survey.

Results: A minority strengths path model was generated with statistically significant paths and good fit indices, including all possible significant indirect effects. The model explained 16.8% of the variance in identity pride, 19.7% in self-esteem, 32.9% in resilience, 41.6% in mental health, and 13.0% in positive health behaviors.

Conclusions: The minority strengths model holds promise to stimulate research on the personal and collective strengths of minority populations and the ways in which strengths generate resilience and positive mental and physical health.

KEYWORDS

mental health, minority stress model, resilience, strengths

The minority stress model is based on the premise that minority identities and values conflict with those from socially dominant groups, detrimentally impacting minority members' experiences of the social environment (Meyer, 2003). The model suggests minority stressors, which are socially based, chronic, and unique to the stigmatized group—such as discrimination, stigma, and prejudice—contribute to a stressful and hostile environment, which exacerbate mental health problems (Meyer, 2003). In the 15 years since the minority stress model was developed, it has been cited over 6,700 times with nearly 1,100 citations in 2018 alone. The minority stress model was originally proposed for use with sexual minority individuals and mental health outcomes, but it has since been used with a wide range of minority populations, outcomes, and stressors. Examples of these applications include gender minority, transgender, and gender-nonconforming individuals (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013), cross-cultural contexts (Pachankis & Bränström, 2018), disability (Lund, Nadorff, Thomas, & Galbraith, 2018), race/ethnicity (Battle, Peterson, Lucas, & Applewhite, 2017), older adults (Fredriksen-Goldsen, Cook-Daniels et al., 2014), and suicide (Haas et al., 2010), among many other diverse applications. These applications and the growing body of literature have primarily focused on one or more specific minority identities, stressors, and negative outcomes of the model.

Meyer (2015) has noted that the minority stress model is limited in that it only lists coping and social support as strength-based factors, arguing for the importance of incorporating resilience factors into research on minority health. Ilan Meyer in fact guest-edited a special issue on “Resilience in Minority Stress of LGBT People” in *Psychology of Sexual Orientation and Gender Diversity* in which a number of articles highlighted strength-based factors. However, to date, there are no models that attempt to explain how a system of personal and collective strengths operates in minority populations to generate positive outcomes. The previous literature on minority strengths typically involves a predictor (usually minority stressor or adversity-related variable), an outcome (usually an index of mental health), and one or two strength-based moderators (e.g., social support, parental acceptance, etc.). There are no articles that we have uncovered in the research literature linking in a holistic fashion a comprehensive series of direct and indirect effects reflecting possible (and empirically tested) ways in which strengths operate in LGBTQ or other minority populations. As a result, the current article will highlight several notable and well-researched personal and collective strengths consistently found to be prominent in diverse minority populations and then tie those strengths together into a comprehensive theoretical model termed the *minority strengths model* that we test empirically in a sample of racially/ethnically diverse lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals.

Despite the focus on negative outcomes, there have been generally independent bodies of research acknowledging and emphasizing the individual and community strengths that minority groups have (Fredriksen-Goldsen, Simoni et al., 2014; Kwon, 2013). Among the extant literature, notable strength-based factors include the social environment including social support and community connectedness (Herek & Glunt, 1995; Hill & Gunderson, 2015; Pflum, Testa, Balsam, Goldblum, & Bongar, 2015; Szymanski, 2009), identity pride (Dunn & Burcaw, 2013), self-esteem (Kosciw, Palmer & Kull, 2015; Mason, Lewis, Winstead, & Derlega, 2015), resilience (Asakura & Craig, 2014), positive mental health (Ross, Steele & Sapiro, 2005), and health-promoting behaviors (Yarcheski, Mahon, Yarcheski, & Cannella, 2004).

Perhaps the most well-researched strength-based factor is social support, which can be measured in terms of the type of support (Holden, Lee, Hockey, Ware, & Dobson, 2014) and from whom the support is being received (Zimet, Dahlem, Zimet, & Farley, 1988). For example, LGBTQ—especially older—adults are more likely to receive or expect to receive support from nonfamily members in addition to the family than are non-LGBTQ individuals (MetLife, 2010). As a protective factor, social support is largely thought to operate because of the nature, strength, and availability of support (Kaplan, Cassel, & Gore, 1977). Support can help provide for an individual's basic social and psychoemotional needs (Kaplan et al., 1977). When an individual is faced with stressful life events, social support can help buffer against negative health effects (Schaefer, Coyne, & Lazarus, 1981). Social support is often seen as a moderating variable between a stressful life event and psychological distress (Elizur & Ziv, 2001; Szymanski, 2009).

A related strength-based construct to social support is community consciousness. Connection, affiliation, and identification with a community can be another strength due to the support a community and community identity can provide. Community can be organized around a wide variety of things, including a behavior, a belief, or a demographic characteristic (Herek & Glunt, 1995). For members of a socially marginalized group, a sense of membership and connection to the community can meet several needs. For LGBTQ individuals, belonging to “the community” or communities can provide a sense of belonging and identification (Herek & Glunt, 1995). There is a personal investment through the common experience of “coming out” and shared culture (e.g., pride flags, symbols, and pride events; Herek & Glunt, 1995). Through community consciousness, individuals may have greater involvement with their communities. This can serve as another avenue for receiving emotional (e.g., humor and spiritual), tangible (e.g., informational), and intangible (e.g., advice) social support (Herek & Glunt, 1995). Through identification with the community or through the support affiliation with the community can provide, community consciousness can further buffer against stigma and stressful life events.

Social support and community consciousness may help generate identity pride, which is a developmental trajectory through which an individual not only accepts one’s identity but also derives satisfaction from and fully immerses themselves in that identity (Cass, 1979). The degree of community immersion or communal attachment is one predictor of identity pride (Dunn & Burcaw, 2013). One measure of identity pride for gender minorities focuses on whether the identity makes an individual feel special or unique, whether the person is comfortable talking about and sharing that identity, and if the person would rather have other people know about the identity and accept or reject them knowing about the identity (Testa, Habarth, Peta, Balsam, & Bockting, 2015). Individuals who have their identities affirmed are far more likely to have identity pride and greater social resources, which predict better mental health (Fredriksen-Goldsen, Kim, Bryan, Shiu, & Emlet, 2017). Having identity pride enables one to engage with the identity community, which can help promote self-worth and opportunities for identity affirmation (Dunn & Burcaw, 2013).

