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Mental health of lesbian, gay, and bisexual youth: A developmental resiliency perspective

Brian Mustanski

University of Illinois, Department of Psychiatry, Office #252, 1747 W. Roosevelt Rd., Chicago, IL 60608

M. Newcomb

University of Illinois at Chicago Departments of Psychiatry and Psychology

R. Garofalo

Children's Memorial Hospital Chicago

Abstract

Research suggests that lesbian, gay, and bisexual (LGB) youth are at increased risk for both victimization and internalizing mental health problems, but limited research has studied their association or factors that increase resilience. The sample included 425 LGBs between the ages of 16 and 24 year. The majority had disclosed their sexual orientation to family or friends (98%) and 97% had someone in their lives who was accepting. Racial/ethnic minority and female participants in general reported lower levels of disclosure and acceptance. Most participants reported some form of sexual orientation-related victimization (94%). Victimization was associated with psychological distress, but a compensatory model indicated that in the context of this victimization both peer and family support had significant promotive effects. A test of a protective model found social support did not ameliorate negative effects of victimization. The positive effects of family support decreased with age. Peer and family support were particularly important, but they did not significantly dampen the negative effects of victimization. Our findings suggest that mental health professionals working with LGB youth should address social support and that public health approaches are needed to reduce levels of victimization.

Keywords

Resilience; homosexuality; peers; family support; victimization

Lesbian, gay, and bisexual (LGB) people have been found to face a number of stressors more often than persons in the majority (e.g. Herek, 1989; Meyer, 2003). In the context of these stressors, it is not surprising that studies have identified increased prevalence of internalized psychopathology (e.g. mood and anxiety disorders, psychological distress) among adult sexual minorities (see review by Herek & Garnets, 2007). Research suggests that mental health disparities exist by young adulthood (Fergusson, Horwood, Ridder, & Beautrais, 2005) and may emerge by adolescence (Bos, Sandfort, de Bruyn, & Hakvoort, 2008; Russell & Joyner, 2001). Much of the mental health research on LGB youth has focused on suicidal intentions and attempts. Despite measurement limitations (Savin-Williams, 2001), studies using representative samples of youth suggest an association between aspects of suicidality and LGB identity (Garofalo, Wolf, Wissow, Woods, &

Goodman, 1999), same-sex attractions (Russell & Joyner, 2001), and same-sex behavior (DuRant, Krowchuk, & Sinal, 1998; Faulkner & Cranston, 1998).

Many efforts to explain mental health disparities among LGB populations have used variants of minority stress theory, which posits negative effects of internal and external manifestations of prejudice, discrimination, and stigma (Meyer, 2003). Numerous studies have found greater frequencies of victimization among LGB youth compared to heterosexual siblings (Balsam, Rothblum, & Beauchaine, 2005) or peers (Cochran, Stewart, Ginzler, & Cauce, 2002; Williams, Connolly, Pepler, & Craig, 2005), and the negative effects of these victimization experiences on self-esteem and mental health have been repeatedly documented (Hershberger, Pilkington, & D'Augelli, 1997; Huebner, Rebchook, & Kegeles, 2004; Rosario, Schrimshaw, Hunter, & Gwadz, 2002; Waldo, Hesson-McInnis, & D'Augelli, 1998; Williams et al., 2005). While this research has made an important contribution to our understanding of factors that increase risk for negative mental health outcomes, there has been much less attention to factors that have positive or protective effects.

A resilience perspective

In the context of victimization and its resulting negative effects, it is important to consider factors that may promote healthy development in spite of risk exposure, particularly as the majority of LGB youth do not experience mental health problems. Luthar, Cicchetti, and Becker (2000; P. 543) define resilience as a “process encompassing positive adaptation within the context of significant adversity.” Variable-centered resiliency research focuses on variability in a negative outcome (Rutter, 1987), such as low alcohol use in an adolescent with a family history of alcoholism, or the achievement of specific outcomes associated with resilience, such as social competence or academic achievement (e.g. Kaufman, Cook, Army, Jones, & Pittinsky, 1994). This variable-centered approach is one of two major kinds of resiliency research, the other being a person-centered approach that categorizes youth as being “resilient” based on their doing well in at least one domain of developmental relevance (Masten, 2001). Variable-focused approaches are well suited for understanding underlying mechanisms that may lead to good or poor functioning in a single domain (Masten, Obradovic, & Burt, 2006), such as mental health.

Fergus and Zimmerman (2005) state that a requirement of resilience research is the inclusion of both risk and promotive factors that are linked to either a positive outcome or the avoidance of a negative outcome. Promotive factors are assets and resources that help a youth avoid negative outcomes and their effects can operate via compensatory and/or protective processes (Fergus & Zimmerman, 2005; Garmezy, Masten, & Tellegen, 1984; Luthar et al., 2000; Rutter, 1985). Compensatory processes involve a direct effect of a promotive factor on an outcome that is independent of the effect of a risk factor. Protective processes involve promotive factors reducing the influence of a risk factor on a negative outcome; statistically this would take the form of an interaction or moderation effect.

