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**SEXUAL ORIENTATION VICTIMIZATION, MINORITY STRESS, AND  
ADJUSTMENT IN LESBIAN, GAY, AND BISEXUAL YOUTH**

A Dissertation in  
Human Development and Family Studies

by  
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Submitted in Partial Fulfillment  
of the Requirements  
for the Degree of

Doctor of Philosophy

May 2010

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## ABSTRACT

Many lesbian, gay, and bisexual (LGB) adolescents experience frequent verbal and physical victimization due to their sexual orientation, which has been associated with mental health and behavioral problems. In order to explain the mechanisms by which victimization affects mental health, Meyer (2003b) theorized that sexual orientation victimization increased more proximal indicators of stress related to sexual orientation, or minority stress, such as fears of being discovered to be LGB and internalized homophobia. These were hypothesized to increase mental health and behavioral problems with further consideration being given to possible mediators or moderators of this association. Using a sample of 528 LGB youth, I tested Meyer's theoretical model, considering personal resources (self-esteem and mastery), social support, LGB-specific social support, and minority identity characteristics as possible mediators and moderators between minority stress and mental health.

Results indicated that sexual orientation victimization predicted mental health and behavioral problems, although this finding disappeared after controlling for other stressful life events. Additionally, victimization predicted minority stress which, in turn, predicted mental health problems. Evidence was found for partial mediation between minority stress and victimization by personal resources and moderation by social support. Furthermore, with the exception of minority identity characteristics, all moderator analyses indicated that externalizing problem behaviors should be treated separately from internalizing behaviors and other mental health symptoms when considering the effect of minority stress on mental health. Youth with worse contexts (i.e., less social support, fewer personal resources) were less likely than youth with more supportive contexts to exhibit externalizing behaviors in response to minority stress

but were equally likely to exhibit internalizing behaviors and report increased stress. For minority identity characteristics, no effects were found.

Following a summary of the implications of these results, I describe limitations to the current research program and suggest ways for researchers to further examine this theoretical model.

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## ACKNOWLEDGEMENTS

I would like to thank my advisors, Tony and Peter, for all of their help and guidance throughout my graduate career as they molded me in the form of a substantive and methodological researcher, respectively. I am grateful for the endless articles to read, resources to access, the red pens, and the late nights. Also, I would not have been able to complete my studies without Mike Rovine, who provided invaluable support through advice, suggestions, paid work, and a friendly shoulder to lean on. I am grateful to Dr. Zhang as well, for agreeing to serve on my committee and providing a raw, statistical point-of-view to a group of developmentalists.

Finally, I am indebted to my family and friends for their patience, laughter, and kindness.

As always, this work is dedicated to the memory of Joey.

## Chapter 1

### **Introduction**

Although research on lesbian, gay, and bisexual (LGB) youth has consistently found elevated levels of victimization and mental health difficulties, little is known about the processes by which victimization affects mental health and behavioral problems for these youth. Additionally, although levels of victimization are higher overall for LGB youth (e.g., Russell, Franz, & Driscoll, 2001), victimization that is related to sexual orientation is common and appears to have a particularly strong association with poor mental health. In response, Meyer (2003b) proposed a “minority stress” model in which sexual orientation-related victimization affects the adjustment of LGB people through the anticipation and interpretation of victimization events, especially negative confirmatory self-biases and prejudice. Meyer also proposed that both personal and social resources, particularly in the form of sexual orientation-specific support, would serve as mitigating factors against the negative effects of victimization. In this study, I propose to empirically test the minority stress model, with particular attention given to the theoretical processes by which victimization is associated with mental health symptoms and behavioral problems.

#### Meyer's Minority Stress Model

Meyer's (2003b) model of minority stress provides a conceptual framework to address the possible effects of LGB-related victimization. In this model, same- or both-sex orientations lead to minority identities as lesbian, gay, or bisexual and to distal minority stress processes, such as experiences of victimization and prejudice related to sexual orientation. Additionally, these distal processes are contained within general stressors that people may experience, such as

major changes in their lives (e.g., changing jobs, ending a relationship, or moving). These general and distal minority stress processes are proposed to interact with more proximal minority stress processes to affect mental health. One important set of proximal minority stress processes may be anticipating and fearing victimization and, subsequently, concealing sexual orientation. Meyer also proposed that the influence of proximal minority stress processes on mental health is, in turn, influenced by characteristics of sexual identity, including how important sexual orientation is to an individual or how salient an individual's sexual orientation is to people in the surrounding environment. Finally, Meyer focuses on factors that might mitigate the effect of minority stress, which are themselves proposed to be influenced by sexual identity, namely, the availability of external social support that is both general and related to sexual orientation and the positive coping capabilities and personal resources of the individual. Below, I elaborate on each of these possible influences on the adjustment of LGB youth.

The minority stress model has been applied to several studies involving LGB adults. For instance, minority stress, in the form of internalized homophobia, has been shown to mediate the relationship between victimization and relationship quality among same-sex couples (Balsam & Szymanski, 2005; Otis, Rostosky, Riggle, & Hamrin, 2006) and rejection and defensiveness regarding parenting in lesbian mothers (Bos, van Balen, van den Boom, & Sandfort, 2004). In a longitudinal study, Hatzenbuehler, Nolen-Hoeksema, and Erickson (2008) found that minority stress predicted a variety of negative outcomes for bereaved gay men, even when characteristics of their bereavement were not predictive (e.g., how close they were with the deceased person). Lewis, Derlega, Clarke, and Kuang (2006) found that lesbian adults who were socially isolated and experienced high levels of prejudice and discrimination were also likely to have high levels of internalized homophobia.

Although there are not any published studies of LGB youth that systematically test the minority stress model, Willoughby (2009) reported that negative views about sexual orientation mediated the prediction of internalizing symptoms and sexual orientation disclosure by victimization and family rejection for LGB youth who participated in his dissertation study. In this study, I will examine the associations between the following factors in the minority stress model by empirically testing how these factors influence each other in a sample of LGB youth: general stressors and life events, sexual orientation victimization, proximal minority stress, personal resources, social support, and characteristics of minority identity.

#### *General Stressors and Life Events*

Researchers have shown that major life events (i.e., marriage, divorce, birth or death of a child) place adolescents at a greater risk of mental health difficulties due to increased stress (e.g., Johnson & McMurrich, 2006). For LGB youth, Rosario, Rotheram-Borus, and Reid (1996) found that youth experiencing more stressful life events unrelated to sexual orientation manifested more personal distress than those experiencing fewer stressful life events. However, the inclusion of general stressors is rare in current studies, with most research focusing on LGB-specific stressors for adolescents, such as sexual orientation disclosure and victimization, while ignoring general life events. As a result, some have suggested that the higher incidences of mental health problems among LGB people are due to participants' stressful environments rather than LGB-specific minority stress (e.g., Savin-Williams, 2005). For example, a child whose parents are divorcing may be at greater risk of mental health symptomology and behavioral problems due to changes associated with the divorce, which may include changes in schools and neighborhoods that place the child at a greater risk of victimization. Therefore, the association between victimization and mental health and behavioral problems would appear to be stronger

than would occur without divorce because both victimization and life changes contribute to the association. In this study, I will control for the effects of life events in order to examine, independently, the association between victimization and adjustment.

### *Sexual Orientation-Related Victimization of LGB Youth*

LGB youth experience high levels of sexual orientation-related physical and verbal victimization by family members, peers, and community members, according to both representative and convenience samples (e.g., D'Augelli, Grossman, & Starks, 2006; D'Augelli, Pilkington, & Hershberger, 2002; Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998; Williams, Connolly, Pepler, & Craig, 2005). In addition to multiple perpetrators, LGB youth also report experiencing multiple forms of victimization ranging from name-calling (i.e., “faggot” or “dyke”) to physical attacks with weapons (D'Augelli, 2003; D'Augelli et al., 2002; Hershberger & D'Augelli, 1995).

Schools appear to be particularly stressful places for LGB youth. Youth report more harassment, property destruction, physical attacks with and without weapons, and threats of violence than heterosexual youth (Bontempo & D'Augelli, 2002; DuRant, Kahn, Beckford, & Woods, 1997; DuRant, Krowchuk, & Sinal, 1998; Faulkner & Cranston, 1998; Garofalo et al., 1998; Rivers, 2001; Russell et al., 2001). They are more afraid to go to school and witness more violence than heterosexual youth (DuRant et al., 1997, 1998; Russell et al.). Additionally, LGB youth are more likely to carry weapons to school and to be involved in fights, both as victims and as perpetrators (DuRant et al., 1997, 1998; Faulkner & Cranston; Russell et al.). When only LGB and heterosexual youth with high levels of school victimization are considered, LGB youth are more likely than similar heterosexual youth to miss school because they are afraid, to use substances such as cigarettes, alcohol, and illicit drugs, and to have risky sexual behaviors

(Bontempo & D'Augelli).

The majority of studies focus on experiences within schools because these data are most readily available. Still, national samples have shown that LGB youth are more likely than heterosexual youth to be victimized at home (Busseri, Willoughby, Chalmers, & Bogaert, 2006; Garofalo et al., 1998) and to run away from home (Saewyc, Bearinger, Heinz, Blum, & Resnick, 1998). Additionally, convenience samples of LGB youth have found that sexual orientation victimization by family members is common, particularly verbal victimization (D'Augelli, 2003; D'Augelli, Hershberger, & Pilkington, 1998; D'Augelli, Grossman, & Starks, 2005). Therefore, LGB youth may lack social resources outside of school that may help them cope with victimization within school systems.

Sexual orientation victimization has been repeatedly associated with mental health and behavioral problems for LGB youth. Several studies have shown links between sexual orientation victimization and general symptomology (e.g., D'Augelli, 2002, 2003; D'Augelli et al., 2002), depression (e.g., D'Augelli, 2002), anxiety (e.g., D'Augelli, 2002; Rosario, Schrimshaw, Hunter, & Gwadz, 2002), trauma symptoms (D'Augelli et al., 2002), behavioral problems (Rosario et al.) and, perhaps most consistently, suicidal ideation and attempts (D'Augelli et al., 1998, 2002, 2005).

In his article, Meyer (2003b) reviews research that suggests that the effects of sexual orientation-related victimization on adjustment are two-fold. First, there can be a direct effect of victimization on adjustment, wherein victimization leads to increases in mental health and behavioral problems. There can also be an indirect effect through a mediator, wherein victimization affects the way people view their sexual orientation, causing some to denigrate themselves for being LGB or increasing their fears of being discovered to be LGB. This, in turn,

would lead to an increase in mental health and behavioral problems. Alternately, sexual orientation victimization may differentially affect youth, depending upon their feelings about their sexual orientations and the personal and social resources they have to cope with victimization, which would indicate that victimization is moderated by these factors. Empirical evidence, as discussed below, exists to justify both mediator and moderator processes. Therefore, this study will empirically test both mediator and moderator models to determine the most appropriate process by which minority stress leads to mental health and behavioral problems.

### *Proximal Minority Stress*

Although much of the research on stress in LGB populations focuses on experiences related to minority status, such as discrimination, victimization, and rejection due to sexual orientation, Meyer (1995, 2003a, 2003b) argues that subjective stressors such as fears about the consequences of disclosure and internalized homophobia are also critical in assessing minority stress in LGB populations. There is some evidence that proximal minority stress processes may serve as both mediators and moderators of the effect of sexual orientation victimization on adjustment. If proximal minority stress *mediates* the association between sexual orientation victimization and adjustment difficulties, then victimization would increase proximal minority stress which would lead to adjustment difficulties. In other words, without proximal minority stress, victimization would have little to no effect on adjustment. Alternately, if proximal minority stress *moderates* this association, youth with low minority stress would demonstrate little to no association between sexual orientation victimization and adjustment difficulties, whereas youth with high minority stress would have a significantly positive association between victimization and adjustment difficulties. Under moderation conditions, therefore, proximal minority stress interacts with sexual orientation victimization to predict adjustment difficulties.

### *Fears of Sexual Orientation Disclosure*

Many LGB youth report concealing their sexual orientations in order to manage stigma (D'Augelli, 1994a; D'Augelli et al., 2005). As Meyer (2003b) discusses, although this coping strategy may be initially effective to manage stigma, it may contribute to the relative isolation of LGB individuals from friends, family members, and peers and may reinforce negative stereotypes about LGB people and negative views about the self, therefore functioning as a mediator between victimization and mental health and behavioral difficulties. In the alternate moderator model, sexual orientation-related victimization may lead to mental health difficulties only for youth who are trying to conceal their sexual orientations and are afraid of disclosure. In other words, youth who are afraid to have their sexual orientations discovered by others would have their concealment threatened by sexual orientation-related victimization, thereby increasing their stress, which would lead to mental health problems. According to Pachankis (2007), both of these processes may be applicable for any individual with a concealable stigma like a same-sex orientation. Individuals who are afraid of being discovered will spend a large amount of cognitive resources thinking about how and when they may be discovered and avoid having close relationships that may threaten their concealment. Therefore, these individuals would lack the personal and social resources necessary to effectively deal with victimization and other stressors.

Several studies of LGB youth have found associations between fears of victimization and rejection and mental health and behavioral problems (e.g., D'Augelli, 2002, 2003). Specifically, fears of rejection or harassment have been associated with general mental health symptoms (D'Augelli, 2002, 2003), depression (D'Augelli, 2002), and anxiety (D'Augelli, 2002). Strikingly, D'Augelli (2003) found that fears of victimization, specifically, were associated with suicidal

ideation even when reported incidents of victimization were not. Therefore, fears of rejection or victimization may be as important in predicting mental health and behavioral problems as the experience of victimization itself.

### *Internalized Homophobia*

The way in which youth regard their sexual orientations may also affect the association between sexual orientation-related victimization and mental health problems. LGB youth are generally socialized within a culturally homophobic and heterosexist context (D'Augelli, 1994a, 1994b; 2005). As part of their coming out process, many youth have to overcome this socialization and revise negative stereotypes about LGB people in order to develop a positive view of their own sexual orientations (e.g., D'Augelli, 1994a, 1994b; Herek, Gillis, & Cogan, 2009; Morris, Waldo, & Rothblum, 2001; Rosario, Hunter, Maguen, Gwadz, & Smith, 2001; for a review, see Szymanski, Kashubeck-West, & Meyer, 2008, or Williamson, 2000). Several studies of LGB adults and youth have shown a positive association between the internalization of negative societal views regarding LGB orientations and mental health problems such as depression (e.g., Frost & Meyer, 2009; Igartua, Gill, & Montoro, 2003; Rosario et al., 2002; Szymanski & Gupta, 2009; Wright & Perry, 2006), anxiety (e.g., Igartua et al.; Rosario et al., 2001, 2002; Szymanski & Gupta), low self-esteem (e.g., Rosario et al., 2001; Szymanski & Gupta), trauma symptoms (D'Augelli et al., 2002), and behavioral (Rosario et al., 2002; Rosario, Schrimshaw, & Hunter, 2006) and substance use problems (Rosario, Hunter, & Gwadz, 1997; Rosario et al., 2006; Wright & Perry).

It is possible that sexual orientation-related victimization serves to create or reinforce critical and negative views about sexual orientation, thus leading to increased mental health problems as a mediator. In a sample of LGB youth, D'Augelli et al. (2002) found a positive

association between sexual orientation victimization and internalized homophobia. Additionally, Hershberger and D'Augelli (1995) found that self-acceptance (a combination of self-esteem and comfort with being LGB) and family support mediated the association between victimization and mental health symptomology. In a longitudinal study of LGB youth, Rosario et al. (2002) predicted discomfort with homosexuality using gay-related stressful life events (defined as sexual orientation victimization in addition to and sexual orientation disclosure and other similar events). It is also possible that victimization will function differently for those who have negative views about their sexual orientations and those who do not. For those with negative views about their sexual orientations, victimization would reinforce negative cultural stereotypes or self-deprecating cognitions (e.g., "Because I'm LGB, I deserve to be punished or attacked"). For those with positive views about their sexual orientations, victimization may be attributed to negative thoughts about the attacker but not about themselves (e.g., "There is something wrong with the person who attacked me because there is nothing wrong with being LGB and, therefore, nothing wrong with me"). In this kind of process, internalized homophobia would serve to moderate the association between victimization and mental health problems.

As previously stated, both fears of sexual orientation disclosure and internalized homophobia have been hypothesized to function as both mediators and moderators of the association between sexual orientation-related victimization and mental health and behavioral problems. In this study I will empirically test these propositions in order to determine which process, or combination of processes, appears to be the most appropriate. In addition to these risk factors, I will also assess protective factors that may serve to buffer or insulate youth from the negative effects of victimization, as discussed in the next section.