Identity pride is likely to manifest in more general self-esteem, one’s global attitude toward one’s self (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004). Within the concept of self-esteem, theorists have differentiated between different types of self-esteem (e.g., stable vs. unstable, global vs. domain-specific, authentic vs. false, explicit vs. implicit, and contingent vs. noncontingent) and how self-esteem is distinguishable from self-confidence, self-evaluation, and collective self-esteem (Crocker & Major, 1989; Pyszczynski et al., 2004). Self-confidence is a more objective and domain-specific appraisal of one’s skill, ability, or competence (Crocker & Major, 1989). Self-evaluation tends to focus on specific dimensions of the self for assessment, such as one’s physical appearance, academic ability, and social skills (Crocker & Major, 1989). Collective self-esteem is an appraisal of one’s social identity (Crocker & Major, 1989). Among LGBTQ individuals, higher self-esteem has been associated with higher self-forgiveness (Greene & Britton, 2013), lower shame proneness (Greene & Britton, 2013), religiosity (Dahl & Galliher, 2010), early acceptance/recognition of an LGBTQ identity (Swann & Spivey, 2004), family acceptance (Snapp, Watson, Russell, Diaz, & Ryan, 2015), social support and social connectedness (Austin & Goodman, 2017), active coping (Zea, Reisen, & Poppen, 1999), outness (Kosciw, Palmer & Kull, 2015), and collective self-esteem (Zea et al., 1999). Higher levels of self-esteem are thought to help reduce anxiety (Pyszczynski et al., 2004).

Self-esteem may help people from minority communities adapt positively to trauma or adversity, a term referred to as “resilience” (Luthar, 2006). One definition of resilience is, “the quality of being able to survive and thrive in the face of adversity. It includes anything that can lead to more positive adaptation to minority stress and thus, mitigates the negative impact of stress on health” (Meyer, 2015, p. 210). Resilience is further described as a process by which individuals learn to buffer or mitigate stress (Bruce, Harper, & Bauermeister, 2015; Hill & Gunderson, 2015; Meyer, 2015). Highly resilient people can quickly recover or bounce back from a stressful situation (Smith et al., 2008). Resilience is thought to be associated with personal characteristics and traits, coping, social relations, and health (Smith et al., 2008). Low levels of resilience are associated with depression, anxiety, and poor physical health outcomes (Smith et al., 2008). A study by Asakura and Craig (2014) examined publicly available

"It Gets Better" project videos to identify themes of resilience and resilience development. The "It Gets Better" project is a social media campaign started by Dan Savage in response to antigay bully and a string of LGBTQ youth suicides (Asakura & Craig, 2014). Among the sample of videos examined, four themes emerged: (a) leaving hostile social environments, (b) experiencing "coming out" in meaningful ways, (c) remembering the social environments, and (d) turning challenges into opportunities and strengths (Asakura & Craig, 2014). This study highlights individual pathways to resilience and the navigation of hostile social environments by LGBTQ individuals (Asakura & Craig, 2014). Among LGBTQ individuals, resilience helps to buffer the relationship between minority stressors and psychological distress (Breslow et al., 2015).

If a person has high resilience, they may also have positive mental health. Health, according to the World Health Organization, is "not merely the absence of disease or infirmity" but "a state of complete physical, mental and social well-being" (WHO, 2018). Positive mental health is thought to be a condition of well-being in which people can cope with daily life stresses, be productive and contributing members of society in their careers and communities, and recognize their abilities (Srivastava, 2011). Positive mental health is predictive of better physical health, higher educational attainment, employment, and higher levels of productivity (Srivastava, 2011). Positive mental health is predicted by resilience, optimism, self-esteem, and self-efficacy (Srivastava, 2011). A qualitative study with bisexual individuals discussed the different levels of factors (i.e., intrapersonal, interpersonal, and social) which could promote mental health (Ross, Steele & Sapiro, 2005). These factors include self-care, self-acceptance, social support, and media representation (Ross, Steele & Sapiro, 2005). The health promotion model developed by Fredriksen-Goldsen, Simoni et al. (2014) proposes four different pathways for mental health promotion across the life course that is influenced by the intersectionality of one's social positions. These four pathways are behavioral, social and community, psychological, and biological factors which are based in multilevel contexts (Fredriksen-Goldsen, Simoni et al., 2014). The development of positive mental health is about helping people to achieve their optimum psychological well-being within their given context.

Positive mental health may channel directly into health-promoting behaviors, which are defined as actions to increase or sustain wellness (Moorhead, Swanson, Johnson & Maas, 2018). This includes avoiding risky behaviors and environmental risks, getting adequate rest, reducing stress, maintaining social relationships, obtaining recommended immunizations and healthcare screenings, diet and exercise, and avoiding second-hand smoke (Moorhead, Swanson, Johnson & Maas, 2018). Health-promoting behaviors are predicted by factors such as perceived health status, social support, self-esteem, self-efficacy, mental health, education, income, and personal characteristics (e.g., age, sex, etc.) (Yarcheski et al., 2004). It has been argued that risk-based models may help uncover problems or health deficits, while health promotion approaches are more suited for leading to specific solutions aimed at alleviating poor health outcomes (Gahagan & Colpitts, 2017). For LGBTQ individuals, having access to culturally competent care and relevant health information is also important to support health-promoting behaviors, however, very little is known about health-promoting strategies that are effective among this population (Boehmer & Bowen, 2008).

The minority stress model has been foundational in the literature for stimulating research on the ways in which minority stressors lead to mental and physical health problems in diverse minority groups. Unfortunately, research based upon it without regard to the personal and collective strengths that individuals from minority groups have can inadvertently adopt and reinforce a deficit-based approach. Despite the multitude of studies now taking more of a strength-based approach to studying mental and physical health in minority groups, there is no model to describe the process by which important variables interrelate and become personal and collective strengths for minority populations. As a result, the purpose of the current study was to create and initially validate the minority strengths model, which by contrast to the minority stress model outlines how important personal and collective strengths in minority populations combine to create resilience and positive mental and physical health. We thereby conjecture that a series of strength-based variables operate in a theoretical causal chain (Figure 1), based on the mostly bivariate relationships shown to exist in the previous literature.