Fergus and Zimmerman (2005) conclude in their review of adolescent resilience research that there are virtually no studies using a resilience framework for LGB youth, leaving a significant void in the literature. Our review of the literature confirms a lack of studies formally testing models of resilience processes in LGB youth, although some studies have included both risk and promotive factors as predictors (e.g. Williams et al., 2005). Formally testing these variable-centered resiliency models in regards to mental health is the focus of this report.

Promotive Factors

Social support from family and friends is one of the most frequently studied psychosocial resources (Thoits, 1995), and the positive effects of perceived emotional support (i.e. beliefs regarding the availability of love, sympathy, care, etc., from others) have been known for decades (House, Landis, & Umberson, 1988). Supportive relationships are particularly appropriate for inclusion in models of resilience, as there is a great deal of evidence supporting their role as buffers against negative sequelae of stressful experiences (i.e. the “stress buffer” hypothesis; Cohen & Wills, 1985). For example, Hodges, Boivin, Vitaro, and Bukowski (1999) found that a mutual best friendship can provide a buffer against the negative outcomes associated with victimization. Not only were adolescents with a mutual best friend at decreased risk for victimization at school, but of the youth who reported being victimized, only those without a mutual best friend showed increased levels of internalizing symptoms. These findings illustrate the importance of considering the promotive effects of social support on mental health in the presence of victimization (i.e. independent main effects), but also the protective effects (i.e. moderating influence of social support on the effects of victimization).

Social support may also be a particularly relevant construct for LGB young people, as a sense of being different from others has been documented in many studies and is even considered an initial stage of sexual minority identity development (Eliason & Schope, 2007). Resolving these feelings of being different is a significant developmental task—one that could be expedited by peer and family acceptance. At the same time, disclosing sexual orientation to family and peers may place these youth at risk for alienation and rejection (D’Augelli, Hershberger, & Pilkington, 1998). This complex balance between the potential for beneficial social acceptance or deleterious rejection likely enhances the meaningfulness of social support among these youth. It also highlights the importance of considering patterns of sexual orientation disclosure to family and peers, along with their acceptance.

In the context of adolescence and young adulthood, it is also critical to consider the relevant types of social support within a developmental framework. Studies have found that social support from both parents and peers reduces depression in children (e.g. Greenberger, Chen, Tally, & Qi, 2000), but during adolescence the importance of each of these sources of support may change. It has often been assumed that parental influences decrease during adolescence because of the rising proportion of time dedicated to interactions with persons outside the family, but the evidence for this is mixed (e.g. Brown, Mounts, Lamborn, & Steinberg, 1993; Meeus & Dekovic, 1995). Most contemporary scholars view adolescent relationships as changing without subverting the bond between parent and child, but instead setting the stage for the selection and management of friendships (Collins & Laursen, 2004). As such, age should be explored as a moderator of the effects of family and peer support when the sample spans adolescence.

In addition to considering age differences, it is also valuable to consider sex differences. For example, some prior research has found sexual orientation differences in suicidality only in boys (Garofalo et al., 1999; Remafedi, French, Story, Resnick, & Blum, 1998), whereas in general samples there is a well-replicated finding of increased suicide attempts in girls (Spirito & Esposito-Smythers, 2006). In general, the degree and direction of sex differences in mental health and related variables among LGB samples has been underexplored. Similarly, there has only been limited research on the intersection of sexual and racial/ethnic minority identities, with existing research suggesting important differences in acceptance and disclosure of a sexual minority identity (Rosario, Schrimshaw, & Hunter, 2004). Given well documented racial/ethnic differences in many health outcomes, more fully understanding the interface with sexual orientation is an important route for mental health research.

Hypotheses

The primary aim of the current study was to test two resiliency processes in the context of victimization among LGB youth. Consistent with variable-centered resilience research, we focused on explaining variation ranging from low to high levels of psychological distress. First, a compensatory process model tested the hypothesis that peer and family support had promotive effects independent of the risk associated with degree of victimization (i.e. independent main effects). Second, a protective process model tested the hypothesis that the risks associated with victimization decreased in the presence of strong peer or family support (i.e. a statistical interaction). A secondary aim of this study was to contribute to understanding the interplay of age, sex, and race/ethnicity with sexual orientation by exploring demographic differences in study variables. Based on literature on the developmental changes in time spent with parents versus peers, it was hypothesized that the promotive effects of peer support would increase and family support would decrease with age. The extensive literature on sex differences in depression led us to hypothesize higher psychological distress among female participants. Based on the limited research on racial/ethnic differences, it was hypothesized that racial/ethnic minorities would be less likely to disclose their sexual orientation.