### *Resilience through Personal Resources and Social Support*

Although researchers have generally been concerned with factors that increase the risk of mental health problems among LGB youth, it is equally important to examine factors that may serve to protect youth from the negative effects of victimization. Youth who have high self-esteem, a strong sense of control or mastery over their environments, and a supportive social network of friends and family should be better equipped to cope with stressful environments (Anderson, 1998; D'Augelli, 1994a). For LGB youth, stress regarding sexual orientation has been shown to be more likely to lead to mental health and behavioral problems for youth with lower self-esteem and a diminished sense of personal control over their lives (D'Augelli et al., 2006; Hershberger & D'Augelli, 1995; Rotheram-Borus, Rosario, Van Rossem, Reid, & Gillis, 1995). Additionally, parental rejection regarding sexual orientation has been associated with general mental health symptoms (e.g., D'Augelli, 2002), low self-esteem (D'Augelli et al., 1998; Ryan, Huebner, Diaz, & Sanchez, 2009), suicidal ideation and attempts (D'Augelli et al., 2005; Ryan et al.), and substance abuse (Ryan et al.). Although most of the research on LGB youth has been conducted from a risk standpoint, in this study I argue that these factors can be viewed as protective, with high self-esteem, strong senses of mastery, and support systems serving to protect youth against the negative effects of victimization (Anderson). For model testing, I will divide these factors into those that are intrapersonal (self-esteem and mastery) and those that are interpersonal (social support).

#### *Personal Resources*

*Self-esteem.* Similarly to the way in which internalized homophobia might explain the association between victimization and mental health, self-esteem might also serve to explain this association. With the nature of this population, it might be that self-esteem and internalized

homophobia are inextricably linked in several ways. One of the major developmental milestones of adolescence is identity development. As LGB identities are generally culturally devalued (D'Augelli, 1994a, 1994b; 2005), youth regard the exploration of their sexual identities as central to their development, thus affecting overall self-esteem in addition to their esteem regarding their sexual orientations (Thompson & Johnston, 2003; Thurlow, 2001). Additionally, youth with generally high self-esteem may not be affected by negative cultural views regarding their sexual orientations and thus have low levels of internalized homophobia. Thus, it is reasonable to anticipate that self-esteem and internalized homophobia will be highly correlated and should be examined for multicollinearity.

In several studies of LGB youth, self-esteem has been negatively associated with mental health and behavioral problems (D'Augelli et al., 1998, 2006; Rosario, Schrimshaw, & Hunter, 2005; Ryan et al., 2009). As with proximal minority stress factors, self-esteem might serve as both a mediator and moderator of the association between victimization and adjustment. As a mediator, I would expect that victimization would decrease self-esteem, leading to an increase in adjustment problems. Researchers have found evidence for self-esteem as a mediator between general peer victimization and mental health symptoms in general adolescent studies (e.g., Bosacki, Dane, and Marini, 2007; Lopez & DuBois, 2005). It is also possible that self-esteem might moderate the association between victimization and adjustment, wherein youth with low self-esteem are affected by victimization to a greater extent than youth with high self-esteem. In a sample of gay and bisexual men, Szymanski (2009) found that self-esteem moderated the effect of incidences of heterosexism, defined as harassment, discrimination, or rejection based on sexual orientation, on psychological symptoms. In another study of African-American LGB adults, Szymanski and Gupta (2009) found that self-esteem mediated the relationship between

internalized homophobia and psychological symptoms. In the LGB youth literature, I am only aware of one published study testing self-esteem as both a mediator and moderator of the association between victimization and mental health problems (Hershberger & D'Augelli, 1995). The researchers found evidence for a mediational process, when family support was considered alongside self-esteem, but not for a moderational process. Given that there is some evidence from the adult literature that a moderational process may be present, this will still be tested.

*Mastery.* Another important factor in resilience is a sense of mastery, or a sense of control over one's environment. For general populations, people who are experiencing stress tend to cope better when they feel as though they have some control over their situation, whether or not such control actually exists (see Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000, for a discussion). In the context of victimization, youth who are victimized may lose a sense of control and feel that their environments are unpredictable and dangerous (McDavitt et al., 2008; Szymanski, 2009). This would, in turn, lead to greater mental health difficulties and behavioral problems as youth attempt to regain a sense of control through maladaptive behaviors and cognitions (McDavitt et al.; Szymanski). In addition to the previous mediational relationship, mastery may also serve as a moderator. Youth who feel as though they can change their environments may be less likely to have adjustment problems than youth who feel as though their circumstances are out of their control. Youth with a high sense of mastery might feel as though they can avoid situations that would allow for future victimization, whereas youth with a low sense of mastery might feel as though they are incapable of removing themselves from situations wherein they previously experienced victimization (McDavitt et al.; Anderson, 1998).

### *Social Support*

*General social support.* Developmental researchers draw heavily upon Bronfenbrenner's

theory of ecological systems in order to make sense of how individuals interact with their environments (Bronfenbrenner & Morris, 2006). According to ecological systems theory, people located within an individual's immediate environment form a system that interacts with the personal characteristics of an individual to influence development. Although LGB youth in the U.S. are located within a general culture that is heterosexist and homophobic, youths' immediate contexts vary greatly from environments that embrace LGB identities to environments that are punitive and denigrating (D'Augelli, 1994a, 1994b, 2005; D'Augelli et al., 1998; Ryan et al., 2009). Logically, a supportive social environment should be associated with fewer adjustment problems and a non-supportive environment with more adjustment problems.

However, research on LGB youth that evaluates social support has had conflicting results, with some studies concluding that social support is a protective factor and others concluding that it is a risk factor. For example, Hershberger and D'Augelli (1995) found that family support both mediated and moderated the association between victimization, self-acceptance, and mental health. Also, Williams et al. (2005) found that victimization and social support mediated the relationship between sexual orientation and adjustment. Ueno (2005) found that associating with LGB peers at school reduced psychological symptoms and other negative effects of victimization for LGB youth. In a study of lesbian adults, sexual orientation-related support moderated the relationship between fears of prejudice and negative psychological and physical symptoms (Lewis et al., 2006). For participants with high sexual orientation-related support, there was no association between fears and symptoms, whereas participants with low sexual orientation-related support had a positive association. In a longitudinal study, Rosario et al. (2005) found that social relationships, in the form of both friend and family support, moderated the association between other negative social relationships and anxiety, depression,

and conduct problems, particularly for youth who had previously attempted suicide. Finally, D'Augelli et al. (2005) examined differences between youth who had disclosed their sexual orientations to their parents and those who had not. Youth who had disclosed their sexual orientations reported higher family support, less internalized homophobia, and less fear about parental rejection than closeted youth. As Meyer (2003b) asserts, social support that is specifically related to sexual orientation may be particularly important for mitigating the effects of minority stress.

Not all studies evaluating social support have drawn the same conclusions, however. Research has shown that LGB youth who are more connected to the LGB community (e.g., they have more LGB friends or they go to LGB-related events) also have higher levels of risk behaviors than youth who are less connected (e.g., Rosario, Schrimhaw, & Hunter, 2004; Wright & Perry, 2006). Researchers have proposed several reasons why this may be. First, LGB youth may become involved in the LGB community because they have been rejected by their families or receive little support from them and turn to the LGB community for support. Waldner and Magruder (1999) found that LGB youth who were “closeted” to their parents had less connection to the LGB community but more positive parental relationships than those who were “out” to their parents. Therefore, youth who are receiving general family support, even when it is not sexual orientation-specific, may be less likely to turn to the LGB community for support. Conversely, youth who have been rejected by their parents may be more likely to seek community support. Thus, the negative effects of community involvement could be due to the third factor of parental rejection.

Alternately, LGB people have historically used bars and clubs as major venues in which they meet other LGB people (Faltz, 1992). In order to socialize, youth may either find ways to

enter these bars and clubs or be relegated to more peripheral environments wherein alcohol and drugs are readily available (Jordan, Vaughn, & Woodworth, 1997; Rosario et al., 2004; Wright & Perry, 2006). Additionally, youth who come out at young ages may be isolated and unable to find LGB or LGB-friendly peers with whom to socialize (Savin-Williams, 2005). Therefore, they may begin to socialize with older adolescents and adults, making them more likely to engage in risky behaviors (Wright & Perry, 2006).

In conclusion, when measures of social support have assessed LGB community connection or the number of LGB friends, youth have shown elevated levels of risky behaviors when they receive social support. However, studies that have assessed peer relationships, family relationships, and the support of youths' sexual orientation development have generally concluded that social support is protective against sexual orientation-related victimization and other forms of heterosexism. Therefore, in this study I will analyze how both general social support and the support of friends that is specifically related to sexual orientation may impact the association between victimization and mental health.

#### *Characteristics of Minority Identity*

In addition to considering risk and protective factors, Meyer (2003b) theorizes that the relationship between proximal minority stress and adjustment difficulties must be considered in light of the salience of the minority identity. He is particularly concerned with how salient the identity is to each individual and only marginally with how others view the individual, given that sexual orientation can be concealed, unlike some other minority identities (e.g., race or ethnicity). However, as I argue below, the salience of an individual's sexual orientation to other people affects how people interact with the individual, particularly when sexual orientation is stereotypically equated with gender atypicality. Additionally, several studies have shown that

both-sex attracted or bisexual youth are at a greater risk for emotional and behavioral problems than same-sex attracted or gay and lesbian youth. Therefore, I will also examine sexual identity (lesbian or gay vs. bisexual) as a possible moderator.

### *Gender Atypicality*

Some research evidence suggests that the relatively higher gender atypicality of LGB youth places them at greater risk of general victimization than heterosexual youth. Several studies of LGB adults have shown that gender atypicality, whether in childhood or adulthood, is associated with higher levels of psychological symptoms, particularly for men (e.g., Lippa, 2008; Skidmore, Linsenmeier, & Bailey, 2006). For LGB youth, studies have shown that youth who are more gender atypical have fewer friends and are victimized more than youth who are gender typical (D'Augelli et al., 2006; Fitzpatrick, Euton, Jones, & Schmidt, 2005). Therefore, these youth may be relatively isolated, lack the protection of having an “in-group”, and can become the targets of bullying and other forms of victimization. These youth are then more likely to have general mental health symptoms and trauma symptoms (D'Augelli et al., 2006) and are more likely to attempt suicide (D'Augelli et al., 2005). Therefore, I will assess whether or not gender atypicality and identifiability as being LGB are associated with proximal minority stress and adjustment problems.

### *Sexual Identity*

Several studies have found increased risk of substance use, mental health problems, and eating disorders for both-sex attracted or bisexually-identified youth but not for same-sex attracted or lesbian/gay-identified youth (Austin et al., 2004; Busseri et al., 2006; Poteat, Aragon, Espelage, & Koenig, 2009; Robin et al., 2002; Russell, 2006; Russell, Driscoll, & Truong, 2002). Additionally, Robin et al. found that youth who had sex with both sexes were more likely than

heterosexual youth to attempt suicide, be harassed at school, and be injured or threatened with weapons at school, a result that was not found for youth who only had sex with the same sex. Russell et al. found that low self-esteem, anxiety, and depression were consistently problematic for both-sex attracted youth, but not same-sex attracted youth.

Several hypotheses have been proposed to explain these results. It may be that youth who report being attracted to both sexes are in early stages of the coming out process and are, therefore, in a crisis phase regarding their sexual orientation and whether or not to disclose their sexual orientation to others (D'Augelli, 1994a). In this stage of their development, youth may be more vulnerable to both victimization and negative cognitions about their sexual orientations (Hollander, 2000; Poteat et al., 2009). Studies that have compared youth who are questioning their sexual orientations to youth who identify themselves as LGB have found that questioning youth have more fears about social interactions than LGB-identified youth (Carver, Egan, & Perry, 2004; Espelage, Aragon, Birkett, & Koenig, 2008).

It may also be that gay and lesbian youth find a connection within the larger LGB community that bisexual youth do not experience. Bisexual adults frequently report that they experience a great deal of prejudice regarding their sexual identities and feel disconnected from both heterosexual and gay and lesbian communities (e.g., Balsam & Mohr, 2007; see Bradford, 2006, for a review). They report feeling pressured to “choose” either heterosexuality or homosexuality by both communities and having their attractions to both sexes either discounted or minimized. There is some evidence of “biphobia,” negative or stereotyped attitudes about bisexual people, being reported by gay, lesbian, and heterosexual individuals (Eliason, 1997; Mulick & Wright, 2002). Because of these findings, I hypothesize that the connection between minority stress and behavioral problems will function differently for bisexual youth than lesbian

and gay youth and will examine sexual identity as a possible moderator of this relationship.

*Mental Health and Behavioral Problems among LGB Youth*

According to national studies, LGB youth have a variety of mental health and behavioral problems (Russell, 2006; Russell et al., 2002; Russell et al., 2001). LGB youth use cigarettes, alcohol, and illegal drugs at higher rates than heterosexual youth both within school (DuRant et al., 1998; Garofalo et al., 1998) and outside of school (DuRant et al.; Faulkner & Cranston, 1998; Garofalo et al., 1998; Russell, 2006). There is an increased risk of eating disorders among LGB youth, particularly among gay and bisexual males (Austin et al., 2004).

In addition to these risky behaviors, researchers have consistently found that LGB youth are at increased risk for suicidal ideation and suicide attempts (DuRant et al., 1998; Faulkner & Cranston, 1998; Garofalo et al., 1999; Garofalo et al., 1998; Russell & Joyner, 2001). Garofalo et al. (1999) found that suicide attempts for LB females, but not GB males, were mediated by victimization and drug use. Bontempo and D'Augelli (2002) found that LGB youth were at increased risk for suicidal ideation, substance use, and sexual risk behaviors if they experienced victimization and harassment at school. If they reported low victimization at school, then their rates of risky behaviors were similar to heterosexual youth.

The current study extends earlier work relating the victimization of LGB youth based on their sexual orientation to adjustment and mental health problems (D'Augelli, 2005; D'Augelli et al., 2006; D'Augelli et al., 2002; Hershberger & D'Augelli, 1995; Pilkington & D'Augelli, 1995). In a prior report using a cross-sectional analysis of the sample used in this study, D'Augelli et al. (2006) explored the association between LGB youths' histories of sexual orientation victimization and trauma-related symptoms. As was found in other research (see Rivers & D'Augelli, 2001), three-quarters of the youth (78%) had experienced verbal sexual

orientation victimization (e.g., being called names, insulted, or teased) and 11% had experienced physical sexual orientation victimization (e.g., being punched, pushed, or kicked). Victimization started in childhood for many LGB youth, with verbal abuse occurring as early as age 6 and physical abuse as early as age 8. Youth who considered themselves gender atypical in childhood reported more past victimization and more current mental health symptoms. Clinically-significant post-traumatic stress disorder (PTSD) was found in 9% of the youth and was related to the frequency of past physical sexual orientation victimization.

In this study, I will extend these findings to empirically test Meyer's (2003b) minority stress model. As detailed above, victimization that is related to sexual orientation has been associated with mental health and behavioral problems for LGB youth. However, several factors were hypothesized to affect this association as both mediators and moderators: proximal minority stress, personal resources, social support, and characteristics of minority identity. This study will be an empirical test of these hypothesized effects.

## Chapter 2

### Method

Data analyzed here were drawn from a two-year longitudinal study of the role of SOV in the mental health of LGB youth. Youth were interviewed three times over a two-year period, but this study will focus solely on the initial interview to establish the mechanisms by which victimization affects adjustment. The assessment procedure consisted of an interview on a broad range of topics related to challenges faced by LGB youth and the completion of a battery of standard measures that assessed aspects of resilience and mental health. A complete description of the study procedures can be found in D'Augelli and Grossman (2006).

#### *Participants*

The sample consisted of LGB youth from 15 to 19 years of age, most of whom were attending community-based organizations in the New York area and its suburbs. Interviews lasted from two to three hours, and youth were given \$30 to compensate them for their time. Youth were assigned a trained interviewer of the same sex who was a master's-level mental health clinician. Interviews took place in private rooms at each site. Procedures were approved by IRBs at the investigators' universities. Additionally, youth advocates were available at each site to protect youths' rights and confidentiality, answer questions regarding the study, and refer youth to additional resources as necessary. Detailed information about IRB procedures can be found in D'Augelli and Grossman (2006).