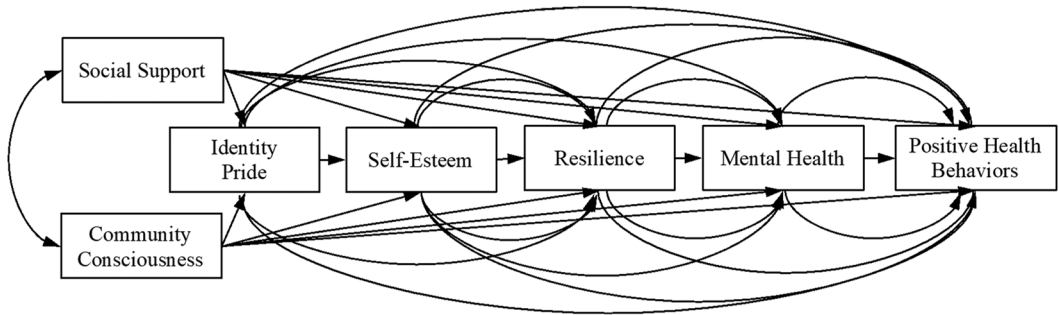


FIGURE 1 Saturated model

There are many strength-based variables that have been identified in the literature empirically or theoretically and which may promote positive outcomes in minority communities. The variables that have been chosen for this literature review and for inclusion in the minority strengths model are those which are most well-known and well-researched. Indeed, other variables could have been included (e.g., neighborhood quality, parental acceptance, attachment style, religiosity, grit, etc.) that have had initial or varying levels of empirically identified relations to positive outcomes in minority (and in particular, LGBTQ) communities. But the included variables in the minority strengths model had the broadest coverage that we were able to uncover in the literature on minority strengths and had the firmest empirical backing. The variables included in the minority strengths model and the resulting theoretical pathways are not the only possible variables and pathways illuminating how strengths may operate in minority communities, but in combination, they coalesce into one of the most comprehensive models offered to date.

The ordering of variables in the minority strengths model largely stems from the general approach outlined years ago in Bronfenbrenner’s (1979) ecological systems theory that conceptualizes the interplay between systems and individual-level variables. Although individual-level variables can influence systems variables, the more compelling theoretically causal direction involves systems variables influencing individual-level. There have been recent calls in the literature (Boon, 2016) to adopt Bronfenbrenner’s ecological systems theory in the examination of resilience and more specifically to consider how systems can influence individual-level resilience (Shaw, McLean, Taylor, Swartout, & Querna, 2016). As a result, the minority strengths model moves on the left from external systems factors through minority identity to one’s overall feelings about oneself, psychosocial functioning, and health behaviors.

Among the strength-based variables and outcomes identified for the minority strengths model, there is theoretical and empirical evidence suggesting specific likely pathways and relationships. Social support has been associated with increased identity pride (Bogart, Lund, & Rottenstein, 2018), self-esteem (Austin & Goodman, 2017; Hoffman, Ushpiz, & Levy-Shiff, 1988; Kong & You, 2013; Rosenberg, 1979), resilience (Earnshaw, Bogart, Dovidio, & Williams, 2015; Thompson, McBride, Hosford & Halaas, 2016), mental health (Pflum et al., 2015; Scandurra, Amodeo, Valerio, Bochicchio, & Frost, 2017), and positive health behaviors (Brown et al., 2016; Gustafsson, Berglund, Faronbi, Barenfeld, & Hammar, 2017). It would make sense then that it is a key variable on the left side of the model exerting an effect on all other variables in the model.

Many other variables in the model have been demonstrated to relate to each other in specific ways. For example, LGBTQ community connectedness has been positively related to identity pride and psychological well-being (Frost & Meyer, 2012), and in qualitative research, feelings of connectedness to the LGBTQ community and other minority communities have been suggested to lead to resilience and psychosocial well-being (Gray, Mendelsohn, & Omoto, 2015). Self-esteem has been shown to mediate the relationship between identity pride and mental health (Cooper, Smith, & Russell, 2017). Community connectedness and identity pride have been shown to predict self-esteem and depression (Lambe, Cerezo & O’Shaughnessy, 2017; Nario-Redmond, Noel & Fern, 2013).

Self-esteem has also been associated with increased positive health behaviors (Antonucci, Peggs, & Marquez, 1989; Lu, Li, Wang, Song, & Liu, 2018), and a likely mechanism could be mental health. From this framework and the key variables identified in the previous empirical literature, it is therefore hypothesized that social support and community consciousness (Herek & Glunt, 1995) lead to identity pride (Dunn & Burcaw, 2013), which leads to self-esteem (Swann & Spivey, 2004), resilience (Breslow et al., 2015), positive mental health (Srivastava, 2011), and finally to health-promoting behaviors (Yarcheski et al., 2004). It is also hypothesized that all possible indirect effects on the minority strengths model will be statistically significant.

1 | MATERIALS AND METHODS

1.1 | Participants

Participants were required to be 18 years of age or older and identify as lesbian, gay, bisexual, transgender, queer (LGBTQ), or another gender or sexual minority category. Participants completing the survey ($N = 317$) consisted of 89 who selected their gender marker as “man,” 150 who selected “woman,” and 78 who selected “transman,” “transwoman,” “intersex,” or “other.” Ages ranged from 18 to 66 ($M = 31.0$; $SD = 11.16$). Regarding sexual orientation, 38.5% identified as gay/lesbian, 26.5% as bisexual, 25.2% as queer, 3.8% as heterosexual and transgender, intersex, or other gender identities, and 6.0% as other. Considering race/ethnicity, 36.9% of participants were White/European-American (non-Latino), 20.8% Black/African-American (non-Latino), 18.0% Asian/Asian-American/Pacific Islander, 12.0% Multiracial/Multiethnic, 8.2% Latino/Hispanic, 2.8% American-Indian/Native-American, and 1.3% as Other. When responding to the question, “What is you and your family’s social class?” 36% of participants identified as upper-middle class (\$60,000–199,000 income per year), 35.6% lower middle class (\$30,000–59,000), 14.2% working class (\$15,000–29,000), 12% lower class (\$7,000–14,999), and 2.2% upper class (\$200,000 and up). Highest educational levels achieved were as follows: 33.1% achieved a 4-year college degree, 28.1% some college (no degree), 18.9% a master’s degree, 8.5% a 2-year technical degree, 6% a high school diploma or GED, 5% a doctorate degree, and 0.3% grade-school level education.