Methods

Participants and Procedures

The project recruited 496 participants living in the Chicago metropolitan area consecutively over 12 months in 2004–2005 from multiple sources, including: flyers posted in retail locations and LGB youth-serving agencies, email advertisements posted on high school and college list-serves, palm cards distributed in LGB-identified neighborhoods, and snowball sampling. No recruitment occurred in traditional high-risk social venues such as bars, sex clubs or bathhouses, and recruitment source was not tracked. Verbal consent was obtained to maximize protection of confidentiality by avoiding the need to retain a written record of participants' names. Relevant institutional IRBs approved a waiver of parental permission for minor participants under US 45 CFR 46.408 (c) (Subpart D) on the grounds that this is not a reasonable requirement for LGBT youth and appropriate mechanisms for protecting the youth were put in place (i.e. youth advocate, assessment of decisional capacity). Surveys were administered in a private room at a youth center affiliated with a large LGB community-based health center. Measures were completed using a computer-assisted self-interview (CASI), which lasted approximately 45 minutes. Participants received \$30 for completing the survey.

From the full sample, 49 participants reported a transgender identity, ten participants did not identify as transgender but did report a birth sex that did not match their current sex, and twelve participants reported their sexual orientation as “heterosexual” or “questioning.” To more precisely characterize the sample as LGB youth, these participants were removed, leaving an analytic sample of 425.

Measures

Demographics—Participants reported their age, race/ethnicity, education, and housing status. Sexual orientation was assessed by asking “which of the following best describes you?” with response options including “Homosexual/Gay, Lesbian, Bisexual, Heterosexual, or Questioning.” Socioeconomic status (SES) was assessed by asking participants, “How would you categorize the home you grew up in?” with response options indicated in Table 1. Participants reported their birth sex (male or female) and also asked “How do you self-identify?” with the options: male, female, transgender (male to female), or transgender (female to male).

Psychological Distress—The 18 item version of the Brief Symptom Inventory (BSI-18; Derogatis, 2000) measured psychological distress in the past week. Previous reports have found the BSI-18 to have adequate reliability and convergent validity with the longer version (Zabora et al., 2001). The Global Severity Index (GSI) of the BSI-18 was used for analyses, which had a coefficient alpha of 0.93. Evidence supports the use of the GSI as a measure of the degree of psychological distress (Boulet & Boss, 1991). For descriptive purposes, the BSI-18 scoring system was used to calculate T-scores, and a clinical cutoff of $T > 62$ was used (Derogatis, 2000).

Victimization—A 10-item measure based on the work of D'Augelli and colleagues (1998) assessed the frequency of lifetime experiences of victimization “because you are, or were thought to be, gay, lesbian, bisexual, or transgender.” Items addressed verbal threats and insults, being chased, having property damaged, and being physically or sexually assaulted. Lifetime frequency ratings range from never (coded one) to three or more times (coded four). A composite of these items was created by taking the mean across items. Coefficient alpha was 0.82.

Family Support—Three measures served as indicators of the family support factor; to be consistent with scale developers, none of the support scales asked about a specific timeframe. First, the family support subscale of the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) measured perceived social support from family member. It has been widely used in diverse populations, including LGB youth (D'Augelli, Grossman, & Starks, 2005). The 4-item sub-scale had a calculated coefficient alpha of .93. The Family subscale of the Social and Emotional Loneliness Scale For Adults (SELSA; DiTommaso & Spinner, 1993) measured emotional and social loneliness and connectedness among family members. The SELSA family subscale included 11 items with an alpha of .90. Family cohesion was the third indicator of family support. It was assessed with the Family Adaptability and Cohesion Evaluation Scale (FACES; Olson, 1986), a widely used scale measuring family functioning. This ten item scale had a coefficient alpha of .90 in our sample. In order to be consistent and interpretable, all scales were calculated so that higher scores represent greater family support, less family loneliness, and greater cohesion.

Peer Support—Two established and one adapted measure served as indicators of peer support, none of which specified a specific timeframe as per scale developers. First, the peer support subscale of the MSPSS (Zimet et al., 1988) was used to measure perceived social support from peers. The 7-item subscale had a coefficient alpha of .91. The Social subscale of the SELSA (DiTommaso & Spinner, 1993) was used to measure emotional and social loneliness and connectedness in regards to friendships. The 14-item SELSA Social subscale had an alpha of .90. Finally, five items from the Homosexual Attitudes Inventory (Nungesser, 1983) were selected based on their assessments of friends' acceptance of the participants' homosexuality (e.g. “If people my age knew of my homosexuality/bisexuality, I am afraid that many would not want to be my friends”) and also not being treated like a stereotype (e.g. “When I think about coming out to a straight friend, I worry that she or he might watch me to see if I do things that are stereotypically homosexual.”). Coefficient alpha for this scale was .82 in these data. All scales were calculated so that higher scores represent greater peer support, less peer loneliness, and more positive peer attitudes towards homosexuality.