There was a high degree of variability in youths' demographic characteristics. There were 528 participants in the first set of interviews, half (52%) of whom were males and half (48%) were females. Mean age was 17.03 ( $SD = 1.27$ ). The sample was diverse in terms of ethnicity

with 45% of Latino background and 55% not. Of the Latino youth, 86% were White and 11% were African American. Of the non-Latino youth, 43% were White, 36% were African American, 4% were Asian American/Pacific Islander, and two youth were Native American/Alaskan Native. Youths' socioeconomic status (SES) was calculated using a modification of Entwisle and Astone's (1994) procedures. Of the 456 youth who provided occupational information about their parents, 3% of parents were in the "Executive" category (e.g., real estate manager, financial manager), 15% were in the "Professional" category (e.g., lawyer, teacher), 15% were in the "Sales Occupations" category (e.g., car salesperson, advertising salesperson), 24% were in the "Technical/Administrative Support" category (e.g., computer programmer, secretary), 23% were in the "Service Occupations" category (e.g., bartender, nursing assistant), and 20% were in the "Manual Labor" category (e.g., mechanic, sewing machine operator). Although these youth are highly diverse in terms of demographics, most of these youth were from urban areas (71%) and may be experiencing stress due to their general environment, which further supports the importance of controlling for general stressors in the model.

### *Assessment*

#### *General Stressors and Life Events*

In the interview, youth reported whether or not two sets of stressful events, traumatic events and non-traumatic life events, had occurred within the past year. Questions regarding traumatic events were 14 items used in research by Norris (1992). Eight items involved direct exposure to crime that had the potential for bodily harm or violence (sample items: "Someone broke into your apartment, home, or place you were staying while you were there," "Being robbed or burglarized"). We used these items because research has found that crimes which involve the threat of bodily harm or actual harm are the most traumatic (Kilpatrick, Saunders,

Veronen, Best, & Von, 1987; Resnick, Kilpatrick, Best, & Kramer, 1992). Six other items associated with traumatic stress, also used by Norris (1992), were included (sample items: “Seeing a serious accident,” “Seeing a fight where a weapon was used”). To maintain the integrity of the scale, we did not ask youth if these events were related to their sexual orientation or not. Therefore, there may be some overlap between reported sexual orientation-related victimization and these events. As shown in the Results section, however, factor analysis indicated that sexual orientation victimization and these events were separate factors, which leads me to conclude that overlap is minimal. Responses were coded 0 (*not experienced*) or 1 (*experienced*) and were added to create a sum score for which the frequencies are shown in Table 1. Due to a positive skew, this sum score was transformed with a square root. Means and standard deviations for this and all subsequent study variables can be found in Table 5.

For non-traumatic life events, we used an inventory of life events based on research by Rosario et al. (1996). These items concern family, school, health, work, friendship, and legal issues. To avoid confounding these events with the sexual orientation stress variable, 32 life events unrelated to youths’ sexual orientation were used (e.g., “death of a grandparent” was used, but not “your parents found out you were LGB”). Responses were coded 0 (*not experienced*) or 1 (*experienced*) and then summed. One youth reported experiencing 26 out of 32 life events in the past year and was removed from analyses as an outlier. Frequencies of life events by gender are found in Table 2. Due to a positive skew, the scores for the other youth were transformation using a square root transformation to increase normality.

### *Sexual Orientation Victimization*

Youth were asked if they had ever experienced verbal, physical, or sexual victimization related to their sexual orientation using questions from other research (D’Augelli, 2002,

Pilkington & D'Augelli, 1995). Verbal victimization was assessed by asking, "Have you ever been called names, teased, or threatened with being hurt or beat up because you're lesbian [or gay or bisexual, depending on the youth's self-identification], or someone thought you were?" Examples of verbal victimization experiences youth reported were: a) "My mother threatened to throw me out of the house because I'm gay and called me a faggot" and (b) mother called youth "dyke bitch." Physical victimization was assessed with the question, "Have you ever been punched, kicked, or beaten, or hurt with a knife, gun, bat or some other weapon because you're LGB or someone thought you were?" Examples of physical sexual orientation victimization were: (a) Male, at 14: "Guys caught me outside school and started beating me with sticks" and (b) Female, at 14: "I had a fight with a girl because she thought I wanted her man. I told her I didn't want her man, and that I wanted her, so she stabbed me."

Although youth also provided information about sexual victimization that was related to sexual orientation, initial analyses of these incidents (factor loadings onto a latent victimization construct) were problematic. By examining the qualitative answers that youth provided regarding these incidents, I concluded that, unlike the verbal and physical incidents, youth had varying interpretations of how sexual victimization was connected to their sexual orientations. For example, several youth reported that they were sexually victimized because they had gone to a club, party, or bar that they would not have gone to if they were not gay. Other youth reported that the abuser could tell that they were gay because they were gender atypical and thought that the youth would, therefore, not resist the victimization. In conclusion, when compared to verbal and physical incidents, wherein sexual orientation slurs were generally used, sexual victimization incidents were generally more peripherally connected to sexual orientation. Due to this complication, sexual victimization will not be explored in this study.

In the first interview, youth provided information about the number of verbal and physical victimization incidents they had ever experienced. Because the number of lifetime incidents had a considerable range, responses were collapsed into the categories shown in Table 3. Due to a positive skew, square root transformations were applied to these categories to increase normality.

#### *Proximal Minority Stress*

*Fears of sexual orientation disclosure.* Youths' fears of negative consequences of disclosure of their sexual orientation were measured with an index of eight items. They were asked how much they hid their sexual orientation from others because they feared losing a job, losing friends, not doing well in school, being called names, teased, or verbally harassed in school, being physically hurt in school, being called names, teased, or verbally harassed at home, being rejected by parents, and being rejected by siblings. They estimated their fears using a four-point scale with 0 (*not at all afraid*), 1 (*somewhat afraid*), 2 (*very much afraid*), and 3 (*extremely afraid*). The ratings were averaged and a square root transformation was applied due to a positive skew ( $\alpha = .83$ ).

*Internalized homophobia.* Internalized homophobia was measured by five items from the Personal Homonegativity subscale of Shidlo's (1994) internalized homophobia measure, answered from 3 (*strongly agree*) through 0 (*strongly disagree*). Ratings were averaged and a square root transformation was applied due to a positive skew ( $\alpha = .79$ ; sample item: "I wish I were heterosexual").

#### *Personal Resources*

*Self-esteem.* Self-esteem, or a high regard for oneself, was measured by Rosenberg's (1987) Self-Esteem Inventory (RSE), ten items answered on a four-point Likert scale ranging

from 1 (*strongly disagree*) through 4 (*strongly agree*) ( $\alpha = .85$ ; sample item: “I take a positive attitude toward myself”). Mean values were used, with higher scores indicating higher self-esteem.

*Mastery.* Mastery is a sense of control over one’s environment. Youth completed the seven-item Personal Mastery Scale (PMS; Pearlin, Lieberman, Menaghan, & Mullan, 1981), answered in the same manner as the RSE ( $\alpha = .75$ ; sample item: “I can do anything I really set my mind to”). Mean mastery scores were used, with higher scores indicating higher personal mastery.

### *Social Support*

*General social support.* Youth completed the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988), a 12-item scale assessing perceptions of general social support from family and friends using Likert-type response options. Responses were averaged, with higher scores indicating more perceived support ( $\alpha = .90$ ; sample item: “My family really tries to help me”).

*LGB-specific social support.* Youth reported the number of close friends they had who supported their sexual orientations by gender and sexual identity. They then reported how much support they received from each category of friend from 0 (*no support*) to 3 (*a lot of support*). The number of friends for each category was multiplied by the amount of support received and then added to create a sum of friends' support regarding sexual orientation. Due to positive skew, a natural log transformation was applied to this variable.

### *Characteristics of Minority Identity*

*Gender atypicality.* Gender atypicality was assessed using two items intended to indicate how likely youth would be perceived as LGB. First, youth were asked “On a scale of 1 to 9,

where 1 is extremely feminine and 9 is extremely masculine, how would you describe yourself at this point in your life?” Responses were recoded so that higher scores indicated more gender atypicality (i.e., males who answered “1” would be recoded as “9”). Youth were also asked how often they thought strangers would identify them as LGB, ranging from 0 (*never*) to 3 (*always*).

*Sexual identity.* Youth reported their sexual identities on a Kinsey-type sexual orientation scale from 0 (*completely heterosexual*) to 6 (*completely gay or lesbian*). Youth were asked to consider their feelings and experiences over their entire lives when describing their sexual orientation. Youth reporting that they were either “completely heterosexual” or “almost completely” heterosexual were not included in the study due to the focus on LGB-specific processes. A significant difference by gender was found,  $\chi^2(4) = 18.03, p = .001$ , with female youth (59%) reporting more bisexual identities than male youth (47%). Frequencies are shown by gender in Table 4.

#### *Mental Health and Behavioral Problems*

Adjustment was measured using two measures of stress and two measures of problem behaviors. Youth completed the Trauma Symptom Checklist (TSC40; Briere, 1996; Briere & Runtz, 1989), a measure containing 40 stress symptoms. The respondent rated each symptom’s occurrence in the past two months on a four-point scale, with 0 (*never*) through 3 (*often*) ( $\alpha = .94$ ; sample items: “feeling tense all the time,” “having trouble breathing,” “having nightmares”). Mean TSC scores were used. The 14-item Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) was also administered. The PSS assesses personal stress during the last month ( $\alpha = .79$ ; sample item: “How often have you felt nervous or ‘stressed?’”) Items were answered on a five-point Likert-type scale from 0 (*never*) through 4 (*very often*). Mean PSS scores were used.

Problem behaviors were assessed using the Youth Self-Report (YSR) Inventory (Achenbach, 1991; Achenbach & Rescorla, 2001), an empirically based problem-behavior list of 112 items. The respondent indicated to what degree each problem (e.g., “I don’t get along with other kids,” “I am nervous or tense”) had been characteristic of him or her in the past six months, using a three-point scale of 0 (*not true*), 1 (*somewhat or sometimes true*), or 2 (*very true or often true*). There are eight problem type scores constructed by summing the responses to different problem behaviors which are then aggregated into two summary scores for Internalizing Problems ( $\alpha = .92$ ; sample item: “I feel too guilty”) and Externalizing Problems ( $\alpha = .82$ ; sample item: “I get into many fights”). Internalizing Problems include the scores for Withdrawn, Somatic Complaints, Anxious/Depressed, and Thought Problems; and, Externalizing Problems include the scores for Delinquent Behavior, Aggressive Behavior, Social Problems, and Attention Problems. As suggested by Achenbach and Rescorla (2001), the raw scores of the Internalizing and Externalizing scales were used rather than standardized scores. Due to a positive skew, square-root transformations were applied to the raw scores.

#### Study Questions

1. Is sexual orientation victimization associated with mental health and behavioral problems after controlling for life events?
2. Is proximal minority stress associated with mental health and behavioral problems ?
3. Does proximal minority stress mediate or moderate the association between sexual orientation victimization and mental health and behavioral problems?
4. Do personal resources mediate or moderate the association between proximal minority stress and mental health and behavioral problems?

5. Does social support mediate or moderate the association between proximal minority stress and mental health and behavioral problems?
6. Does LGB-specific social support mediate or moderate the association between proximal minority stress and mental health and behavioral problems?
7. Do minority identity characteristics mediate or moderate the association between proximal minority stress and mental health and behavioral problems?

## Chapter3

### Results

#### *Exploratory Factor Analyses*

Following the data transformations, as indicated above, I conducted exploratory factor analyses to establish that one latent factor was appropriate for the combination of observed variables. Results indicated that a one-factor solution for each proposed latent factor was appropriate, using a cut-off eigenvalue of 1 as indicating a significant factor. Correlations for observed variables can be found in Table 6.

Both mediator and moderator models were tested using structural equation modeling (Arbuckle, 2005; Byrne, 1996). Because of the cross-sectional nature of the data, the direction of the paths were determined using Meyer's (2003b) hypothesized direction of influence. Possible complications regarding directionality will be considered further in the Discussion section.

Paths were considered to be significant at an  $\alpha = .05$  level. Although  $\chi^2$  goodness-of-fit test statistics were calculated,  $\chi^2$  *p*-values were not considered because samples of this size have the power to reject models that differ only slightly from the initial covariance matrix. However, models were compared using changes in  $\chi^2$  values, with significant decreases in  $\chi^2$  values indicating better-fitting models. Additionally, I used three fit indices that are considered better indicators of fit than  $\chi^2$  for large sample sizes: the Bentler and Bonett normed fit index (NFI; 1980), the comparative fit index (CFI; Bentler, 1988), and the non-normed fit index (NNFI; Andersen & Gerbing, 1984). All of these fit indices compare a specified model with a baseline, saturated model, with values closer to 1.00 indicating a better fit for the specified model, with .90 considered to be an adequate fit (Loehlin, 1998). Fit indices for models can be found in Table 7.

*Victimization, Minority Stress, and Mental Health and Behavioral Problems*

To establish whether or not proximal minority stress mediated the relationship between victimization and mental health, I fit a structural equation model with regression paths leading from sexual orientation victimization to mental health and behavioral problems while controlling for life events, as shown in Figure 1. Fit indices for this model, Model 1, indicated a good fit. Results indicated that the path leading from victimization to mental health and behavioral problems was not significant. However, the paths leading from life events to sexual orientation victimization and mental health and behavioral problems were both significant. To establish that sexual orientation victimization and life events were, indeed, separate factors, I conducted an exploratory factor analysis using traumatic and general life events and verbal and physical victimization as variables. Results indicated that a two-factor solution was appropriate with respective variables loading on life events and victimization. Additionally, the correlation between latent factor scores was modest,  $r = .25, p < .001, n = 526$ , further indicating that the factors could be treated separately. In an alternate model, I removed life events as a control and found a significant path leading from victimization to mental health and behavioral problems ( $\beta = .41, sd = .20, p < .05$ ). Fit indices indicated a similar fit for the data as Model 1 (NFI = .95, NNFI = .94, CFI = .96). Due to both the statistical and theoretical associations between life events and sexual orientation victimization, I decided to continue to include life events as a control factor. These results suggest that youth who are experiencing major life events may be more vulnerable to sexual orientation victimization, and that both major life events and sexual orientation victimization influence mental health and behavioral outcomes.

Because sexual orientation victimization was not significantly associated with mental health and behavioral problems after controlling for life events, proximal minority stress could

not be considered to be a possible mediator of this relationship. However, to further understand the associations between these factors, additional analyses were conducted. First, in Model 2, I examined whether or not sexual orientation victimization would increase proximal minority stress when controlling for life events. As shown in Figure 2, sexual orientation victimization was associated with an increase in minority stress, whereas life events were not. This indicates that minority stress is not a product of generally stressful life experiences, including traumatic events, but is domain-specific, being predicted only by LGB-related victimization.

Next, I tested a more complex association in Model 3, wherein sexual orientation victimization predicted minority stress which, in turn, predicted mental health and behavioral problems, while controlling for life events. As shown in Figure 3, a direct association between victimization and mental health and behavioral was not found, but the predicted indirect path through proximal minority stress was found. Again, because mental health and behavioral problems could not be predicted directly through victimization after controlling for life events, proximal minority stress cannot be said to be a true mediator. However, the results of this model suggest that victimization can be indirectly linked to mental health and behavioral problems, due the effect of victimization on proximal minority stress.

In the next series of analyses, I tested whether or not proximal minority stress could be considered to be a moderator of the association between sexual orientation victimization and mental health and behavioral problems. First, youth were divided into groups of those who reported low and high minority stress using the lowest and highest quartiles of minority stress factor scores. Then, I conducted a multi-group path model to determine whether or not sexual orientation victimization predicted mental health and behavioral problems within each group while controlling for life events. Factor loadings, regression estimates, and latent factor variances

were allowed to vary between groups. However, this model, Model 4, provided a poor fit. Examination of the results indicated that externalizing behaviors appeared to be associated with sexual orientation victimization for youth with low minority stress, but not for youth with high minority stress. In other words, youth who have low internalized homophobia and few fears regarding sexual orientation disclosure are more likely than youth with high internalized homophobia and many fears about disclosure to respond to sexual orientation victimization with negative behaviors that are other-directed (i.e., verbal and physical aggression, stealing).