1.2 | Procedure

Participants were recruited through a confidential online survey, distributed through a variety of internet-based platforms within the United States (i.e., forums, groups, and listserv). To recruit a diverse sample of LGBTQ individuals, national online organizations and community groups were utilized in an attempt to attract participants from racial/ethnic minority backgrounds. Participants who were interested in the study e-mailed the research coordinator and were screened for eligibility criteria, then sent a hyperlink including informed consent for the study and received a specific code for their compensation. Participants were e-mailed a \$15 Amazon.com electronic gift card associated with their code by the university’s financial administrator who did not have access to participant information. The host university’s institutional review board approved the study and informed consent document.

Participant data were automatically disposed of if they appeared to be falsely reported (e.g., the completion time of less than 20 min, selection of the same item response on each scale where reverse coding was used). In addition, data were discarded if participants failed to appropriately respond to four or more of the random accuracy checks (e.g., “Please select *agree* for this item”). Data validation was automatically completed due to frequent false responses in online research, which occur as a result of monetarily incentivized surveys. Also, this procedure was required by the host university’s information security offer to reduce the possibility of inappropriately utilizing state funds. Thus, the exact number of discarded survey responses is unknown.

1.3 | Measures

1.3.1 | Social support

The Multidimensional Scale of Perceived Social Support (MSPSS) is a 12-item measure assessing three aspects of perceived social support: Family, Friends, and Significant Other (Zimet et al., 1988). Participants rate the degree to which they agree with the statement provided on a scale of 1 ("strongly disagree") to 5 ("strongly agree"). Higher scores reflect greater perceived social support. Previous literature has shown the Significant Other ($\alpha = 0.91$), Family ($\alpha = 0.87$), and Friends ($\alpha = 0.85$) subscales to have strong internal consistency (Zimet et al., 1988). The reliability of the MSPSS total score from the current study was $\alpha = 0.90$.

1.3.2 | Community consciousness

The Community Consciousness Scale: Male Version (CCS) is a six-item measure that assesses both feelings of gay community connectedness and solidarity in gay social causes (Herek & Glunt, 1995). For the current study, we altered the original items to include the term "LGBTQ" to be more appropriate for the study's sample. Participants rate the degree of their agreement to each survey item (ranging from "strongly disagree" to "strongly agree"). Higher scores on this measure indicate a greater sense of community consciousness. Previous literature has shown the measure to have sufficient internal consistency ($\alpha = 0.76$; Herek & Glunt, 1995). The reliability of the CCS from the current study was $\alpha = 0.79$.

1.3.3 | Identity pride

The Short Internalized Homonegativity Scale (SIHS) is a 13-item measure with a number of items assessing gay identity pride and a number of items assessing internalized heterosexism in gay men (Currie, Cunningham, & Findlay, 2004). In the traditional scoring, identity pride items are reverse-coded and then summed with the internalized heterosexism items to create an overall internalized heterosexism score. For the current study, the internalized heterosexism items were reverse-coded and then added to the identity pride items, creating an overall identity pride score. Thus, in the current scoring, higher scores reflect greater identity pride. Further, since the original sample solely consisted of gay men, questions were modified to include the term "LGBTQ." Respondents rate the extent to which they agree with items (response choices range from "strongly disagree" to "strongly agree"). The original measure has been shown to have adequate internal consistency ($\alpha = 0.78$; Currie et al., 2004). The reliability of the SIHS from the current study was $\alpha = 0.79$.

1.3.4 | Self-esteem

Rosenberg Self-Esteem (RSES) is a 10-item self-esteem scale, and higher scores indicate higher levels of self-esteem (Rosenberg, 1965). Participants are required to rate the degree to which they agree with statements on the scale, ranging from "strongly agree" to "strongly disagree." Prior research has shown this scale to have high internal consistency across 7 years ($\alpha = 0.82$; Baldwin & Hoffmann, 2002). The reliability of the RSES from the current study was $\alpha = 0.91$.

1.3.5 | Resilience

The Brief Resilience Scale (BRS) is a six-item measure which assesses the ability to bounce back from difficult or challenging events (Smith et al., 2008). Participants rate the degree to which they agree with statements on a scale of 1 ("strongly disagree") to 5 ("strongly agree"), and higher scores reflect greater resilience. Previous literature has

shown this scale to have good internal consistency ($\alpha = 0.80\text{--}0.91$; Smith et al., 2008). The reliability of the BRS from the current study was $\alpha = 0.89$.

1.3.6 | Mental health

The Hopkins Symptoms Checklist 25 (HSCL-25) is a 25-item abbreviated version of the original 58-item Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). Participants endorse the frequency they experience anxiety and depression symptoms, ranging from “not at all” to “extremely.” Higher scores indicate greater depression and anxiety symptoms. In the current study, the total score was reflected such that higher scores indicate better mental health. The reliability of the current study was $\alpha = 0.95$.

1.3.7 | Positive health behaviors

The Health Behavior Checklist (HBC) is a 40-item measure assessing three dimensions of health behaviors: Wellness Behaviors, Traffic-Risk, and Accident Control, although factor analyses have cut it down to 31 of the original 40 items (Vickers, Conway, & Hervig, 1990). The current study used only the Wellness Behaviors subscale, which assesses exercise, health information and primary care utilization, dietary habits, and weight management. The Wellness Behaviors subscale has evidenced sufficient internal consistency ($\alpha = 0.77$; Vickers et al., 1990) as well as in the current study ($\alpha = 0.79$).