Analytic Plan—Prior to conducting analyses on the compensatory and protective models, we computed latent factors of multiple measures of both peer and family support in order to provide a comprehensive assessment of these domains. Principle components factor analysis

was used to create factor scores representing each of these domains. The use of multiple measures to create latent factors has the dual benefits of reducing measurement error in these key constructs as well as serving as a data reduction technique that limits reliance on multiple testing, which can increase the likelihood of making a Type I error.

Analysis of the compensatory process model was conducted with multiple linear regression to test the hypothesis that peer and family support had promotive effects that were independent of the risk associated with level of victimization. Peer support, victimization, and family support were entered into the model simultaneously to test for these independent effects. Demographic covariates included participant gender and age. Next, analysis of the protective model was conducted using hierarchical linear regression to test the hypothesis that psychological distress associated with victimization decreased in the presence of strong peer or family support. In this analysis, the victimization scale was centered by subtracting the mean and the support variables already had a mean of zero through the creation of the standardized factor scores. Main effects included in the compensatory model were entered in step one, and product terms of victimization and each support variable were then entered separately in a second step to test for change in variance explained by including the interaction terms. Finally, regression models were used to test the hypothesis that the effects of peer support increase with age and family support decrease with age. Age was centered by subtracting the mean, product terms were calculated, and then entered into the second step of the model after the main effects of age, sex, victimization, peer support, and family support.

Results

Descriptive Statistics

Table 1 summarizes the demographic characteristics of the sample. Participants ranged in age from 16–24 years ($M=20.2$, $SD = 2.3$) and 56% were under age 21. Sixty-six percent were racial/ethnic minorities and 70% characterized the home they “grew up in” as “middle class.” The majority identified as gay or lesbian. Approximately 40% lived with their families, with the majority of other participants in some other form of stable housing (i.e. living alone, with a roommate, or with a romantic partner in an apartment, dorm, or house); few had no permanent residence. Not surprisingly, more youth 18 years old and younger lived at home compared to those over 18 (65.5% versus 31.7%; Chi square = 39.85, $p < .001$). Participants were fairly evenly divided among educational levels varying from partial high school through completion of college.

In order to contextualize the effects of social support in the following models, we report data on knowledge of sexual orientation by parents, siblings, and friends and their reactions (see Table 2). Across relationships, close heterosexual friends were most likely to be aware of the participants' sexual orientations, mothers and sisters were next, followed by brothers and fathers, but knowledge was relatively high in all types of relationships. Across relationships, only 2.4% of LGB youth report no one who knew their sexual orientation whereas 22.4% indicated that all of these individuals were aware. In terms of reactions, only 2.8% of participants reported no accepting individuals and 11.1% reported all individuals were accepting, indicating most participants had received mixed responses. Interesting demographic differences existed in knowledge of and reaction to participants' sexual orientation, which are represented by odds ratios from logistic regression models that simultaneously including age, sex, and race/ethnicity. As shown in the table, female participants were less likely to have disclosed their sexual orientation to their parents (63% less likely for mother and 59% for father) and disclosure increased with age (e.g. 18% per year for disclosure to mother). Compared to White youth, Black participants were less likely to disclose to parents and friends (50% less for mothers, 67% for fathers, 73% for closest

heterosexual male friend, 86% for closest heterosexual female friend), and Latino youth were 64% less likely to disclose to their mother and 65% to their father. Participants were significantly more likely to report acceptance by a friend of the opposite sex. Degree of disclosure was not significantly correlated with psychological distress ($r = -.01$, $p = .90$), but it was moderately associated with degree of victimization ($r = .15$, $p < .01$).

Table 3 contains descriptive statistics for each of the variables included in the resiliency models. To help characterize the sample, the BSI scores were converted to T-scores, which had a mean (SD) of 58.22 (10.54) that corresponded to a clinical level of psychological distress among 32.7% of the sample. For further analytic purposes raw BSI scores were used. General Linear Models (GLM) with race/ethnicity and sex as factors and age as a covariate were used to explore demographic differences in variables. For the BSI, there were significant differences by race/ethnicity (Means [SD]: White = 18.97 [12.99]; Black = 13.92 [13.55]; Latino = 14.62 [12.85]; Other = 19.76 [14.02]), $F(3, 419) = 4.07$, $p < .01$. There was also a trend towards females scoring higher (females = 18.81 [14.69]; males = 15.19 [12.67]), $F(1, 419) = 3.56$, $p = .06$. For degree of victimization, there were significant race effects (White = 1.68 [0.57]; Black = 1.85 [0.59]; Latino = 1.54 [0.42]; Other = 1.73 [0.62]), $F(3, 419) = 5.90$, $p < .01$. There was also a significant sex difference, with males (1.74 [0.56]) reporting significantly more victimization than females (1.60 [0.54]), $F(1, 419) = 4.26$, $p < .05$. Inspection of the individual victimization items showed that the frequencies of different types varied; verbal insults were most common, followed by threats to disclose sexual orientation, while being threatened with a weapon or spat upon were the rarest. Only 6% ($N = 26$) of participants reported never having experienced any of these forms of victimization, indicating that some kind of sexual orientation-based victimization is almost universally experienced by these young people. Measures of family and peer support did not show significant demographic differences.