Because the underlying factor structure differed for high and low minority stress youth, a series of models were explored to attempt to identify the most appropriate relationship between the latent factors for youth with low and high minority stress separately. First, for youth with low minority stress, I estimated a model wherein externalizing behaviors were considered separately from the other mental health and behavioral indicators: internalizing behaviors, trauma symptoms, and stress. While controlling for the effects of life events, I examined whether or not sexual orientation victimization influenced externalizing behaviors and the other mental health and behavioral indicators. Results for this model, shown in Figure 4 and as fit indices for Model 5, indicated that sexual orientation victimization did not increase mental health and behavioral problems or externalizing behaviors, specifically, for youth with low minority stress after controlling for life events. Life events, however, predicted both externalizing behaviors and other mental health problems. As with the initial model, stressful life events dominate the association between sexual orientation victimization and mental health problems. Although mental health and behavioral problems could be initially predicted by sexual orientation victimization, this prediction became non-significant once stressful life events were taken into consideration.

For youth with high minority stress, a different model was found and is shown as Figure 5 with fit indices for Model 6. Traumatic events were associated with life events and predicted trauma symptoms. However, all other associations were not significant, including traumatic events and life events predictions of other mental health and behavioral problems. Once again, sexual orientation victimization did not predict mental health and behavioral problems after controlling for life events.

It is possible that youth who are experiencing high levels of minority stress do not react negatively to stressful life events or sexual orientation victimization and only react to traumatic events because they are already experiencing high levels of stress and problem behaviors. Therefore, only the extreme nature of traumatic events would negatively affect their mental health. To examine this hypothesis, I compared the means of all model variables for youth with high and low minority stress using a series of t-tests. Results indicated that youth with high minority stress experienced more verbal sexual orientation victimization than youth with low minority stress,  $t(255) = -4.20, p < .001$ . They also reported more internalizing behaviors,  $t(254) = -8.12, p < .001$ , more externalizing behaviors,  $t(255) = -3.80, p < .001$ , more perceived stress,  $t(255) = -4.80, p < .001$ , and more trauma symptoms,  $t(255) = -6.68, p < .001$ , than low minority stress youth. Remarkably, they did not experience more physical sexual orientation victimization,  $t(255) = .76, ns$ , more traumatic events,  $t(255) = -.20, ns$ , or more general stressful life events,  $t(255) = -.87, ns$ , than youth with low minority stress. In other words, aside from verbal victimization experiences, youth with high minority stress do not differ from their low minority stress peers in their experiences of stressful events of any kind. However, their reactions to stressors differ greatly with high minority stress youth reporting a variety of mental health and behavioral problems.

In sum, an association between sexual orientation victimization and mental health and behavioral problems was only found when life events were not considered. When life events were included, victimization was no longer associated with mental health and behavioral problems. Therefore, proximal minority stress could not be considered to be a mediator of this association. Additional analyses found that victimization increased proximal minority stress, which, in turn, increased mental health and behavioral problems. When proximal minority stress was considered as a moderator, there continued to be no association between sexual orientation victimization and mental health and behavioral problems for both youth with high minority stress and youth with low minority stress. However, life events continued to be associated with mental health and behavioral problems, albeit differently for youth with low and high minority stress. This means that the effects of victimization on the basis of sexual orientation cannot be explained outside of the contexts in which they occur. Youth who are not experiencing other stressful life events may not show negative effects of sexual orientation victimization. Instead, the effects of victimization are overcome by the presence or absence of other stressful experiences in youths' lives.

#### *Minority Stress, Personal Resources, and Mental Health and Behavioral Problems*

In the next set of analyses, I examined whether or not personal resources, defined as self-esteem and a sense of mastery, mediated the association between proximal minority stress and mental health and behavioral problems (Study Question 4). First, I established that minority stress predicted mental health and behavioral problems after controlling for life events. Results, shown as Figure 6 with fit indices for Model 7, indicate that increases in minority stress predict increases in mental health and behavioral problems. The next model, shown as Figure 7 and Model 8, established that increases in minority stress predicted decreases in personal resources.

The final two models of the mediational analysis were directly compared to each other to establish whether or not complete mediation was present. First, I estimated a model predicting personal resources from proximal minority stress and predicting mental health and behavioral problems from personal resources. Results are shown as Figure 8 and Model 9. As expected, increases in minority stress predicted decreases in personal resources which, in turn, predicted increases in mental health and behavioral problems. In the next step, I added a path predicting mental health and behavioral problems using minority stress. Results are shown as Figure 9 and Model 10. If the association between minority stress and mental health were completely mediated by personal resources, the path between minority stress and mental health would be non-significant in this model. However, this was not found.

To assess whether or not partial mediation was present, I fixed the regression path between minority stress and mental health in Model 7 to the value of the path found in Model 10. Using this method, I am comparing whether or not the prediction of mental health problems by minority stress is reduced by the inclusion of personal resources, in other words, if the prediction is partially mediated by personal resources. If personal resources partially mediated the prediction, then fixing this path should have resulted in a significant increase in  $\chi^2$  value from Model 7 and poorer fit indices. This was the case with the  $\chi^2$  value for this model being 226.14,  $\Delta \chi^2 (1) = 127.86, p < .001$ . The fit indices also indicated a poorer fit (NFI = .81, NNFI = .72, CFI = .82). Thus, I conclude that personal resources partially mediate the prediction of mental health symptoms by minority stress. In this model, partial mediation indicates that increases in minority stress lead to decreases in personal resources and, finally, increases in mental health symptoms. However, because this is not full mediation, some of the effects of minority stress

cannot be explained by decreases in self-esteem and mastery, but instead directly negatively affect mental health and behavioral problems.

In the next set of analyses, I wanted to determine if personal resources moderated the association between minority stress and mental health and behavioral problems. First, I divided youth into those in the highest quartile and the lowest quartile of factor scores for personal resources. Youth within the middle quartiles were not included in these analyses. Then, I set the patterns of factor loadings, latent factor scores, and paths between latent factors to be similar for both groups. This yielded a well-fitting model, as shown in the fit indices for Model 11.

Then, I constrained the values of factor loadings to be equal across groups. This model provided an inadequate fit, as shown in the fit indices for Model 12, indicating that the associations between latent factors and observed variables were not the same for both groups. Examination of the results indicated that fears of disclosure and externalizing behaviors loaded differently onto minority stress and mental health problems, respectively, for youth with high and low personal resources. Specifically, youth with low personal resources had a stronger association between fears of disclosure and minority stress than youth with high personal resources; unstandardized factor loadings, with standard errors in parentheses, were .61 (.24) for youth with low personal resources and 2.06 (1.19) for youth with high personal resources. Conversely, youth with low personal resources had a weaker factor loading of externalizing behaviors onto mental health and behavioral problems than youth with high personal resources; unstandardized factor loadings, with standard errors in parentheses, were .62 (.09) and 1.02 (.12), respectively. These factor loadings were allowed to vary between groups in this model, shown as Model 13 for fit indices, and subsequent models.

Next, the path predicting mental health and behavioral problems using minority stress was constrained to be equal across groups. In comparison to the previous model, this model continued to provide an adequate fit for the data, as shown in fit indices for Model 14, and did not result in a significant increase in  $\chi^2$ ,  $\Delta \chi^2 (1) = .03, ns$ . This indicates that personal resources do not moderate the prediction of mental health and behavioral problems by minority stress, although it should be noted that the relationships between latent factors and observed variables differed for youth with high and low personal resources. Though the latent predictions remain the same, youth with high personal resources were more likely to have externalizing behaviors concurrently with trauma symptoms, perceived stress, and internalizing behaviors and less likely to have fears of sexual orientation disclosure in conjunction with internalized homophobia than youth with low personal resources. Additionally, the prediction of both minority stress and mental health problems by life events were constrained to be equal across groups without a significant impact on  $\chi^2$  values or fit indices. The final model is shown as Figure 10 and Model 15.

From these analyses, I conclude that personal resources partially mediate the effect of minority stress on mental health and behavioral problems. Increases in minority stress lead to decreases in self-esteem and mastery which, in turn, leads to increases in stress, trauma symptoms, and internalizing and externalizing behaviors. However, the results of moderator analyses suggest that externalizing behaviors have a weaker association with other mental health symptoms for youth with low personal resources.

#### *Minority Stress, Social Support, and Mental Health and Behavioral Problems*

In the next set of analyses, I attempted to establish whether or not social support would serve as a mediator or moderator of the association between proximal minority stress and mental

health (Study Question 5). As previously found in the results for Model 7, increases in minority stress were shown to predict increases in mental health and behavioral problems. Next, I evaluated whether or not social support could be predicted by minority stress. The results, shown as Figure 11 and Model 16, indicated that increases in minority stress predict decreases in general social support, after controlling for life events. This model provided an adequate fit for the data. Here it is important to note that with cross-sectional data such as this, it is not possible to establish direction of influence. In the absence of longitudinal data, it would be equally accurate to state that social support predicts minority stress as to state that minority stress predicts social support. This will be discussed further in the Discussion chapter.

In the next models, I used minority stress to predict social support which then predicted mental health and behavioral problems. In the first model, there was no path predicting mental health and behavioral problems directly from minority stress; in the second model, this path was included. Results indicate that full mediation was not present. The first model, shown as Figure 12 and Model 17, provided an inadequate fit for the data, indicating that the effect of minority stress on mental health could not be explained through decreases in social support. Indeed, the second model, shown as Figure 13 and Model 18, provided an excellent fit for the data and had a significant path from minority stress to mental health and behavioral problems, indicating that social support did not mediate the association between minority stress and mental health. Additionally, there was a significant drop in  $\chi^2$  values when the direct path was included,  $\Delta \chi^2 (1) = 51.73, p < .001$ , providing further evidence that mediation is not present.

Following the mediational analyses, I evaluated whether or not social support moderated the association between minority stress and mental health. First, I divided youth into quartiles using their factor scores for social support and then compared the association between minority

stress and mental health and behavioral problems for the lowest and highest quartiles. The first step in this analysis was to ensure that patterns of loading onto the latent factors were comparable across groups. This model, shown in the fit indices for Model 19, provided an adequate fit for the data. In the next step, factor loadings were set to be equivalent across groups. This model provided an inadequate fit for the data, as shown in the fit indices for Model 20.

After examining the results for Model 20, it was apparent that the externalizing behaviors were the major difference between the two groups in terms of factor loadings. An additional model was analyzed wherein all factor loadings were considered to be equivalent with the exception of externalizing behaviors. Results indicated that the youth with high social support had a stronger association between the latent mental health factor and externalizing behaviors than did the youth with low social support; unstandardized factor loadings, with standard errors in parentheses, were 1.08 (.08) for youth with high support and .51 (.06) for youth with low support. This means that youth with high social support were more likely than youth with low social support to have externalizing behaviors in conjunction with trauma symptoms, perceived stress, and internalizing behaviors. Moderational analysis was continued with the factor loadings for externalizing behaviors being allowed to vary between groups.

In the next step, comparisons were made between a model wherein the regression paths from minority stress to mental health and behavioral problems were equal between groups and then allowed to vary. The first model, with the paths constrained to be equal, provided an adequate fit for the data, as shown in the fit indices for Model 21. However, when the paths were not constrained in the second model, there was a significant drop in  $\chi^2$  values,  $\Delta \chi^2 (1) = 4.38, p < .05$ , and other fit indices also indicated the superiority of this model, as shown in the fit indices for Model 22. Therefore, I conclude that the prediction of mental health problems using minority

stress is not equivalent for youth with high social support and those with low social support. Examination of the regression coefficients shows that mental health problems are more strongly predicted by minority stress for youth with low social support when compared to youth with high social support, which suggests that social support may buffer some of the negative effects of minority stress.

To further analyze how comparable the processes were between the two groups, I examined the results of Model 22. In these results, regression paths predicting both mental health problems and minority stress using life events appeared to be equivalent between groups. These paths were constrained in a sequential fashion, without a significant change in  $\chi^2$  values. The results for this final model are shown in Figure 14 and Model 23, separated by high and low social support groups. Levels of social support moderate the prediction of mental health and behavioral problems by minority stress, but not by general life events, as the paths from life events were equivalent between groups.

In sum, social support does not appear to mediate the prediction of mental health and behavioral problems by minority stress. It does, however, moderate this prediction. Minority stress more strongly predicted mental health and behavioral problems for youth with low social support than for youth with high social support. It should also be noted that, similar to findings for personal resources, youth with low social support had a weaker association between externalizing behaviors and other mental health symptoms than youth with high social support.

#### *Minority Stress, LGB-Specific Social Support, and Mental Health and Behavioral Problems*

Following the analysis of general social support, I analyzed whether or not support that was specifically related to youths' sexual orientation affected the prediction of mental health and behavioral problems using minority stress (Study Question 6). In the first step of the mediational

analysis, I proposed a model wherein proximal minority stress predicted sexual orientation support, after controlling for life events. The results indicated that the model provided a poor fit for the data, as shown in Figure 15 and Model 24. As is evident, proximal minority stress did not predict LGB-specific support. Additionally, further analyses indicated that LGB-specific social support did not predict mental health and behavioral problems. Therefore, mediation by LGB-specific social support was not possible.

I next examined whether or not LGB-specific social support moderated the prediction of mental health and behavioral problems by proximal minority stress. First, I divided youth into quartiles according to their factor scores on LGB-specific social support. Then I compared a model predicting mental health problems using minority stress while controlling for life events for youth with the lowest scores and youth with the highest scores. In the first steps of the analysis, the loadings of observed variables onto latent factors were constrained to having the same patterns, which provided an adequate fit for the data as shown in the fit indices for Model 25. Then the groups were constrained to have the same factor loadings, which resulted in an inadequate fit, as shown in the fit indices for Model 26. Examination of the results indicated that the factor loading for externalizing behaviors onto mental health and behavioral problems appeared to differ between the groups. In all subsequent models, I allowed this factor loading to vary between groups. This resulted in an adequate fit for the data, as shown in the fit indices for Model 27. Unstandardized factor loadings, with standard errors in parentheses, were .90 (.06) for youth with high LGB-specific support and .59 (.05) for youth with low support, which indicates that externalizing behaviors were more strongly predicted by the latent factor of mental health and behavioral problems for youth with high LGB-specific support than those with low LGB-specific support.

In the next step, the path between minority stress and mental health problems was constrained to be equal across groups. This resulted in an adequately-fitting model that did not significantly increase the  $\chi^2$  value,  $\Delta \chi^2 (1) = 3.06, ns$ , or have poorer fit indices, as shown in the fit indices for Model 28. In further analyses, it was found that the prediction of minority stress by life events did not significantly differ between groups,  $\Delta \chi^2 (1) = .18, ns$ . The prediction of mental health problems by life events, however, significantly differed between the groups,  $\Delta \chi^2 (1) = 8.59, p < .01$ . Youth who reported high LGB-specific social support had a stronger prediction of mental health problems by life events than youth with low support. The final model is shown as Figure 16 and Model 29 in which there is no moderation of the association between minority stress and mental health and behavioral problems by LGB-specific support. However, it should be noted that the composition of mental health and behavioral problems differed between these groups due to different factor loadings for externalizing behaviors.

In conclusion, there was no evidence of mediation or moderation by LGB-specific social support between proximal minority stress and mental health and behavioral problems. Still, as with both personal resources and general social support, youth with low LGB-specific support had a weaker association between externalizing behaviors and other mental health indicators than youth with high LGB-specific support. This further indicates that externalizing behaviors should be considered separately from internalizing behaviors, stress, and trauma symptoms. There was also some indication that the occurrence of life events negatively affected youth with high LGB-specific support more than youth with low LGB-specific support.

#### *Minority Stress, Minority Identity Characteristics, and Mental Health and Behavioral Problems*

After the analyses of social support, I examined the impact of minority identity characteristics on the association between proximal minority stress and mental health and

behavioral problems (Study Question 7). In the first set of analyses, I examined whether or not minority identity characteristics, in terms of gender atypicality, mediated the prediction of mental health problems by minority stress. Results indicated that minority stress did not significantly predict minority identity characteristics, and minority identity characteristics did not significantly predict mental health and behavioral problems. Fit indices for the overall model indicated an adequate fit for the data, as shown in Figure 17 and Model 30; however, as none of the paths leading to and from minority identity characteristics were significant, I concluded that this factor did not mediate the relationship between minority stress and mental health problems.