1.4 | Data analyses

Normality was first assessed for all primary variables in the study. A correlation matrix was constructed to examine the bivariate relationships among all study constructs. These analyses were conducted using SPSS Version 24.0. Next, a path analysis procedure was run using AMOS 23.0 to validate the hypothesized pattern of relationships among these variables leading from social support and community consciousness through identity pride, self-esteem, resilience, and mental health to positive health behaviors. The following criteria were used to assess the goodness of fit (Kenny, 2014): goodness of fit index (GFI), adjusted goodness of fit index (AGFI), normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), and Tucker–Lewis index (TLI) > 0.90 (Byrne, 1994; Hu & Bentler, 1999); lower values of successive models of the Akaike Information Criterion (AIC) and Bayesian information criterion (BIC; Kenny, 2014); a chi-square to degrees of freedom ratio < 2.0 ; a comparative fit index (CFI) > 0.95 (Hu & Bentler, 1999); and a root mean squared error of approximation (RMSEA) of < 0.08 (Tabachnick & Fidell, 2001).

The path analysis procedure started with a fully saturated model in which all possible direct paths between variables were drawn (Figure 1). Following the trimming procedure outlined by Meyers, Gamst, and Guarino (2013), a series of successive models freed up the least statistically significant paths from the prior model until all nonsignificant paths were eliminated. Once a final model was retained, indirect effects and bias-corrected significance levels were calculated using 2,000 bootstrap samples.

2 | RESULTS

The skewness and kurtosis coefficients for all primary variables in this study were equal to or smaller in magnitude than -0.65 and -0.77 , respectively, suggesting that the data were univariate normal. In addition, a Mardia's coefficient of 4.48 (with a critical ratio of 3.55) suggested that the variables bordered the multivariate kurtosis range. Because Mardia's coefficient can be extremely sensitive to slight deviations, and the analyses used are

robust to moderate deviations from normality with larger sample sizes as in the current study (Meyers et al., 2013), the raw data were retained and no transformations were used.

2.1 | Correlation matrix

A correlation matrix was calculated showing the bivariate relationships among all primary study variables (Table 1). In general, all variables were positively related to each other, as would be expected. However, community consciousness was not associated with resilience or mental health, and identity pride was not related to mental health or positive health behaviors.

2.2 | Path model 1

The first path model (Figure 1) was the saturated model with all potential paths drawn among variables. Within this model, the majority of paths were statistically significant, although there were a number of nonsignificant paths that called for use of a trimming procedure. Table 2 presents the standardized β weights (path loadings) for each predictor in the saturated model onto each criterion variable. Because this model was saturated and therefore contained 0 degrees of freedom, no fit indices could be calculated.

2.3 | Path models 2–10

Following the trimming procedure outlined by Meyers et al. (2013), the second model trimmed (deleted) the least statistically significant path from the first model, which was from mental health to positive health behaviors. This trimming procedure continued successively with one path trimmed in each successive model until all nonsignificant paths had been trimmed. The paths that were trimmed in each successive model are noted in Table 2, and the fit indices of all models run are presented in Table 3. Generally, the fit indices decreased very slightly with each successive model, which might be expected given that more complex models tend to fit better than more parsimonious ones (Meyers et al., 2013). The generally linear decrease in BIC values all the way until the final path model suggested increasing model precision via the trimming procedure.

After running path model 9 (including the trimming of the path from identity pride to positive health behaviors), all path loadings were statistically significant for the first time. However, the path from identity pride to mental health was just into the statistically significant range and in fact in the opposite direction as what would be expected, as well as in the opposite direction of the nonsignificant correlation between these variables in the correlation matrix (Table 1). Therefore, the statistical significance and direction of this loading are likely due to suppressor effects and should be interpreted as an error as opposed to true effects, which can occur when a

TABLE 1 Correlation matrix

Variable	1	2	3	4	5	6
1. Social support						
2. Community consciousness	0.178**					
3. Identity pride	0.310**	0.320**				
4. Self-esteem	0.425**	0.170**	0.254**			
5. Resilience	0.328**	0.085	0.184**	0.566**		
6. Mental health	0.424**	0.040	0.092	0.577**	0.517**	
7. Positive health behaviors	0.256**	0.133*	0.018	0.338**	0.146**	0.227**

* $p < .05$.

** $p < .01$, two-tailed.

TABLE 2 Standardized β weights and p values of the saturated model

Predictor	Criterion	β weight	p value	Model when path trimmed
Mental health	Positive health behaviors	0.03	.696	2
Identity pride	Resilience	0.03	.552	3
Community consciousness	Resilience	-0.03	.521	4
Community consciousness	Mental health	-0.05	.253	5
Community consciousness	Self-esteem	0.07	.217	7
Resilience	Positive health behaviors	-0.08	.200	6
Community consciousness	Positive health behaviors	0.10	.076	8
Social support	Resilience	0.10	.049	-
Identity pride	Self-esteem	0.12	.035	-
Identity pride	Mental health	-0.10	.029	10
Identity pride	Positive health behaviors	-0.13	.024	9
Social support	Positive health behaviors	0.16	.009	-
Social support	Mental health	0.22	***	-
Resilience	Mental health	0.26	***	-
Community consciousness	Identity pride	0.27	***	-
Social support	Identity pride	0.26	***	-
Self-esteem	Positive health behaviors	0.32	***	-
Self-esteem	Mental health	0.37	***	-
Social support	Self-esteem	0.38	***	-
Self-esteem	Resilience	0.52	***	-

*** $p < .001$, two-tailed. Paths sorted in decreasing p value magnitude.

TABLE 3 Fit indices of path models (M) 2–10

Fit index	M2	M3	M4	M5	M6	M7	M8	M9	M10
CMIN/DF	0.15	0.25	0.25	0.52	0.71	0.85	1.18	1.50	2.07
GFI	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.98
AGFI	1.00	0.99	0.99	0.99	0.98	0.98	0.97	0.96	0.95
NFI	1.00	1.00	1.00	1.00	0.99	0.99	0.98	0.98	0.96
RFI	0.99	0.99	0.99	0.98	0.97	0.96	0.95	0.94	0.91
IFI	1.00	1.00	1.01	1.00	1.00	1.00	1.00	0.99	0.98
TLI	1.04	1.03	1.03	1.02	1.01	1.01	0.99	0.98	0.95
CFI	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.98
RMSEA	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.06
AIC	54.15	52.51	50.76	50.06	49.55	49.07	50.27	52.01	56.63
BIC	155.64	150.24	144.73	140.27	136.00	131.77	129.21	127.19	128.05

Note: AIC: Akaike Information Criterion; AGFI: adjusted goodness of fit index; BIC: bayesian information criterion; CFI: comparative fit index; CMIN/DF: chi-squared to degrees of freedom ratio; GFI: goodness of fit index; IFI: incremental fit index; NFI: normed fit index; RFI: relative fit index; RMSEA: root mean squared error of approximation; TLI: Tucker–Lewis index.