Table 3 contains correlations between each of the variables. Degree of victimization was positively correlated with psychological distress and the indices of family and peer support were negatively correlated with distress. Victimization was significantly negatively correlated with every measure of peer and family support. Of note, all of the variables that were hypothesized to serve as indicators of the same latent factor were significantly correlated. Principal components factor analysis was used to create the family (80.46% variance explained, all loadings $> .85$) and peer support (63.21% variance explained, all loadings $> .50$) factors.

Compensatory and Protective Process Models

The compensatory process model hypothesized that peer and family support had promotive effects that were independent of the risk associated with level of victimization. Table 4 contains the results of the multiple linear regression analysis used to test it. Peer support showed the strongest relationship with psychological distress, followed by victimization, and then family support. That all three factors were significant in the same multivariate model is consistent with the hypothesis of the compensatory model. Demographic covariates included in the model indicate that women reported higher levels of psychological distress, but age was not significantly associated. Overall the model explained one quarter of the variance in psychological distress.

Hierarchical linear regression models were used to test the protective model, which hypothesized that psychological distress associated with victimization decreased in the presence of strong peer or family support. Main effects included in the compensatory model were entered in step one, and product terms of victimization and each support variable were then entered separately in a second step. Inconsistent with protective effects, the interaction terms in the second step of the models were not significant and did not result in a important

change in variance explained (victimization by family support R^2 change = .002; victimization by peer support R^2 change = .001).

Developmental effects

Regression models were used to test the hypothesis that the effects of peer support increase with age and family support decrease with age. The interaction between age and family support was significant (Standardized Beta = 0.09, $p < .05$), but the interaction between age and peer support was not. Figure 1 illustrates the interaction with family support at plus and minus one standard deviation on the X-axis and levels of psychological distress plotted separately for the sample split by mean age. A simple slopes test showed the slope in participants under age 21 was significantly higher than those 21 and older ($t, 421 = 2.61, p < .01$), indicating that younger participants benefited significantly more from family support than their older participants.

Discussion

In a community sample of LGB youth, we reported concerning levels of victimization, ranging from verbal insults to physical violence, with 94% of participants experiencing some form of victimization perceived to be a result of their sexual orientation. Despite these experiences of victimization, there was considerable variability in levels of psychological distress. Approximately one third of the sample reported clinical levels; in comparison to established norms (Derogatis, 2000) this represents a moderate increase in psychological distress ($d = .80$). This heterogeneity in psychological distress suggests the presence of resources in some of these youths' lives that make them resilient against these ubiquitous negative experiences. Our study extends previous work on LGB youth that has been largely risk-focused by testing two process models from the resiliency literature that emphasize promotive effects of social support.

Our test of a compensatory model indicated that while victimization had a significant positive association with psychological distress, peer support had an independent promotive effect. In fact, social support from peers was the strongest correlate of psychological distress and its promotive effect did not vary significantly with age. Our measure of peer support reflected lack of social loneliness, peer acceptance of homosexuality, and a sense of having friends as a resource. The importance of these factors in our sample of LGB young people is consistent with both theoretical and empirical support for the perspective that relations with peers are critical developmental contexts for adolescents (Brown, 2004; Furman, Brown, & Feiring, 1999). Unfortunately, prior research suggested that LGB youth may have faced obstacles in developing and maintaining supportive peer ties (Anhalt & Morris, 1998; D'Augelli & Hershberger, 1993; Williams et al., 2005) because of rejection due to disclosure of their sexual minority identity or fears that platonic intimacy may be misconstrued as sexual interest (Martin & Hetrick, 1988). As the social acceptance of homosexuality continues to improve, many LGB young people are coming out at earlier ages (Savin-Williams, 2005)—indeed our data indicate that nearly 90% had come out to their closest male or female heterosexual friend, with over 85% reporting acceptance. Efforts to create settings where sexual minority young people can socialize and form friendships with others like themselves, such as LGB youth centers, may be one route to further facilitating this kind of peer support. Another important resource is Gay-Straight Alliance (GSA) student clubs, of which there are currently in over 3,000 in high schools around the U.S. (see the national organization at www.glsen.org). Recent research has also found many LGB youth are successfully using the Internet to forge friendships and romantic relationships, some of which become manifested in the offline world (Hillier & Harrison, 2007). The effects of these online relationships are largely unknown and merit further study.