Following the mediational analyses, I conducted moderational analyses of the prediction of mental health and behavioral problems by minority stress. First, I divided the youth into quartiles according to factor scores on the gender atypicality factor. Then I compared models predicting mental health problems using minority stress for the highest and lowest quartiles. In the first step, I constrained the loadings of observed variables onto latent factors to have the same patterns for both groups. This resulted in an adequately-fitting model as shown in the fit indices for Model 31. Then, I constrained the factor loadings to be equal for both groups, which continued to provide an adequate fit as shown in the fit indices for Model 32. Finally, I constrained the path from minority stress to mental health problems to be equal for both groups. This provided an adequate fit for the data and did not result in an increase in  $\chi^2$  values,  $\Delta \chi^2 (1) = 1.34, ns$ . As both groups statistically have the same regression coefficient from minority stress to mental health problems and the same loadings onto latent factors, I conclude that gender atypicality does not moderate the prediction of mental health by minority stress.

Next I evaluated whether or not sexual identity moderated the prediction of mental health problems by minority stress by dividing youth into bisexual and gay/lesbian groups. I compared

models wherein minority stress predicted mental health and behavioral by first constraining the factor loadings to have the same pattern for bisexual and gay/lesbian groups, resulting in the adequate fit shown for Model 33. Next, I sequentially constrained the factor loadings, latent factor variances, and path coefficients to be equal between groups. As shown in the fit for Models 34 through 36, this continued to provide an adequate fit for the data. This indicates that sexual identity also has no moderating effect on the association between minority stress and mental health.

In sum, minority identity characteristics, in terms either gender atypicality or sexual identity, do not affect the prediction of mental health and behavioral problems by minority stress in this sample. The mediator and moderators analyses all resulted in the conclusion that minority identity characteristics, as measured in this study, had no effect on mental health and behavioral problems.

## Chapter 4

### **Discussion**

Meyer's (2003b) model of the ways in which minority stress affects mental health for lesbian, gay, and bisexual individuals has provided an over-arching theory by which the effects of sexual orientation victimization and internalized minority stress can be examined. In this project, I examined the processes proposed in Meyer's model and found support for the minority stress hypothesis in LGB youth, with some caveats. First, victimization on the basis of sexual orientation predicted increases in mental health and behavioral problems, as expected. However, once I accounted for other stressful life events in youths' lives, sexual orientation victimization no longer predicted mental health problems. It is noteworthy that these life events and victimization were strongly associated with each other; in other words, youth who are victimized on the basis of sexual orientation are also more likely than youth who are not victimized to be contending with other burdens as well. Additionally, these other burdens cannot be discounted and appear to overshadow the negative effects of sexual orientation victimization. Future studies are needed to examine the environments in which LGB youth experience sexual orientation victimization, with particular attention paid to stressful circumstances that may exacerbate the effects of victimization.

In spite of the lack of direct effect of sexual orientation victimization on mental health and behavioral problems once life events were included, I conclude that victimization continues to affect mental health through proximal minority stress processes, as proposed by Meyer (2003b). Victimization led to increases in fears of sexual orientation disclosure and increases in internalized homophobia which, in turn, led to increases in mental health problems. General life

stressors did not affect minority stress, which indicates that these processes are domain-specific. There is evidence, however, that youth reporting high and low minority stress experience life events differently. Specifically, externalizing behaviors were more strongly related with stressful life events than other mental health symptoms for youth reporting low minority stress. For youth reporting high minority stress, traumatic life events predicted traumatic stress symptoms, but not other mental health symptoms, and general life events did not predict any mental health symptoms, although they were correlated with traumatic events.

These findings were not expected and should be replicated in future research. Still, subsequent models for other moderators did find unique relationships for externalizing behaviors and so this finding appears to be worth examining. In this and subsequent moderator models, youth with better adjustment (low minority stress, high personal resources, and high social support) had a stronger association between externalizing behaviors and other mental health and behavioral indicators than youth with poorer adjustment. In other words, youth with poorer adjustment tended to not exhibit externalizing behaviors in conjunction with more internalized behaviors and feelings. It is possible that this represents an inclination towards internalizing negative social beliefs or negative self-cognitions for vulnerable youth.

The results for youth reporting high minority stress are more difficult to interpret. As no other analysis of this sample found a unique association between traumatic events and trauma symptoms, this result should be interpreted with caution. As follow-up analyses indicated, youth with high minority stress reported levels of physical sexual orientation victimization, general life events, and traumatic events that were similar to youth with low minority stress, although they reported more verbal sexual orientation victimization. They also reported more mental health and behavioral problems than youth with low minority stress. Given that the youth in this sample

were generally positive about their sexual orientations, which is not surprising given the recruitment procedures, youth who are fearful and continue to maintain negative views about their sexual orientations may be a specialized subset of this population: those who are willing to participate in research on LGB people but think negatively of themselves. Although recruitment may be difficult, future research should pay particular attention to those who are involved in the LGB community but continue to have high levels of internal minority stress in order to further understand this population.

The rest of the analyses were designed to assess possible mediators and moderators of the prediction of mental health and behavioral problems using proximal minority stress. First, personal resources, in the form of self-esteem and a sense of mastery, were found to partially mediate the prediction. Increases in minority stress predicted decreases in personal resources which predicted increases in mental health problems, although decreases in self-esteem and mastery did not fully account for the effect of minority stress. Also, youth with fewer personal resources had a stronger factor loading of fears of disclosure onto minority stress and a weaker loading of externalizing behaviors onto mental health and behavioral problems than youth with high personal resources. Once again, although an explicit moderator effect was not found once these loadings differences were allowed, externalizing behaviors are more likely to occur in conjunction with other mental health and behavioral problems for youth with more personal resources. Consistent with the previous hypothesized explanation, youth who have low personal resources show the effects of minority stress through internalized outcomes: perceived stress, trauma symptoms, and internalizing behaviors. Conversely, youth who have high personal resources show the effects of minority stress through a myriad of problems that includes externalizing behaviors.

This finding was replicated in the analysis of social support as a moderator between minority stress and mental health. Youth with higher social support had a stronger loading of externalizing behaviors onto mental health symptoms than youth with low social support. Additionally, there was a stronger prediction of mental health problems due to increases in minority stress for youth with low support when compared to youth with high support. Finally, there is some evidence that social support also partially mediates the prediction of mental health symptoms by minority stress, wherein minority stress decreases social support which increases mental health problems. As with personal resources, social support does not fully explain this prediction, but provides a partial explanation for this effect.

In contrast, when sexual orientation-specific social support was considered, a mediator effect was not found. Similar to previous analyses, externalizing behaviors loaded onto mental health and behavioral problems more strongly for youth with high LGB-specific support than those with low LGB-specific support. LGB-specific social support did not appear to further moderate the association between minority stress and mental health, although it did appear to moderate the prediction of mental health symptoms by life events, with life events being a stronger predictor of mental health symptoms for youth with high social support. This, too, is similar to the results that were found when minority stress was considered as a moderator of the association between victimization and mental health symptoms. In a parallel vein, it is possible that youth who have little support that is specifically related to their sexual orientations are preoccupied with concerns about their sexual orientations and thus react less predictably to general life stressors. Conversely, youth who have a lot of support that is related their sexual orientations may consider other life stressors to be more prominent and thus these events are those that are most strongly related to their mental health. Future research should re-examine

these possible explanations, particularly as they have some implication for intervention efforts, as described below.

In the final analyses, I found no mediator or moderator effect for minority identity characteristics, in terms of gender atypicality or sexual identity. As discussed in the introduction, Meyer (2003b) conceived of these characteristics as more internal than they were measured in this study, specifically how salient sexual orientation was to the individual and how important sexual identity was to the participant. I defined minority identity characteristics to be those that would be salient to others: gender atypicality and identifiability as LGB by a stranger. I also evaluated sexual identity because several studies have shown differences in victimization and adjustment between bisexual and gay or lesbian youth (Austin et al., 2004; Busseri et al., 2006; Poteat et al., 2009; Robin et al., 2002; Russell, 2006; Russell et al., 2002). Although this seemed logical given that gender atypical youth are more likely to be victimized, it is possible that how others view the youths' sexual orientations is less important than how the youths' view their sexual orientations, particularly because we are mostly concerned with internalized processes (Meyer, 2003b). Future research should consider exploring this further, perhaps with a measure of the salience and importance of participants' sexual orientations. In sum, I would hypothesize that the lack of findings regarding minority identity characteristics were directly related to the way in which this construct was assessed.

#### *Study Limitations*

In addition to measures of minority identity characteristics that assess salience and importance of sexual orientation to participants, there are several other limitations to this study. As with all cross-sectional designs, the direction of influence is determined theoretically, rather than temporally. It is possible that the direction of influence for some of these findings may be

reversed. For example, it is possible that minority stress does not lead to mental health and behavioral problems, but that these problems lead to minority stress instead. Under this hypothesis, youth with internalizing or externalizing problems would be more likely to report fears of sexual orientation disclosure and internalized homophobia because they already have other difficulties. It is also possible that these processes mutually influence each other in an iterative fashion. However, if the sole direction of influence was that mental health and behavioral problems increased minority stress, this would do little to explain the higher prevalence of mental health and behavioral problems among LGB people. We would need to assume that LGB youth are predisposed to mental health and behavioral problems at higher levels than heterosexual youth and that sexual orientation victimization does not lead to minority stress (Meyer, 2003b). This hypothesis lacks both logic and simplicity, but intensive longitudinal studies are needed to conclusively assess the direction of influence or co-influence.

Additionally, intensive longitudinal designs would allow for a more immediate assessment of the results of victimization. As youth in this study were reporting victimization related to sexual orientation over their lifetimes, some of this victimization may have occurred years before the youth participated in this study, thereby diminishing the ability to model the overall minority stress process. As previously mentioned, it would also be important to account for the context in which this victimization occurs, including other stressors with which youth may be contending.

Finally, as minority stress is an internal emotional and cognitive process, it is only viable to assess this process through self-report. However, it is possible to conceive of ways to gather information from additional sources, including interviews with family and friends about the support they provide for participants and physiological measures of stress reactions.

Physiological measures, in particular, may provide ways to identify youth who are particularly at-risk for negative effects of victimization. For future studies, such indicators should be considered where viable.

#### *Future Directions*

As stated above, some of the study limitations can be addressed through the collection of intensive longitudinal data and, if possible, the use of multiple sources of information. This would allow researchers to assess the direction of influence for minority stress processes and the ways in which minority stress and mental health and behavioral problems might mutually influence each other.

The strength of the current study, however, lies in its ability to help interventionists identify youth who may be at-risk for mental health and behavioral problems due to victimization, life stressors, and minority stress. In the absence of the influence of other stressors, victimization on the basis of sexual orientation leads to negative feelings about being LGB and fears about being discovered to be LGB. These feelings, in turn, lead to increases in trauma symptoms, perceived stress, and internalizing and externalizing behaviors. This provides interventionists with several points of entry for affecting positive changes in mental health. First, a top priority should be the prevention of sexual orientation victimization through the education of potential perpetrators; for this sample, the characteristics of perpetrators were discussed in D'Augelli et al. (2006). In the absence of prevention, there should also be a focus on reducing internalized homophobia in LGB youth. Programs are needed that help youth identify and overcome negative societal views of same-sex orientations. Youth also need ways in which to overcome their fears of being discovered to be LGB. Although this might naturally lead to a recommendation of sexual orientation disclosure for most LGB youth (meaning that youth would

neutralize their fears by disclosing their sexual orientation themselves), particular attention should be given to maintaining youths' safety. Given that youth who are fearful are more likely to have already experienced sexual orientation victimization, there is evidence that their fears are justified. These youth need safe spaces in which they can reconsider their internalized prejudices regarding sexual orientation and evaluate the relative danger of disclosure to people within their support networks.

For youth with positive life circumstances (e.g., high social support, high personal resources), externalizing behaviors coincided with internalizing behaviors, trauma symptoms, and perceived stress, loading highly onto one latent factor. For youth with negative life circumstances (e.g., low social support, low personal resources), externalizing behaviors were not as strongly associated with other mental health and behavioral problems. For these youth, this suggests that some of the youth react with a multitude of negative responses to minority stress, whereas others react with mostly internalized responses. Additionally, I found that youth with high social support are less likely than youth with low social support to have mental health and behavioral problems due to minority stress. As mediation was not found, this does not mean that increasing social support will mitigate the effects of minority stress. Instead, this suggests that youth with high social support respond differently to minority stress than youth with low social support; specifically, increases in minority stress are less likely to lead to mental health and behavioral problems for youth with high social support. It is notable, however, that youth with high and low social support responded similarly to stressful life events, especially when considering that this refers to a general measure of social support, not support that is specifically related to sexual orientation.

In general, further attention needs to be given to the context in which youth experience minority stress with particular concern given to youth who are experiencing other life stressors, have low self-esteem, a low sense of mastery, and little social support. In this way, resources can be provided to youth who are at the greatest risk of developing mental health and behavioral problems. In this manner, Meyer's (2003b) model of minority stress has been particularly useful in delineating how context may influence the experience of minority stress. Through this study I found evidence for the importance of several of these factors, including general life events, personal resources, and social support. Future work on the topic of minority stress should include some measure of these constructs in order to fully understand the ways in which minority stress affects mental health and behavior.

## References

- Achenbach, T. M. , & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont Center for Children, Youth, and Families.
- Achenbach, T. M. (1991). *Manual for the ASEBA school-age forms and profiles*. Burlington, VT: University of Vermont Center for Children, Youth, and Families.
- Anderson, A. L. (1998). Strengths of gay male youth: An untold story. *Child and Adolescent Social Work Journal, 15*(1), 55-71.
- Arbuckle, J. L. (2005). *AMOS, version 6*. Spring House, PA: Amos Development Corp.
- Austin, S. B., Ziyadeh, N., Kahn, J. A., Colditz, G. A., Field, A. E., & Camargo, C. A. (2004). Sexual orientation, weight concerns, and eating-disordered behaviors in adolescent girls and boys. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*, 1115-1123.
- Balsam, K. F., & Mohr, J. J. (2007). Adaptation to sexual orientation stigma: A comparison of bisexual and lesbian/gay adults. *Journal of Counseling Psychology, 54*, 306-319.
- Balsam, K. F., & Szymanski, D. M. (2005). Relationship quality and domestic violence in women's same-sex relationships: The role of minority stress. *Psychology of Women Quarterly, 29*, 258-269.
- Bontempo, D. E., & D'Augelli, A. R. (2002). Effects of at-school victimization and sexual orientation on lesbian, gay, or bisexual youths' health risk behavior. *Journal of Adolescent Health, 30*, 364-374.

- Bos, H. M. W., van Balen, F., van den Boom D. C., & Sandfort, T. G. M. (2004). Minority stress, experience of parenthood and child adjustment in lesbian families. *Journal of Reproductive and Infant Psychology*, 22, 291-304.
- Bosacki, S., Dane, A., & Marini, Z. (2007). Peer relationships and internalizing problems in adolescents: Mediating role of self-esteem. *Emotional & Behavioural Difficulties*, 12, 261-282.
- Bradford, M. (2006). Affirmative psychotherapy with bisexual women. *Journal of Bisexuality*, 6, 13-25.
- Briere, J. (1996). Psychometric review of the Trauma Symptom Checklist-40. In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 373-377). Lutherville, MD: Sidran Press.
- Briere, J., & Runtz, M. (1989). The Trauma Symptom Checklist (TSC-33): Early data on a new scale. *Journal of Interpersonal Violence*, 4, 151-163.
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology*, 6<sup>th</sup> ed. (pp. 793-828). New York: Wiley.
- Busseri, M. A., Willoughby, T., Chalmers, H., & Bogaert, A. R. (2006). Same-sex attraction and successful adolescent development. *Journal of Youth and Adolescence* 35(4), 563-575.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Erlbaum.
- Carver, P. R., Egan, S. K., & Perry, D. G. (2004). Children who question their heterosexuality. *Developmental Psychology*, 40, 43-53.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress.