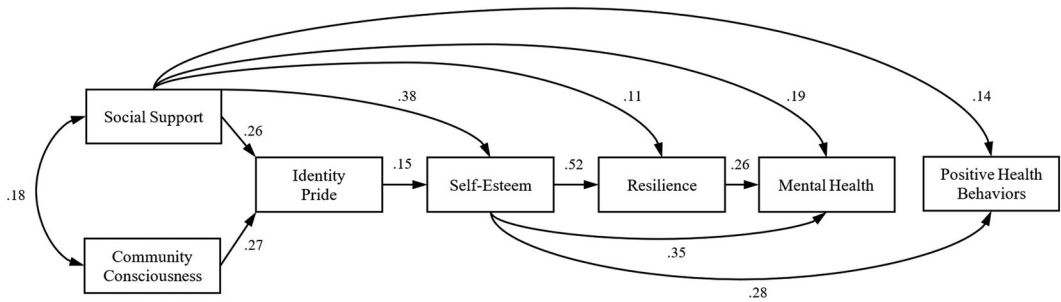


FIGURE 2 Final minority strengths model. All paths were statistically significant at $p < .05$ or lower. Model explained 16.8% of the variance in identity pride, 19.7% in self-esteem, 32.9% in resilience, 41.6% in mental health, and 13.0% in positive health behaviors

predictor in a path analysis is correlated with another predictor but is not correlated or weakly correlated with a criterion variable. Ludlow and Klein (2014) suggest that “in this situation the regression coefficient ... may be diminished or enhanced and even reversed in the sign” (p. 1). If suppressors do not occur as a result of interventions designed to produce the effect, or if they are not theoretically justified, they are better seen as “a statistical effect potentially devoid of substantive interpretation” (Ludlow & Klein, 2014, p. 2). As a result, the trimming of this path in path model 10 was warranted.

In path model 10, all path loadings were statistically significant (Figure 2). The fit indices for path model 10 were all at least in the adequate range, with most indices far exceeding the cutoffs for adequate fit and instead suggesting good fit. As a result, path model 10 was retained as the final minority strengths model. All possible indirect (mediational) effects throughout the model were statistically significant, suggesting a complete series of mediations and multiple mediations throughout the theoretical chain. Community consciousness yielded statistically significant indirect effects on self-esteem through identity pride ($\beta = 0.04, p = .006$), and on resilience ($\beta = 0.02, p = .006$) and positive health behaviors ($\beta = 0.01, p = .006$) through identity pride and self-esteem, as well as on mental health ($\beta = 0.02, p = .006$) through identity pride, self-esteem, and resilience. Social support yielded statistically significant indirect effects on self-esteem through identity pride ($\beta = 0.04, p = .006$), resilience ($\beta = 0.22, p = .001$) and positive health behaviors ($\beta = 0.12, p = .001$) through identity pride and self-esteem, and on mental health ($\beta = 0.23, p = .001$) through identity pride, self-esteem, and resilience. Identity pride yielded statistically significant indirect effects on resilience ($\beta = 0.07, p = .006$), positive health behaviors ($\beta = 0.04, p = .006$), and mental health ($\beta = 0.07, p = .006$) through self-esteem. And finally, self-esteem yielded a statistically significant indirect effect on mental health ($\beta = 0.13, p = .001$) through resilience.

3 | DISCUSSION

The minority stress model is one of the most commonly used approaches to understanding the processes by which exposure to minority stressors produce a vulnerability to mental and physical health problems for individuals from various marginalized groups. Unfortunately, the minority stress model and much research based upon it tend to adopt and reinforce a deficit-based approach to understanding the mental and physical health of minority groups. This study sought to begin to address this need by creating and initially validating a minority strengths model that outlines one possible way in which important personal and collective strengths in minority populations can combine to create resilience and positive mental and physical health. A series of path models generated a minority strengths model yielding a comprehensive series of mediations and multiple mediations throughout a theoretical chain linking social support and community consciousness to positive health behaviors and mental health through identity pride, self-esteem, and resilience.

Identity pride and self-esteem were consistently associated directly and indirectly with mental health and positive health behaviors. Identity pride has been negatively associated with psychological distress among LGBTQ adults (Bockting, Miner, Swinburne Romine, Hamilton, & Coleman, 2013), and similarly in this study exerted an indirect effect on positive mental and physical health through self-esteem and resilience. Self-acceptance of one's identity (i.e., identity pride) is strongly linked to self-esteem (Swann & Spivey, 2004), which is in turn associated with reduced psychological distress (Pyszczynski et al., 2004). Some of the strongest direct associations in this study were between self-esteem and resilience, social support, and mental health. This places self-esteem at the crux of the minority strengths model.

The final model suggested that social support was robustly associated with mental health and positive health behaviors both directly and indirectly through its effect on identity pride, resilience, and self-esteem. The benefits of social support on the mental health of LGBTQ individuals have been well-documented. Social support is a protective factor against psychological distress (Pflum et al., 2015), suicidality (Ryan, Russell, Huebner, Diaz, & Sanchez, 2010), and substance use (Rothman, Sullivan, Keyes, & Boehmer, 2012). These findings contribute to this body of literature in that social support works directly and indirectly on promoting mental health and positive health behaviors among LGBTQ adults.