Family support was significantly associated with psychological distress in the multivariate model that also included victimization and peer support. Few prior studies of LGB youth have explored the importance of family support in understanding victimization and mental health. Hershberger and D'Augelli (1995) found that family support, in concert with self-acceptance, mediated the relationship between victimization and mental health among 15–21 year old LGB youth, but they did not measure peer support. Williams and colleagues (2005) found in a mixed LGB/heterosexual sample of youth that a combined peer and mother support variable mediated the relationship between sexual orientation and mental health. By combining mother and peer social support it was not possible to disentangle their independent effects. The results of our study suggest that while family support is negatively related to psychological distress, its effects are not as pronounced as peer support. Furthermore, LGB youth appear unremarkable in the greater relative influence of peer relationships on mental health in late adolescence and emerging adulthood, a pattern found in general samples (e.g. Collins & van Dulmen, 2006).

While peer and family support had significant compensatory effects, they did not eliminate the negative effects of victimization, which remained significant in the multivariate model. Similarly, our test of a protective model did not detect a significant interaction between victimization and either form of support. Our results are in contrast with those reported by Hershberger and D'Augelli (1995) who found a significant interaction between victimization and family support in predicting LGB youth mental health. Their results suggested that victimization was only associated with mental health among youth high in family support. If our current results are correct, they indicate that social support is only part of the solution for increasing the well-being of LGB young people, as victimization still had negative consequences even in the presence of social support. This has important implications for efforts to address mental health issues in this population—victimization must be addressed directly as its negative effects cannot be eradicated by support. An example of such efforts are Safe School Coalitions (Perrotti & Westheimer, 2001), which create structures in schools to reduce bullying and violence directed at LGB youth. Mental health professionals can play an important role in advocating and supporting the creation of such programs as a means to improve the mental health of LGB youth in their community.

In addition to testing the resiliency process models, we also explored gender, age, and ethnicity differences in study variables. Consistent with some previous findings (Balsam et al., 2005; Bontempo & D'Augelli, 2002; D'Augelli, Pilkington, & Hershberger, 2002; Pilkington & D'Augelli, 1995), gay and bisexual male youth reported higher levels of victimization. This may reflect the fact that young men in general are more likely to be victims of some of these kinds of physical violence (Eaton et al., 2006). It may also reflect more negative attitudes in American society towards male homosexuality relative to female homosexuality, particularly among heterosexual men (Herek, 2002; Ratcliff, Lassiter, Markman, & Snyder, 2006). A third possibility is that females reported lower levels of victimization because our measure focused on overt forms of aggression, and women tend to express aggression in an indirect, relative to a direct, manner (Richardson & Green, 1999), which may make our study less sensitive to the type of victimization that may be experienced by female participants from their female peers. While males experienced higher levels of some kinds of victimization, lesbian and bisexual females reported higher levels of psychological distress. This difference may reflect a higher overall prevalence of internalizing mental health problems among young women in general (Nolen-Hoeksema & Girgus, 1994), given the opposite sex difference for victimization. Another interesting sex difference was related to disclosure and acceptance of sexual orientation; female participants were significantly less likely to disclose their sexual orientation to their parents whereas in both sexes acceptance was more likely to come from a peer of the opposite sex. Reduced disclosure by the female participants may be due to women tending to reach sexual

orientation milestones at a later age than males (Savin-Williams & Diamond, 2000), and therefore given the age of our sample more of the women may have been at an earlier stage of the coming out process. Same-sex attracted youth may feel greater acceptance from their opposite-sex peers as such relationships may be less likely to trigger real or imagined blurring of romantic and friendship boundaries.

Our hypothesized increases in the effects of peer support and decreases in the effects of family support with age were only partially supported. Our analyses found that the effects of family support decreased with age, whereas the age by peer support interaction was not significant. Past research on developmental changes in the balance of peer and family influences have produced mixed results (e.g. Brown et al., 1993; Meeus & Dekovic, 1995). Our data suggest that LGB youth interventions focused on peer support could be effective across the 16–24 age range under study, whereas intervention focused on family relationships may be most effective if targeting youth at the younger end of the age range. While some LGB youth mental health interventions targeting the social context (e.g., schools) have been studied, interventions focused on the family context have been underdeveloped (Garofalo, Mustanski, & Donenberg, 2008). Our research suggests that both of these domains of support are promising areas for future research as the majority of youth reported that their parents, siblings, and friends know their sexual orientation and are accepting.