- Journal of Health and Social Behavior*, 24, 385-396.
- D'Augelli, A. R. (1994a). Identity development and sexual orientation: Toward a model of lesbian, gay, and bisexual development. In E. J. Trickett, R. J. Watts, & D. Birman (Eds.) *Human diversity: Perspectives on people in context* (pp. 312-333). San Francisco: Jossey-Bass.
- D'Augelli, A. R. (1994b). Lesbian and gay male development: Steps toward an analysis of lesbians' and gay men's lives. In B. Greene & G. M. Herek (Eds.) *Lesbian and gay psychology: Theory, research, and clinical applications* (pp. 118-132). Thousand Oaks, CA: Sage.
- D'Augelli, A. R. (2002). Mental health problems among lesbian, gay, and bisexual youths ages 14 to 21. *Clinical Child Psychology and Psychiatry*, 7, 439-462.
- D'Augelli, A. R. (2003). Lesbian and bisexual female youths aged 14 to 21: Developmental challenges and victimization experiences. *Journal of Lesbian Studies*, 7(4), 9-29.
- D'Augelli, A. R. (2005). Developmental and contextual factors and mental health among lesbian, gay, and bisexual youths. In A. E. Omoto & H. M. Kurtzman (Eds.), *Sexual orientation and mental health: Examining identity and development in lesbian, gay, and bisexual people* (pp. 37-53). Washington, DC: APA Books.
- D'Augelli, A. R., & Grossman, A. H. (2006). Researching lesbian, gay, and bisexual youth: Conceptual, practical, and ethical issues. *Journal of Gay & Lesbian Issues in Education*, 3 (2/3), 35-56.
- D'Augelli, A. R., Hershberger, S. L., & Pilkington, N. W. (1998). Lesbian, gay, and bisexual youth and their families: Disclosure of sexual orientation and its consequences. *American Journal of Orthopsychiatry*, 68, 361-371.

- D'Augelli, A. R., Grossman, A. H., & Starks, M. T. (2005). Parents' awareness of lesbian, gay, and bisexual youths' sexual orientation. *Journal of Marriage and Family, 67*, 474-482.
- D'Augelli, A. R., Grossman, A. H., & Starks, M. T. (2006). Childhood gender atypicality, victimization, and PTSD among lesbian, gay, and bisexual youth. *Journal of Interpersonal Violence, 21*, 1-21.
- D'Augelli, A. R., Pilkington, N. W., & Hershberger, S. L. (2002). Incidence and mental health impact of sexual orientation victimization of lesbian, gay, and bisexual youths in high school. *School Psychology Quarterly, 17*, 148-167.
- DuRant, R. H., Kahn, J., Beckford, P. H., & Woods, E. R. (1997). The association of weapon carrying and fighting on school property and other health risk and problem behaviors among high school students. *Archives of Pediatric and Adolescent Medicine, 151*, 360-366.
- DuRant, R. H., Krowchuk, D. P., & Sinal, S. H. (1998). Victimization, use of violence, and drug use at school among male adolescents who engage in same-sex sexual behavior. *Journal of Pediatrics, 133*, 113-118.
- Edwards, J. R., & Lambert, L. S. (2007). Methods for integrating moderation and mediation: A general analytical framework using moderated path analysis. *Psychological Methods, 12*, 1-22.
- Eliason, M. J. (1997). The prevalence and nature of biphobia in heterosexual undergraduate students. *Archives of Sexual Behavior, 26*, 317-326.
- Entwisle, D. R., & Astone, N. M. (1994). Some practical guidelines for measuring youth's race/ethnicity and socioeconomic status. *Child Development, 65*, 1521-1540.

- Espelage, D. L., Aragon, S. R., Birkett, M., & Koenig, B. W. (2008). Homophobic teasing, psychological outcomes, and sexual orientation among high school students: What influence do parents and schools have? *School Psychology Review, 37*, 202–216.
- Faltz, B. G. (1992). Counseling chemically dependent lesbians and gay men. In S. H. Dworkin & F. I. Gutierrez (Eds.), *Counseling gay men and lesbians: Journey to the end of the rainbow* (pp. 245-258). Alexandria, VA: American Association for Counseling and Development.
- Faulkner, A. H., & Cranston, K. (1998). Correlates of same-sex sexual behavior in a random sample of Massachusetts high school students. *American Journal of Public Health, 88*, 262-266.
- Fitzpatrick, K. K., Euton, S. J., Jones, J. N., & Schmidt, N. B. (2005). Gender role, sexual orientation and suicide risk. *Journal of Affective Disorders, 87*, 35-42.
- Frost, D. M., & Meyer, I. H. (2009). Internalized homophobia and relationship quality among lesbians, gay men, and bisexuals. *Journal of Counseling Psychology, 56*, 97-109.
- Garofalo, R., Wolf, R., Kessel, S., Palfrey, J., and DuRant, R. (1998). The association between health risk behaviours and sexual orientation among a school-based sample of adolescents. *Pediatrics 101*, 895–902.
- Garofalo, R., Wolf, C., Wissow, L. S., Woods, E. R., & Goodman, E. (1999). Sexual orientation and risk of suicide attempts among a representative sample of youth. *Archives of Pediatric and Adolescent Medicine, 153*, 487-493.
- Hatzenbuehler, M. L., Nolen-Hoeksema, S., Erickson, S. J. (2008). Minority stress predictors of HIV risk behavior, substance use, and depressive symptoms: Results from a prospective study of bereaved gay men. *Health Psychology, 27*, 455-462.

- Herek, G. M., Gillis, J. R., & Cogan, J. C. (2009). Internalized stigma among sexual minority adults: Insights from a social psychological perspective. *Journal of Counseling Psychology, 56*, 32-43.
- Hershberger, S. L., & D'Augelli, A. R. (1995). The impact of victimization on the mental health and suicidality of lesbian, gay, and bisexual youths. *Developmental Psychology, 31*, 65-74.
- Hollander, G. (2000). Questioning youths: Challenges to working with youths forming identities. *School Psychology Review, 29*, 173-179.
- Hu, I., & Bentler, P. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling* (pp. 45-73). Thousand Oaks, CA: Sage.
- Hu, L. & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6(1)*, 1-55.
- Igartua, K. J., Gill, K., & Montoro, R. (2003). Internalized homophobia: A factor in depression, anxiety, and suicide in the gay and lesbian population. *Canadian Journal of Community Mental Health, 22(2)*, 15-30.
- Johnson, S. L., & McMurrich, S. (2006). Life events and juvenile bipolar disorder: Conceptual issues and early findings. *Development and Psychopathology, 18*, 1169-1179.
- Jordan, K. M., Vaughn, J. S., & Woodworth, K. J. (1997). I will survive: Lesbian, gay, and bisexual youths' experience of high school. *Journal of Gay and Lesbian Social Services, 7(4)*, 17-33.

- Kilpatrick, D. G., Saunders, B. E., Veronen, L. J., Best, C. L., & Von, J. M. (1987). Criminal victimization: Lifetime prevalence, reporting to police, and psychological impact. *Crime and Delinquency*, *33*, 479-489.
- Lewis, R. J., Derlega, V. J., Clarke, E. G., & Kuang, J. C. (2006). Stigma consciousness, social constraints, and lesbian well-being. *Journal of Counseling Psychology*, *53*, 48-56.
- Lippa, R. A. (2008). The relation between childhood gender nonconformity and adult masculinity-femininity and anxiety in heterosexual and homosexual men and women. *Sex Roles*, *59*, 684-693.
- Loehlin, J. C. (1998). *Latent variable models: An introduction to factor, path, and structural analysis* (3rd ed.). Mahwah, NJ: Erlbaum.
- Lopez, C., & DuBois, D. L. (2005). Peer victimization and rejection: Investigation of an integrative model of effects on emotional, behavioral, and academic adjustment in early adolescence. *Journal of Clinical Child and Adolescent Psychology*, *34*, 25-36.
- McDavitt, B., Iverson, E., Kubicek, K., Weiss, G., Wong, C. F., & Kipke, M. D. (2008). Strategies used by gay and bisexual young men to cope with heterosexism. *Journal of Gay & Lesbian Social Services*, *20*(4), 354-381.
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, *36*, 38-56.
- Meyer, I. H. (2003a). Minority stress and mental health in gay men. In L. D. Garnets & D. C. Kimmel (Eds.), *Psychological perspectives on lesbian, gay, and bisexual experiences*, 2nd ed., (pp. 699-731). New York: Columbia University Press.
- Meyer, I. H. (2003b). Prejudice as stress: Conceptual and measurement problems. *American Journal of Public Health*, *93*, 262-265.

- Morris, J. F., Waldo, C. R., & Rothblum, E. D. (2001). A model of predictors and outcomes of outness among lesbian and bisexual women. *Journal of Orthopsychiatry, 71*, 61-71.
- Mulick, P. S., & Wright, L. W. (2002). Examining the existence of biphobia in the heterosexual and homosexual populations. *Journal of Bisexuality, 2*(4), 45-64.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*, 852-863.
- Norris, F. H. (1992). Epidemiology of trauma: Frequency and impact of different potentially traumatic events on different demographic groups. *Journal of Consulting and Clinical Psychology, 60*, 409-418.
- Otis, M. D., Rostosky, S. S., Riggle, E. D. B., & Hamrin, R. (2006). Impact of mental health on perceptions of relationship satisfaction and quality among female same-sex couples. *Journal of Lesbian Studies, 10*, 267-283.
- Pachankis, J. E. (2007). The psychological implications of concealing a stigma: A cognitive-affective-behavioral model. *Psychological Bulletin, 133*, 328-345.
- Pearlin, L. I., Lieberman, M. A., Menaghan, E. G., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior, 22*, 337-356.
- Pilkington, N. W., & D'Augelli, A. R. (1995). Victimization of lesbian, gay, and bisexual youth in community settings. *Journal of Community Psychology, 23*, 33-56.
- Poteat, V. P., Aragon, S. R., Espelage, D. L., & Koenig, B. W. (2009). Psychosocial concerns of sexual minority youth: Complexity and caution in group differences. *Journal of Consulting and Clinical Psychology, 77*, 196-201.
- Resnick, H. S., Kilpatrick, D. G., Best, C. L., & Kramer, T. L. (1992). Vulnerability-stress factors in development of posttraumatic stress disorder. *Journal of Nervous and Mental*

- Disease, 180*, 424-430.
- Rivers, I. (2001). The bullying of sexual minorities at school : Its nature and long-term correlates. *Educational & Child Psychology, 18*(1), 33-46.
- Rivers, I., & D'Augelli, A. R. (2001). The victimization of lesbian, gay, and bisexual youths: Implications for intervention. In A. R. D'Augelli & C. J. Patterson (Eds.), *Lesbian, gay, and bisexual identities and youth: Psychological perspectives* (pp. 199-223). New York: Oxford University Press.
- Robin, L., Brener, N., Donahue, S. F., Hack, T., Hale, K., & Goodenow, C. (2002). Associations between health risk behaviors and opposite-, same-, and both-sex sexual partners in representative samples of Vermont and Massachusetts high school students. *Archives of Pediatrics and Adolescent Medicine, 156*, 349-355.
- Rosario, M., Hunter, J., & Gwadz, M. (1997). Exploration of substance abuse among lesbian, gay, and bisexual youth: Prevalence and correlates. *Journal of Adolescent Research, 12*, 454-476.
- Rosario, M., Hunter, J., Maguen, S., Gwadz, M., & Smith, R. (2001). The coming-out process and its adaptational and health-related associations among gay, lesbian, and bisexual youths: Stipulation and exploration of a model. *American Journal of Community Psychology, 29*, 113-160.
- Rosario, M., Rotheram-Borus, M. J., & Reid, H. (1996). Gay-related stress and its correlates among gay and bisexual male adolescents of predominantly Black and Hispanic background. *Journal of Community Psychology, 24*, 136-159.
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2004). Predictors of substance use over time among gay, lesbian, and bisexual youths: An examination of three hypotheses. *Addictive*

- Behaviors*, 29, 1623-1631.
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2005). Psychological distress following suicidality among gay, lesbian, and bisexual youths: Role of social relationships. *Journal of Youth and Adolescence*, 34, 149-161.
- Rosario, M., Schrimshaw, E. W., & Hunter, J. (2006). A model of sexual risk behaviors among young gay and bisexual men: Longitudinal associations of mental health, substance abuse, sexual abuse, and the coming-out process. *AIDS Education and Prevention*, 18, 444-460.
- Rosario, M., Schrimshaw, E. W., Hunter, J., Gwadz, M. (2002). Gay-related stress and emotional distress among gay, lesbian and bisexual youths: A longitudinal examination. *Journal of Consulting and Clinical Psychology*, 70, 967-975.
- Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
- Rotheram-Borus, M. J., Rosario, M., Van Rossem, R., Reid, H., & Gillis, J. R. (1995). Prevalence, course, and predictors of multiple problem behaviors among gay and lesbian bisexual male adolescents. *Developmental Psychology*, 31, 75-85.
- Russell, S. T. (2006). Substance use and abuse and mental health among sexual minority youth: Evidence from Add Health. In A. Omoto & H. Kurtzman (Eds.), *Sexual orientation and mental health: Examining identity and development in lesbian, gay, and bisexual people* (pp.13-35). Washington, DC: APA Books.
- Russell, S. T., Driscoll, A. K., & Truong, N. (2002). Adolescent same-sex attractions and relationships: Implications for substance use and abuse. *American Journal of Public Health*, 92, 198-202.

- Russell, S. T., Franz, B. T., & Driscoll, A. K. (2001). Same-sex romantic attraction and experiences of violence in adolescence. *American Journal of Public Health, 91*, 903-906.
- Russell, S. T., & Joyner, K. (2001). Adolescent sexual orientation and suicide risk: Evidence from a national study. *American Journal of Public Health, 91*, 1276-1281.
- Ryan, C., Huebner, D., Diaz, R. M., & Sanchez, J. (2009). Family rejection as a predictor of negative health outcomes in White and Latino lesbian, gay, and bisexual young adults. *Pediatrics, 123*, 346-352.
- Saewyc, E. M., Bearinger, L. H., Heinz, P. A., Blum, R. W., Resnick, M. D. (1998). Gender differences in health and risk behaviors among bisexual and homosexual adolescents. *Journal of Adolescent Health, 23*, 181-188.
- Savin-Williams, R. C. (2005). *The new gay teenager*. Cambridge, MA: Harvard University Press.
- Shidlo, A. (1994). Internalized homophobia: Conceptual and empirical issues in measurement. In B. Greene & G. M. Herek (Eds.), *Lesbian and gay psychology: Theory, research, and clinical applications* (pp. 176-205). Thousand Oaks, CA: Sage.
- Skidmore, W. C., Linsenmeier, J. A. W., & Bailey, J. M. (2006). Gender nonconformity and psychological distress in lesbians and gay men. *Archives of Sexual Behavior, 35*, 685-697.
- Szymanski, D. M. (2009). Examining potential moderators of the link between heterosexist events and gay and bisexual men's psychological distress. *Journal of Counseling Psychology, 56*, 142-151.
- Szymanski, D. M., & Gupta, A. (2009). Examining the relationship between multiple internalized oppressions and African American lesbian, gay, bisexual, and questioning

- persons' self-esteem and psychological distress. *Journal of Counseling Psychology*, 56, 110-118.
- Szymanski, D. M., Kashubeck-West, S., Meyer, J. (2008). Internalized heterosexism: A historical and theoretical overview. *Counseling Psychologist*, 36, 510-524.
- Szymanski, D. M., & Kashubeck-West (2008). Mediators of the relationship between internalized oppressions and lesbian and bisexual women's psychological distress. *Counseling Psychologist*, 36, 575-594.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics*, 4<sup>th</sup> ed. Boston, MA: Allyn and Bacon.
- Taylor, S. E., Kemeny, M. E., Reed, G. M., Bower, J. E., & Gruenewald, T. L. (2000). Psychological resources, positive illusions, and health. *American Psychologist*, 55, 99-109.
- Thompson, S. J., & Johnston, L. (2003). Risk factors of gay, lesbian, and bisexual adolescents: Review of empirical literature and practice implications. *Journal of Human Behavior in the Social Environment*, 8, 111-128.
- Thurlow, C. (2001). Naming the "outsider within": Homophobic pejoratives and verbal abuse of lesbian, gay, and bisexual high-school pupils. *Journal of Adolescence*, 24, 25-38.
- Ueno, K. (2005). Sexual orientation and psychological distress in adolescence: Examining interpersonal stressors and social support processes. *Social Psychology Quarterly*, 68, 258-277.
- Waldner, L. K., & Magruder, B. (1999). Coming out to parents: Perceptions of family relations, perceived resources and identity expression as predictors of identity disclosure for gay and lesbian adolescents. *Journal of Homosexuality*, 37(2), 83-100.

- Williams, T., Connolly, J., Pepler, D., & Craig, W. (2005). Peer victimization, social support, and psychosocial adjustment of sexual minority adolescents. *Journal of Youth and Adolescence, 34*, 471-482.
- Williamson, I. R. (2000). Internalized homophobia and health issues affecting lesbians and gay men. *Health Education Research, 15*, 97-107.
- Willoughby, B. L. B. (2009). Victimization, family rejection, and outcomes of lesbian, gay, and bisexual young people: The role of negative LGB identity. *Dissertation Abstracts International, 69* (7-B), 4450. (UMI No. AAI3322797)
- Wright, E. R., & Perry, B. L. (2006). Sexual identity distress, social support, and the health of gay, lesbian, and bisexual youth. *Journal of Homosexuality, 51*(1), 81-110.
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*, 30-41.