In the current study, the strongest indirect effects observed were between social support and mental health and resilience through identity pride and self-esteem. Greater acceptance from family (Ryan et al., 2010) as well as socialization online (Shaw & Gant, 2002) has been associated with better self-esteem. Family acceptance and support have been linked to increased LGBTQ pride (Snapp et al., 2015). Increased social support and self-esteem also bolstered resilience. Resilience has been shown to protect against psychological distress in the face of minority stressors (Breslow et al., 2015), and as identified in this study, may promote positive mental and behavioral health. This body of work along with the present findings highlight the importance of a positive support system from family, friends, and significant others to foster a sense of pride, self-worth, resilience, and positive mental and physical health.

The statistical effect of community consciousness on mental and physical health worked through its association with identity pride. It is important to note that the CCS measuring community consciousness actually taps two aspects of this construct simultaneously. It includes items such as "I feel a bond with other people who are LGBTQ" (tapping connectedness) and "I think that all LGBTQ individuals should join together to end homophobia/transphobia" (tapping political solidarity). As a result, the consideration of both LGBTQ community connectedness and solidarity in LGBTQ social causes is warranted. The need to feel connected is an important part of minority identity development (Frost & Meyer, 2012). The significance of this connection may be especially important for marginalized individuals, such as those in the LGBTQ community, as they may internalize the stigma associated with their identity (Lambe, Cerezo & O'Shaughnessy, 2017). Developing a connection to the larger community could provide access to nonstigmatizing environments and may catalyze positive identity development and identity pride as well as present opportunities for more positive self-appraisals (Meyer, 2003). Among this population, such a connection is important to understanding both identity and related health outcomes as it can engender solidarity around LGBTQ social issues, foster affirmative social norms, create positive life narratives about LGBTQ identity, and enhanced personal growth (Kertzner, 2001). Previous work among sexual minorities has identified community connectedness to be associated with a strong LGBTQ group identity, more positive attributes associated with such an identity, as well as positive and social well-being (Frost & Meyer, 2012; Kertzner, Meyer, Frost, & Stirratt, 2009). Sexual minority identity was more strongly predictive of positive and social well-being and was independently associated with fewer depressive symptoms after accounting for community connection (Kertzner et al., 2009). Thus, LGBTQ identity pride may be essential for understanding the influence of community consciousness on mental and physical health and may improve outcomes through increased self-esteem and resilience.

Collectively, the minority strengths model describes a series of cascading effects beginning with social support and community consciousness either directly or indirectly impacting mental and physical health through identity pride, self-esteem, and resilience. Social support may promote self-acceptance, self-worth, and resilience in the face

of minority stress, as well as foster mental and physical well-being. In addition, as individuals connect and establish an association with the LGBTQ community, they may perceive greater social support, as well as it fostering greater identity pride and subsequent self-worth increasing resilience and promoting mental health and positive health behaviors.

One potential critique of the minority strengths model is that some of the measures that are typically used to assess risk have merely been reframed in terms of resilience or other strength-based variables. Low scores on a strength-based measure in the model might simply indicate risk which is already captured by Meyer's (2003) minority stress model. In response to this potential critique, it is important to note that although strength-based factors clearly operate on a continuum whereby low scores (e.g., on social support, community consciousness, resilience, etc.) may confer risk, strength-based factors are *separate and distinct* from risk factors themselves. Researchers have posed this question before and answered it empirically. Friborg, Hjemedal, Martinussen, and Rosenvinge (2009) conducted a large-scale study and via factor analysis and multiple regression found that resilience shared common variance with vulnerability and psychopathology, but was in fact unique from illness indices. They concluded that "the notion of resilience-protective indicators as sole counterparts of vulnerability and psychopathology is not empirically supported" (p. 138). Similarly, Almedom and Glandon (2007) conducted a systematic review of the literature on definitions and measurements of resilience and concluded, "It is evident that resilience is more than the absence of 'posttraumatic stress disorder,' just as health (and indeed mental health) is more than the absence of disease (or mental/behavioral disorder)" (p. 127). This empirically-based argument extends compellingly to research on other strength-based factors, that they do indeed tap unique constructs rather than the opposite side of a risk-factor continuum. As a result, the minority strengths model is not simply a more positive isomer of the minority stress model.

Taken together, this model underscores the importance of belonging to a broader LGBTQ community as well as highlights the likely significance of social support in developing strengths that may promote positive mental and physical health (Kwon, 2013). Community connection and social support have been positively associated with each other in the LGBTQ community (Frost & Meyer, 2012), indicating that individuals perceive greater social support the more they become embedded in the broader LGBTQ community. Given the historic and continued marginalization of the LGBTQ community, social support and a sense of belonging become increasingly essential factors in promoting positive development and protecting against the impact of minority stressors (Snapp et al., 2015). This model adds to the growing work identifying sources of personal and collective strengths, as well as potential mechanisms by which they nurture positive health.

3.1 | Clinical and public health implications

There are several points of intervention to promote social support and well-being among LGBTQ individuals. First, psychotherapy can assist minority clients with bootstrapping some of the strengths identified in the current study to restructure maladaptive cognitions that may stem from exposure to the stigma that can impede upon engaging in one's social network (Hatzenbuehler, 2009). Pachankis, Hatzenbuehler, Rendina, Safren, and Parsons (2015) developed an evidence-based transdiagnostic cognitive-behavioral treatment to target depression, anxiety, and co-occurring health risks in young gay and bisexual men. Their intervention works by helping clients identify minority stress experiences and the resulting cognitive, affective, and behavioral reactions. The intervention challenges clients to use mindful, present-focused reactions to minority stress instead of avoidance reactions such as substance use and condomless anal sex. Affirming family-based interventions may also be particularly beneficial to promote social support from family members. These types of interventions may have a synergistic effect on LGBTQ individuals' ability to seek out additional support outside the family and into the community, further promoting well-being. Friends and family of LGBTQ individuals should be targeted for future interventions to promote affirmation of LGBTQ identities and educate them of the positive implications of their attitudes/behaviors. The internet is a tool that also promotes social support (Shaw & Gant, 2002) and informal delivery of mental health

services. It is also important that different clinical treatments be developed and tested for different communities within the LGBTQ umbrella. For example, authors have recently argued for the use of Dialectical Behavioral Therapy for use in transgender populations (Sloan, Berke, & Shipherd, 2017) or with clients experiencing gender dysphoria (Sloan & Berke, 2018). Nuanced and evidence-based approaches to mental health treatment, particularly for transgender communities, are imperative.