While we did find age differences in the effects of family support, few other age differences were found in the mean levels of variables in this sample of 16 to 24 year olds. Not surprisingly, older participants were more likely to report family members were aware of their sexual orientation. Racial/ethnic differences were more pronounced in this highly diverse sample. Racial/ethnic minority participants were less likely to disclose their sexual orientation to family members, a finding that is consistent with previous research on sexual orientation disclosure rates of LGB youth (Rosario et al., 2004). This may reflect racial/ethnic minority differences in attitudes towards homosexuality and stress related to disclosure (Stokes, Vanable, & McKirnan, 1996). Black participants reported the highest levels of victimization, followed by “Other,” then White, and then Latino. While the Black-White differences may represent the fact that Black youth experience violence more often than White youth (Eaton et al. 2008), this is not an entirely satisfactory explanation as Latino youth also experience more violence than White youth, but in our sample Latinos reported the lowest levels of victimization. Unlike levels of victimization, White and “Other” participants reported the highest levels of psychological distress. This finding is consistent with previous research with representative samples focused on racial/ethnic differences in depression prevalence (Breslau, Aguilar-Gaxiola, Kendler, Su, Williams, & Kessler, 2006). That racial/ethnic minority participants reported lower levels of distress suggests that promotive and protective effects of being a racial/ethnic minority may be operating; one possibility meriting further investigation is the possibility of generalization of racial/ethnic discrimination coping strategies to sexual minority discrimination.

Study limitations must be considered when interpreting these findings. These data are cross-sectional and, therefore, we cannot draw conclusions about causality or if age differences are truly developmental effects. For example, it is possible that lack of social support causes increased psychological distress or those with better mental health are more able to access peer support. It is also not possible to determine if age differences represent developmental effects in the absence of longitudinal data. All data were collected through self-reports and are subject to social desirability; youth may have minimized or over-reported experience of victimization and the quality of social relationships and these biases may be correlated. However, research suggests that self-reported data of sensitive issues collected via computer-assisted techniques may reduce reporting bias (Morrison-Beedy, Carey, & Tu,

2006). Another limitation of our assessment approach was that not all measures specified the same reporting timeframe. This issue is partially ameliorated by the fact that the outcome variable (psychological distress in the past week) had a timeframe most proximal to the reporting period, whereas the independent variables had more distal timeframes (e.g. lifetime victimization). As such, the reporting timeframes were not inconsistent with the models we were testing. Nevertheless, future studies, particularly longitudinal studies, may benefit from matching reporting timeframes across constructs when feasible and appropriate.

Subjects were recruited from one Midwestern, urban geographic area and the survey was administered at a community-based site offering health care and social support services. As such, our findings may not generalize to other regions or young people who would not come to the community center. We did not track recruitment source, so it was not possible for us to determine the percentage of youth who were recruited through this center or were new to the center. Our recruitment approach did not result in sufficient numbers of transgender or “questioning” participants for them to be included in the analytic sample. Our ongoing studies targeted specifically at transgender youth will be able to explore the extent to which these findings are similar in this population. Despite these sampling limitations, it is important to highlight the racial/ethnic diversity of the sample, which was over two-thirds minorities. With a few important exceptions (e.g. D’Augelli et al., 2005; Rosario et al., 2002; Rotheram-Borus & Koopman, 1991), this level of ethnic diversity has not frequently been represented in prior LGB samples.

A recent review of the literature on adolescent resilience noted a distinct absence of research testing formal models of resilience among LGB youth (Fergus & Zimmerman, 2005). Here we report a test of two such models, which illustrate the usefulness of formally testing specified models of resiliency processes. Our results highlight the negative effects of victimization, which are not canceled out by the positive effects of social support. Mental health professionals working with LGB youth should explore approaches to increasing peer and family support and public health efforts should be targeted at reducing victimization.

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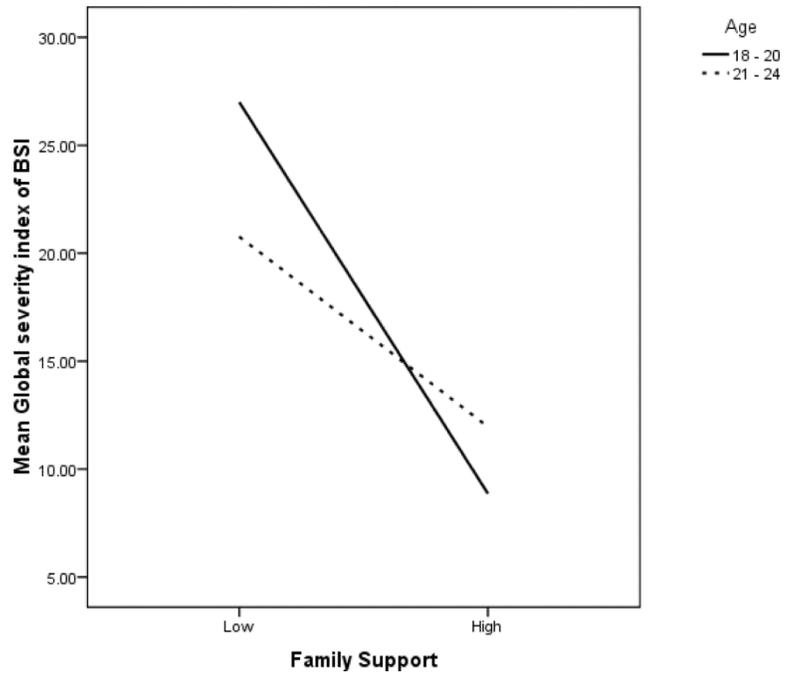


Figure 1. Interaction between age and family support in predicting psychological distress.