### Appendix A: Tables

Table 1. Frequencies of Traumatic Events Experienced in the Past Year by Gender.

Number of			
Events	Male	Female	Total
0	98	83	181
1	57	54	111
2	40	32	72
3	29	36	65
4	17	19	36
5	17	10	27
6	4	12	16
7	4	3	7
8	3	2	5
9	1	2	3
10	2	0	2
11	2	0	2
Total	274	253	527

Table 2. Frequencies of Life Events Experienced in the Past Year by Gender.

Number			
of Events	Male	Female	Total
0	33	17	50
1	30	36	66
2	48	32	80
3	33	35	68
4	32	40	72
5	30	20	50
6	17	18	35
7	15	16	31
8	12	11	23
9	9	8	17
10	6	7	13
11	2	4	6
12	4	5	9
13	1	2	3
14	1	2	3
15	1	0	1
<b>Total</b>	<b>274</b>	<b>253</b>	<b>527</b>

Table 3. Frequencies of Victimization Events Experienced in Lifetime.

Number of Victimization Events	Verbal	Physical
None	126	472
Once	33	25
Twice	35	6
3-5 times	45	6
6-20 times	68	11
21-100 times	107	6
101-200 times	42	1
201+ times	71	0
Total	527	527

Table 4. Frequency of Kinsey Scale Ratings by Gender.

Kinsey Scale	Male	Female
	<i>n</i> (%)	<i>n</i> (%)
6 ( <i>totally gay or lesbian</i> )	91 (33)	55 (22)
5 ( <i>almost totally gay or lesbian</i> )	54 (20)	48 (19)
4 ( <i>bisexual, mostly gay or lesbian</i> )	62 (23)	48 (19)
3 ( <i>bisexual, equally gay or lesbian &amp; straight</i> )	32 (12)	51 (20)
2 ( <i>bisexual, mostly straight</i> )	34 (12)	51 (20)
Total	273	253

Table 5. Means and Standard Deviations of Transformed Study Variables.

Variable	Mean	SD	N
<i>General Stressors</i>			
Traumatic events	1.05	.878	527
Life events	1.81	.875	527
<i>Victimization</i>			
Verbal	1.57	.973	527
Physical	.16	.482	527
<i>Minority Stress</i>			
Fears	.73	.455	525
Internalized homophobia	.63	.448	525
<i>Personal Resources</i>			
Self-esteem	3.17	.494	527
Mastery	3.00	.457	526
<i>Social Support</i>			
General	3.68	.811	525
LGB-specific	3.83	1.388	519
<i>Minority Identity Characteristics</i>			
Gender atypicality	4.35	1.812	526
Identifiability by strangers as LGB	.77	.607	524
Kinsey score	4.27	1.428	526

*Mental Health and Behavioral Problems*

Trauma symptoms	.95	.538	528
Stress	1.94	.513	528
Internalizing behaviors	3.85	1.193	526
Externalizing behaviors	3.90	1.016	526

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Table 6. Pearson Correlations of Transformed Study Variables.

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
<i>Victimization</i>																					
1. Verbal	1																				
2. Physical	.26***	1																			
<i>Mental Health and Behavior Problems</i>																					
3. Internalizing behaviors	.12**	.07	1																		
4. Externalizing behaviors	.11*	.12**	.57***	1																	
5. Perceived stress	.06	.07	.53***	.33***	1																
6. Trauma symptoms	.20**	.06	.73***	.53***	.49***	1															
<i>Minority Stress</i>																					
7. Fears of disclosure	.26***	.07	.31***	.12**	.18***	.26***	1														
8. Internalized homophobia	.06	-.07	.31***	.14**	.22***	.30***	.36***	1													
<i>Personal Resources</i>																					
9. Self-esteem	-.09*	-.00	-.54***	-.28***	-.55***	-.42***	-.21***	-.32***	1												
10. Mastery	-.10*	-.09	-.47***	-.26***	-.57***	-.39***	-.18***	-.34***	.71***	1											
<i>Social Support</i>																					
11. Family	-.09	-.01	-.35***	-.24***	-.31***	-.29***	-.20***	-.13**	.30***	.30***	1										
12. Friends	-.08	-.10	-.24***	-.13**	-.24***	-.18***	-.10*	-.16***	.25***	.31***	.29***	1									
13. Special friend or family	-.05	-.04	-.22***	-.14**	-.26***	-.16***	-.12**	-.25***	.29***	.30***	.34***	.61***	1								
<i>LGB-specific Support</i>																					

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	
14. Heterosexual females	.02	.17***	-.06	.05	-.14**	-.04	-.07	-.00	.09*	.11*	.09*	.10*	.08	1								
15. Heterosexual males	-.05	.10*	-.08	-.01	-.09*	-.05	-.13***	-.05	.09	.10*	.10*	.06	.08	.66***	1							
16. LB females	-.02	.13**	-.01	.12**	-.07	-.04	-.07	-.08	-.00	.02	.04	.07	.05	.43***	.31***	1						
17. GB males	.07	.13**	-.05	.09	-.07	-.04	-.04	-.07	.06	.06	.05	.11*	.09	.43***	.36***	.60***	1					
<i>Minority Identity Characteristics</i>																						
18. ID by strangers	.32***	.16***	.02	.04	.03	.05	.07	-.03	-.12**	-.07	.09	-.01	-.01	.05	.03	.01	.07	1				
19. Gender atypicality	.19***	.12**	.01	.04	.02	.00	.06	-.10*	-.03	-.02	.09*	-.06	-.06	-.00	-.01	.04	-.00	.36***	1			
<i>General Stressors</i>																						
20. Traumatic events	.11*	.23***	.23***	.27***	.14**	.24***	.04	-.00	-.10*	-.09*	-.13**	-.07	-.01	.14*	.17***	.14**	.10*	.02	-.01	1		
21. Life events	.16***	.17***	.19***	.32***	.13**	.28***	.03	-.02	-.09*	-.10*	-.01	.02	.01	.09*	.09*	.05	.01	.07	.06	.52***	1	

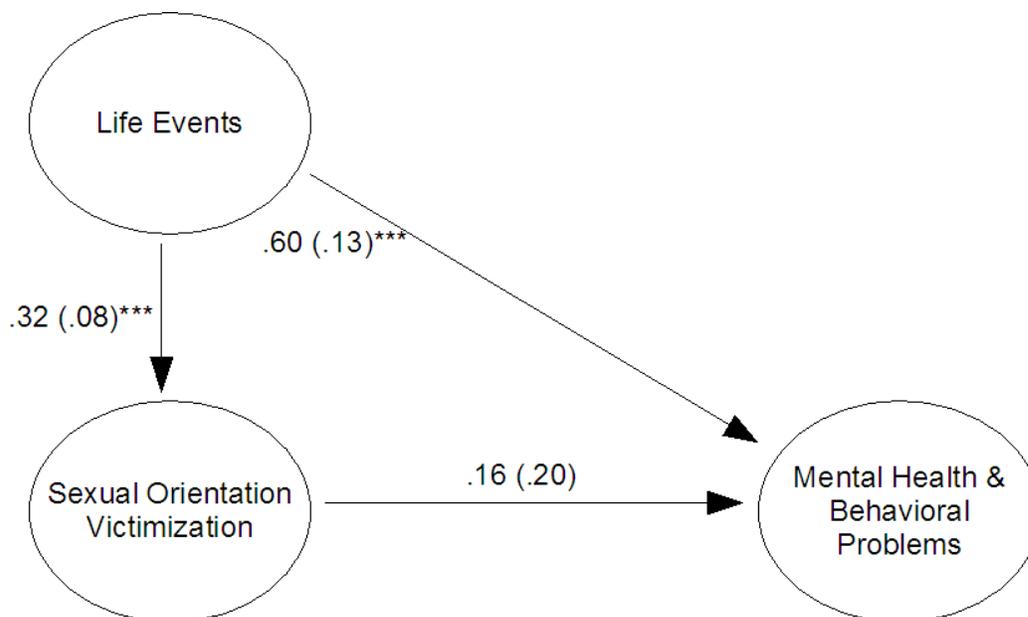
Table 7. Fit Indices for Path Models.

Model	$\chi^2$	<i>df</i>	<i>NFI</i>	<i>NNFI</i>	<i>CFI</i>
1	57.64	17	.95	.94	.96
2	20.60	6	.94	.89	.96
3	100.17	29	.92	.91	.94
4	71.23	34	.87	.88	.93
5	28.73	17	.91	.93	.96
6	26.43	16	.89	.92	.95
7	98.28	17	.92	.89	.93
8	2.97	6	1.00	1.00	1.00
9	174.86	30	.91	.88	.92
10	158.61	29	.92	.89	.93
11	49.98	34	.91	.94	.97
12	68.34	39	.87	.91	.94
13	56.17	37	.89	.94	.96
14	56.20	38	.89	.94	.96
15	59.48	40	.89	.94	.96
16	31.16	12	.95	.94	.97
17	185.21	39	.89	.87	.91
18	133.48	38	.92	.91	.94
19	100.60	34	.91	.90	.94
20	145.23	39	.88	.86	.91
21	113.93	39	.90	.90	.93
22	109.55	38	.91	.91	.94
23	111.11	40	.91	.91	.94
24	139.85	17	.85	.77	.86
25	105.18	34	.92	.91	.95
26	138.48	39	.90	.89	.93
27	122.81	38	.91	.91	.94
28	125.87	39	.91	.91	.94
29	134.64	41	.90	.90	.93
30	155.15	32	.88	.86	.90
31	101.70	34	.92	.91	.94

32	121.09	39	.90	.90	.93
33	77.92	34	.94	.94	.96
34	88.63	39	.93	.94	.96
35	93.28	42	.93	.94	.96
36	94.60	45	.92	.95	.96

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## Appendix B: Figures



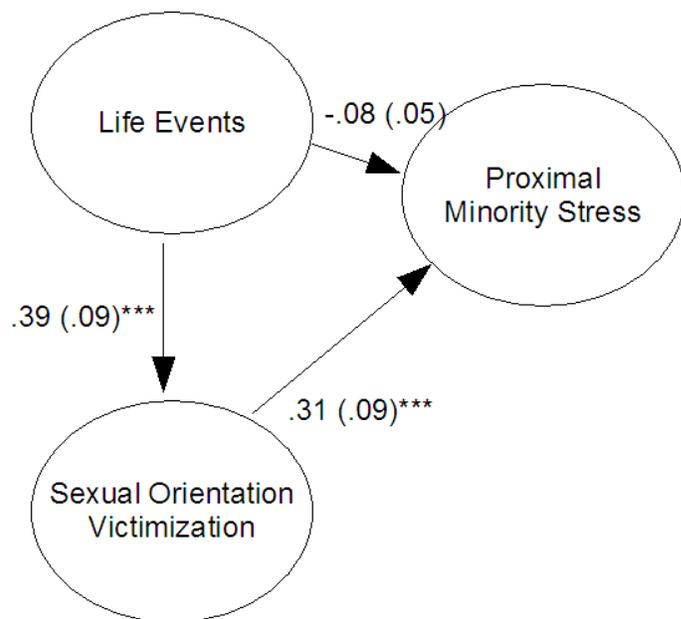
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 1. Path model predicting mental health and behavioral problems using sexual orientation victimization while controlling for life events.



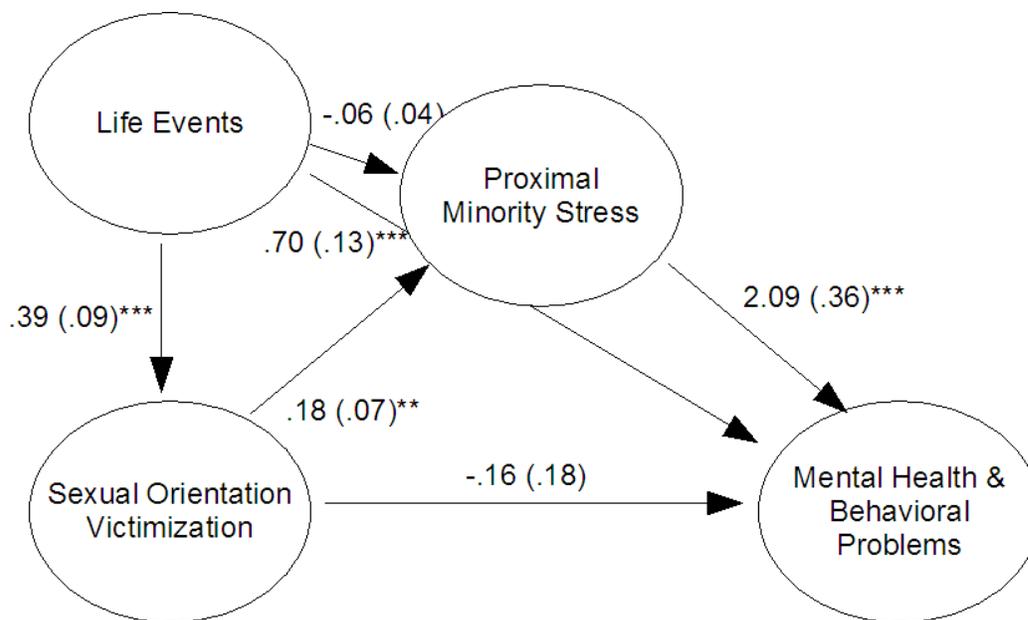
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 2. Path model predicting minority stress using sexual orientation victimization while controlling for life events.



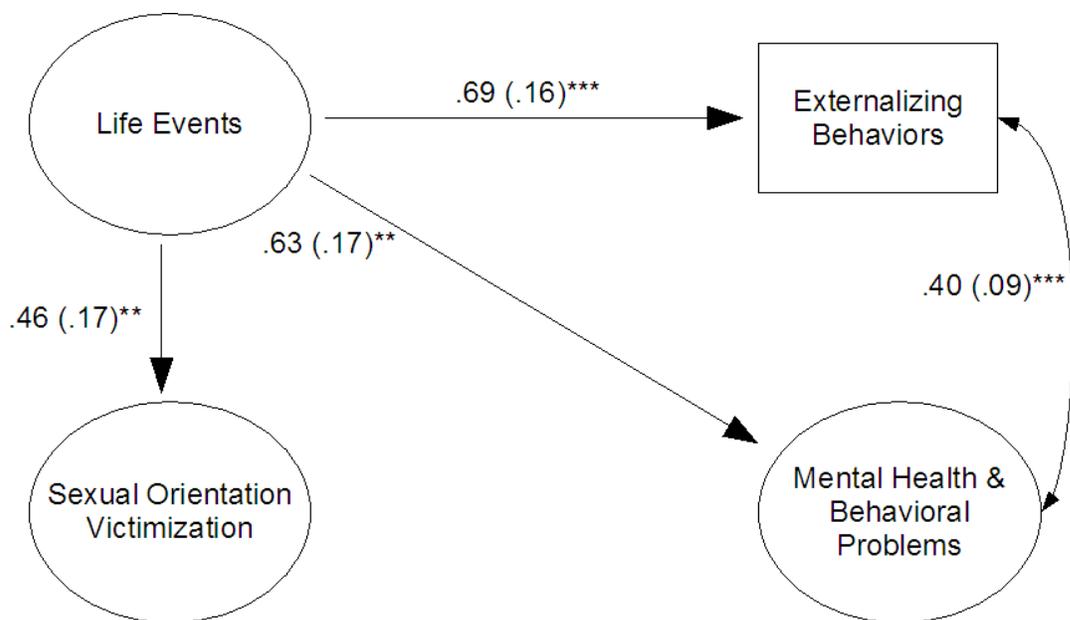
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 3. Path model predicting mental health and behavioral problems using proximal minority stress and sexual orientation victimization while controlling for life events.