The indirect statistical effect of community consciousness on mental health and positive health behaviors underscores the importance of assisting LGBTQ individuals in connecting with a positive LGBTQ community. At an individual level, this has implications for clinicians to assist their LGBTQ clients in developing the necessary confidence to connect with the broader LGBTQ community in a manner most appropriate to the client. One avenue by which this may occur is through assisting the client in identifying LGBTQ organizations that they may wish to be involved with, which could broaden their social network, increase their social support, and develop a stronger sense of LGBTQ pride (Lytle, Rodriguez, Vaughan, & Shmerler, 2014). With this in mind, it would behoove clinicians to cultivate or have knowledge of LGBTQ community organizations as a way to help their clients develop greater community connection.

At a systems level, the current results highlight the importance of LGBTQ representation and broader inclusion in society given the potentially unique set of strengths identified. Despite recent strides toward civil rights and equality for LGBTQ people, the community still lacks a number of legal rights afforded to other groups. For instance, a federal policy that identifies sexual orientation and gender identity as protected classes across a number of societal sectors, including employment, housing, and public accommodations does not exist, though many individual states have adopted such policies. The lack of LGBTQ protection reflects the current culture, which can foster rejection and contribute to beliefs of inferiority and internalized stigma. By increasing representation and adopting policies that protect and include LGBTQ people, this is likely to contribute to a sense of belonging through a reinforcement of the importance of their existence. In schools, Genders and Sexualities Alliances (formerly gay-straight alliances [GSAs]) provide an opportunity for LGBTQ and heterosexual and cisgender students to connect and support each other. GSAs also promote advocacy against social inequities, which may promote social support and community connectedness at once (Griffin, Lee, Waugh, & Beyer, 2004). In the workplace, including LGBTQ issues in diversity training and publicly displaying nondiscrimination policies can promote equity for LGBTQ employees. The effects of structural stigma are evident in prior work that has identified poorer health for sexual minority people living in states with policies that fail to protect LGBTQ people (Hatzenbuehler et al., 2014). Promoting inclusive and nondiscriminatory policies towards LGBTQ people may not only promote personal strengths but signal a shift in the culture that recognizes the importance of the LGBTQ community.

3.2 | Limitations and future directions

This study created and initially validated a model outlining a possible set of pathways by which personal and collective strengths in minority populations create resilience and positive mental and physical health. However, any conclusions drawn should be made in consideration of several notable limitations to the study. First, the cross-sectional methodology prevents any true establishment of causality. For example, it may be possible that increased self-esteem following greater connection with the LGBTQ community may foster greater acceptance of the self, allowing for the development of identity pride. Future work should aim to examine these constructs using longitudinal methods to more concretely identify temporal order via cross-lagged panel designs and with a larger sample. Second, the sampling method might have been biased toward individuals with greater community consciousness and personal strengths. While this study utilized web-based sampling allowing us to reach populations frequently overlooked in the broader LGBTQ literature (e.g., people of color, transgender individuals), recruitment of individuals from listservs and forums suggests the current sample may already have had some connection to the LGBTQ community. Similarly, information on geographic representation (e.g., state, urban vs. rural, etc.) was not collected, so generalization to specific geographic regions or populations may be unknown. Future work should incorporate additional sampling methods (e.g., respondent-driven) to derive a larger, more

representative sample, and collect data on geographic representation. It is imperative that the minority strength model be further validated (and possibly refined) using additional, larger, and more diverse samples, as idiosyncratic characteristics of the current sample may have influenced the results.

Third, the current study did not account for the heterogeneity of experience across sexual orientations, gender identities, or race/ethnicity, among other factors or for participants with multiple minority identities. It is important to note that not all identified strength-based factors will achieve the same salubrious effects or operate for all individuals or groups in the same way. Some strength-based factors can act as negative predictors among certain groups and circumstances (e.g., social support; Mereish & Poteat, 2015; Moody, Fuks, Peláez & Smith, 2015). For example, higher levels of community consciousness have been shown to exacerbate the degree to which mental health mediates the relationship between discrimination and body image issues in sexual minority men (Simpson, Sutter, & Perrin, 2016). Differences in social support, community connection, and/or health outcomes exist across these factors (Frost & Meyer, 2012; Pflum et al., 2015), suggesting potential model differences if examined at the subgroup level. In particular, transgender or bisexual individuals may report less connectedness to the broader LGBTQ community. The measure of community consciousness used in the current study did not parse out the connection to separate communities within the LGBTQ abbreviation as a function of how participants identified. Additional work in this context would benefit from within-group and between-group examinations to identify deviations from the currently proposed model based on the heterogeneity of the LGBTQ community. The differences in minority experiences between transgender/gender nonconforming and LGBQ individuals, though similar in some ways, also at times are vast. Similarly, the experiences of transmen, transwomen, and gender-nonconforming individuals may also differ vastly, so no single model (however comprehensive overall or how good its fit indices in its initial validation) can be said to describe fully a pattern of experiences equally across every group and subgroup. It is important that the minority strengths model be run in larger samples employing tests of invariance by gender identity (as well as by other important demographics) to support the generalizability of the model.

Finally, the minority strengths model proposed and tested in the current study is *one possible model* out of a multitude of possibilities. Other strength-based pathways almost certainly exist for LGBTQ communities and other minority populations, and the current model for the sake of parsimony omitted other possible and important variables (e.g., neighborhood quality, parental acceptance, attachment style, religiosity, grit, etc.). In order for the theory and science on minority strengths to advance, future research should empirically test alternative theoretical models that may better capture the unique strength-based experiences of diverse minority populations or that may nicely supplement or extend the current findings.

This study proposed and initially tested a theoretical minority strengths model through which personal and community-based strengths may promote resilience and positive mental and behavioral health among a diverse sample of LGBTQ individuals. Utilizing a successive path model-building approach, the theoretical effect of social support and community consciousness on mental health and positive health behaviors through identity pride, self-esteem, and resilience was examined to identify the best-fitting model. The minority strengths model holds promise to stimulate research on the personal and collective strengths that individuals from minority populations hold and the ways in which strengths may generate resilience and positive health.

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