Table 1

Sample demographics

	Male		Female	
	N	%	N	%
Age				
16–17	35	11.7	18	14.3
18–20	125	41.8	60	47.6
21–24	139	46.5	48	38.1
Race/Ethnicity				
White	91	30.4	54	42.9
Black	98	32.8	23	18.3
Hispanic/Latino	77	25.8	32	25.4
Asian/Pacific Islander	10	3.3	5	4.0
Other/Multiracial	23	7.7	12	9.5
Socioeconomic Status				
Lower	56	18.8	19	15.1
Middle	207	69.5	90	71.4
Upper	35	11.7	17	13.5
Living situation				
Living with parents/family	127	42.5	47	37.3
Other stable housing	160	53.5	75	59.5
Unstable housing	12	4.0	4	3.2
Highest education				
Junior High	9	3	3	2.4
Partial High School	55	18.4	30	23.8
High School	72	24.1	23	18.3
Partial College	102	34.1	44	34.9
College	57	19.1	24	19
Graduate School	4	1.3	2	1.6
Sexual Orientation				
Gay	251	83.9	4	3.2
Lesbian	0	0	62	49.2
Bisexual	48	16.1	60	47.6

Table 2

Disclosure of sexual orientation by relationship to youth and demographic differences

Relationship	Percentage Endorsing	OR Female	OR Age	OR Black	OR Latino	OR Other Race
Mother	77.8	.37*	1.18*	.50*	.36*	.43*
Acceptance	50.5	.93	1.09	.81	1.13	1.18
Father	65.6	.41*	1.04*	.33*	.35*	.38*
Acceptance	41.7	.87	1.00	.77	.50*	.68
Closest Sister	74.9	.72	1.15*	.75	.64	1.30
Acceptance	75.6	.87	.93	.75	1.37	2.05
Closest Brother	70.0	.62	1.12*	.55	.34*	.54
Acceptance	67.8	.98	1.02	.79	.64	2.00
Closest Heterosexual Male Friend	89.4	2.12	1.17*	.27*	.72	.82
Acceptance	85.9	2.55*	1.10	.32*	.74	1.20
Closest Heterosexual Female Friend	92.6	.68	1.21	.14*	.34	1.17
Acceptance	92.8	.43*	1.01	.34*	.71	1.17

Note: Percentages only include youth who indicated that the specified individual is present in their life. Percentage for acceptance is only with individuals where disclosure occurred.

OR = Odds ratio. For comparisons based on race, White was used as the reference group

* p ≤ .05 for results of multivariate logistic regressions.

Table 3

Descriptive statistics and correlations for resiliency model variables

Variable	1. BSI	2. Vict	3. MSPSS Family	4. SELSA Family	5. FACES	6. MSPSS Friends	7. SELSA Social	8. Friends' Attitudes
Mean	16.27	1.70	4.71	5.10	29.35	5.80	5.40	3.03
SD	13.28	0.55	1.78	1.14	9.15	1.16	1.15	.75
2.	.27*							
3.	-.30*	-.24*						
4.	-.37*	-.32*	.76*					
5.	-.31*	-.22*	.65*	.70*				
6.	-.37*	-.16*	.46*	.34*	.32*			
7.	-.42*	-.20*	.36*	.36*	.33*	.74*		
8.	-.13*	-.07	.13*	.08	.04	.24*	.29*	

Note: BSI = Brief Symptom Inventory; Vict = Victimization Scale; MSPSS = Multidimensional Scale of Perceived Social Support; SELSA = Social and Emotional Loneliness Scale for Adults; FACES = Family Adaptability and Cohesion Evaluation Scale; Friends' Attitudes = Friends' attitudes towards homosexuality.

* $p < .05$.

Table 4

Compensatory Model

	Beta	Std. Error	Standardized Beta	Sig
Age	-.10	.24	-.02	.67
Sex	4.54	1.25	.16	<.001
Victimization	4.39	1.06	.18	<.001
Peer Support	-4.12	.62	-.31	<.001
Family Support	-2.25	.64	-.17	<.001

Note: For Sex, 1 = male, 2 = female. Adjusted $R^2 = .25$