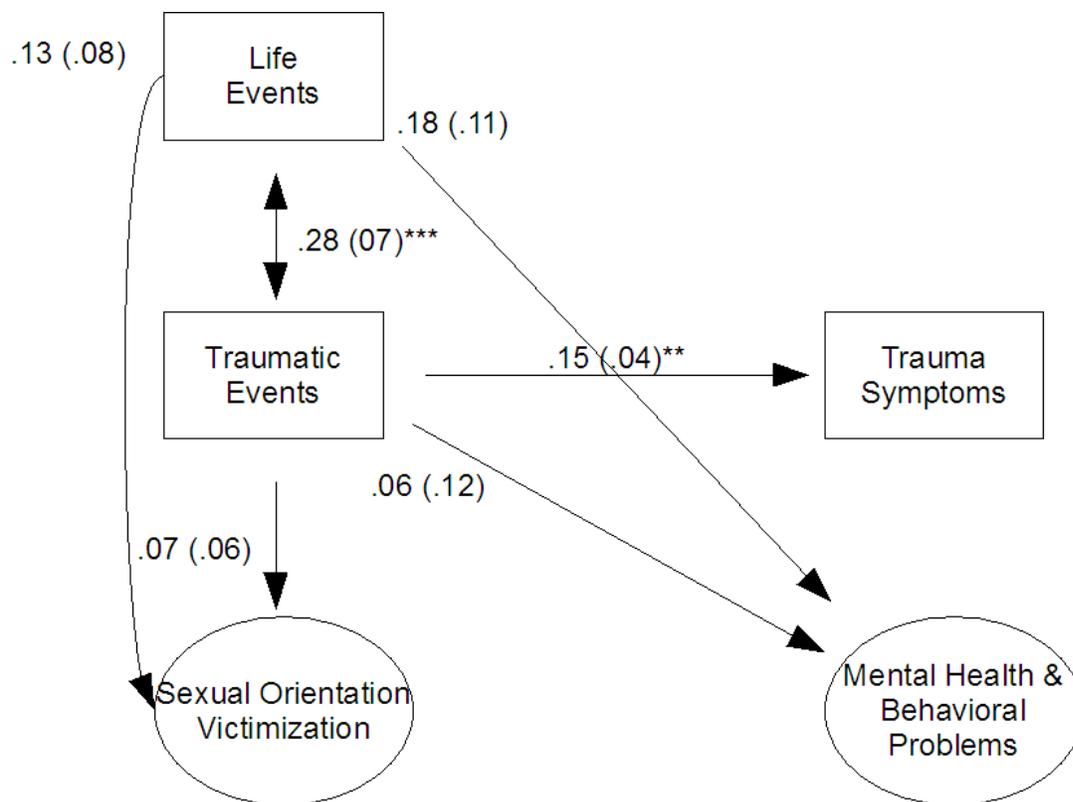
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 4. Path model predicting mental health and behavioral problems for youth with low minority stress using sexual orientation victimization and life events.



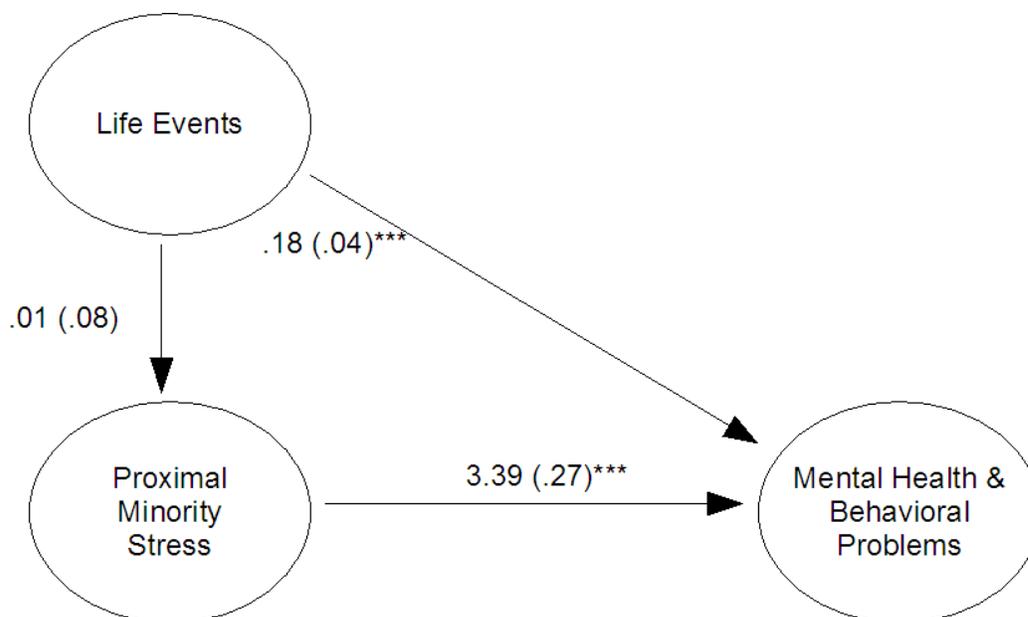
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 5. Path model predicting mental health and behavioral problems for youth with high minority stress using sexual orientation victimization and life events.



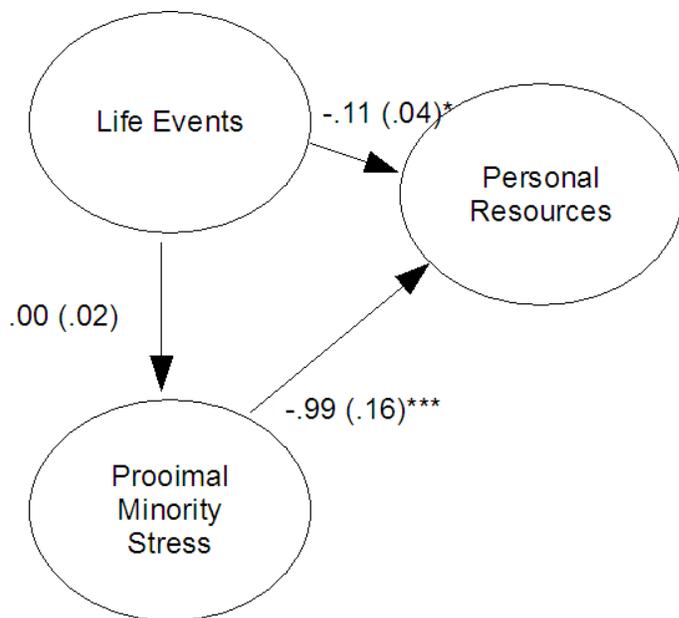
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 6. Path model predicting mental health and behavioral problems using proximal minority stress while controlling for life events.



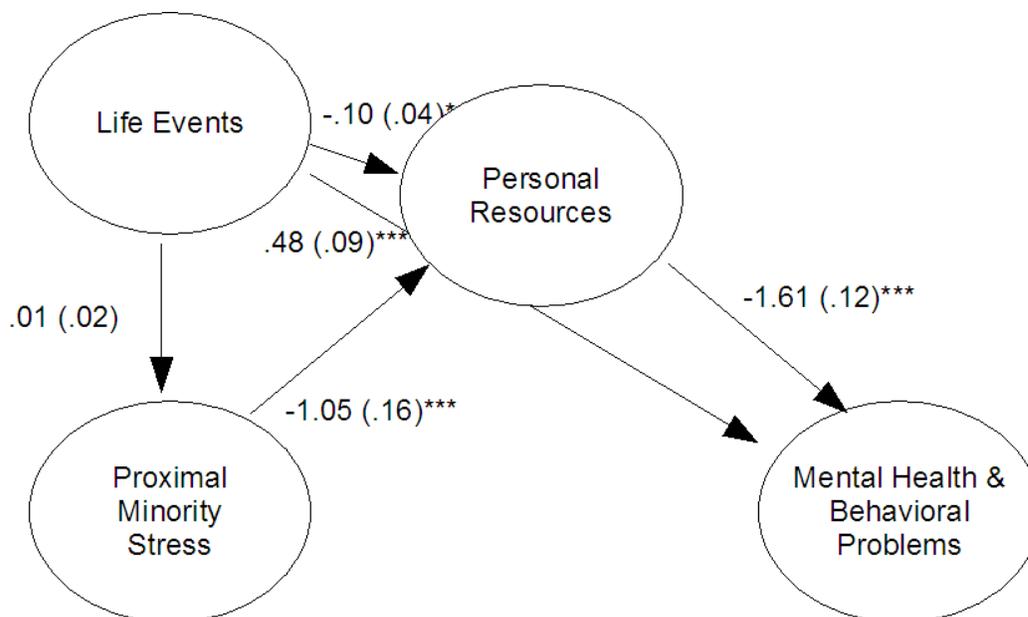
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 7. Path model predicting personal resources using proximal minority stress while controlling for life events.



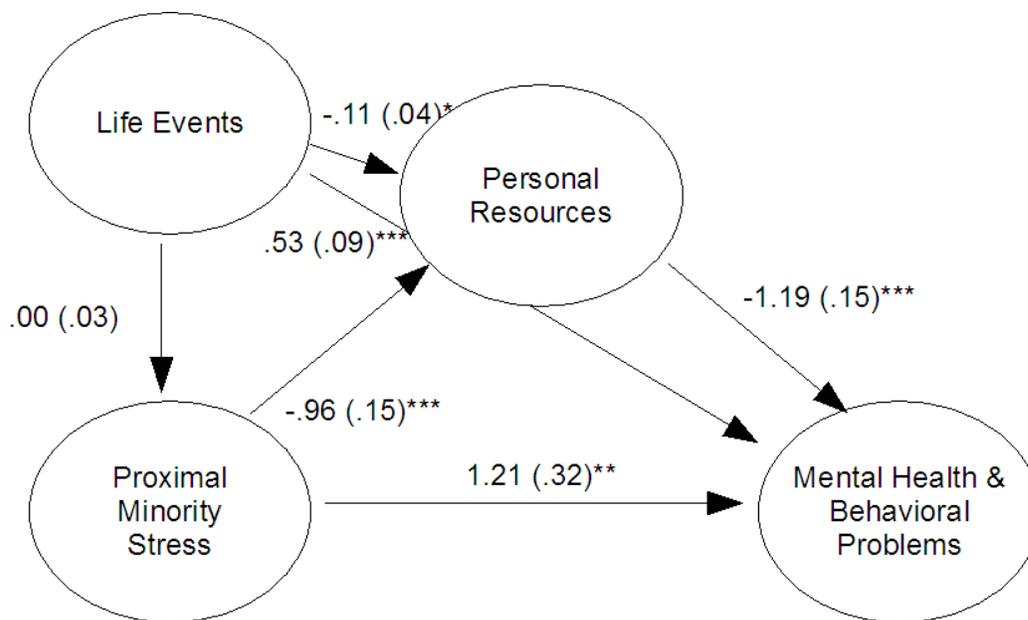
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 8. Path model predicting mental health and behavioral problems using personal resources and proximal minority stress indirectly while controlling for life events.



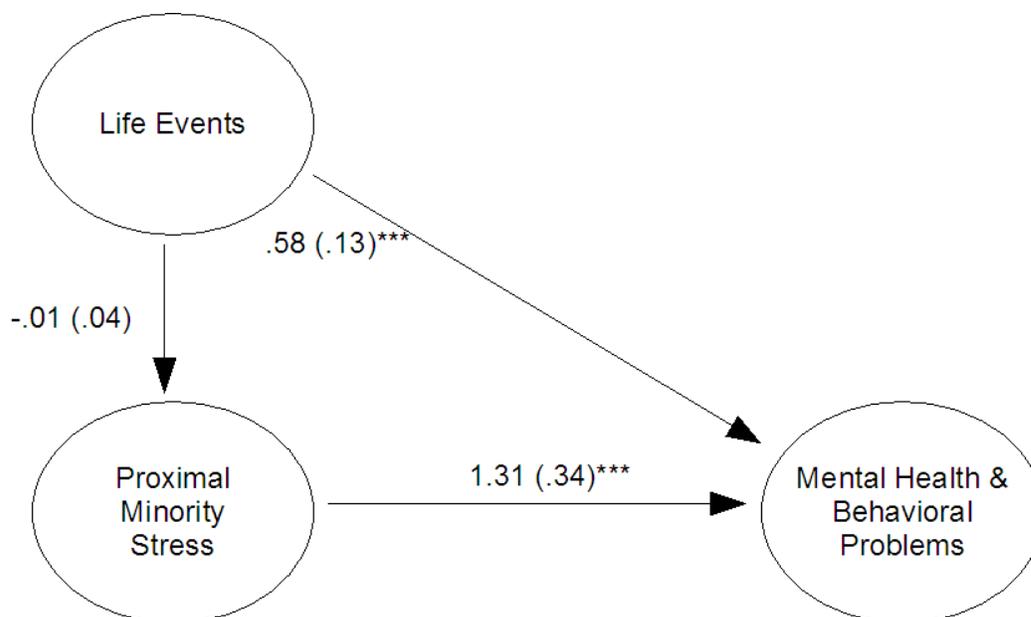
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 9. Path model predicting mental health and behavioral problems using personal resources and proximal minority stress directly while controlling for life events.



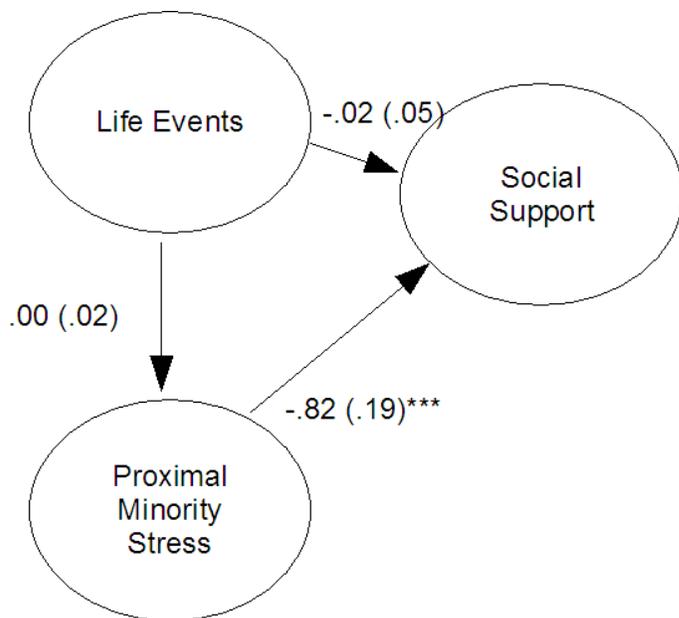
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 10. Path model predicting mental health and behavioral problems for youth using sexual orientation victimization and life events with personal resources as a moderator.



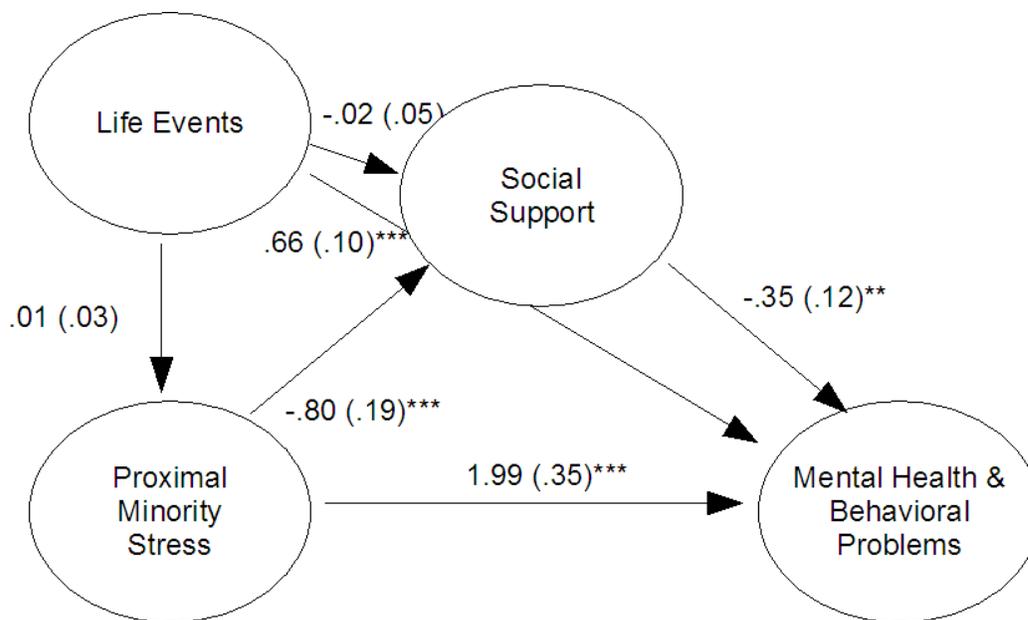
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 11. Path model predicting social support using proximal minority stress while controlling for life events.



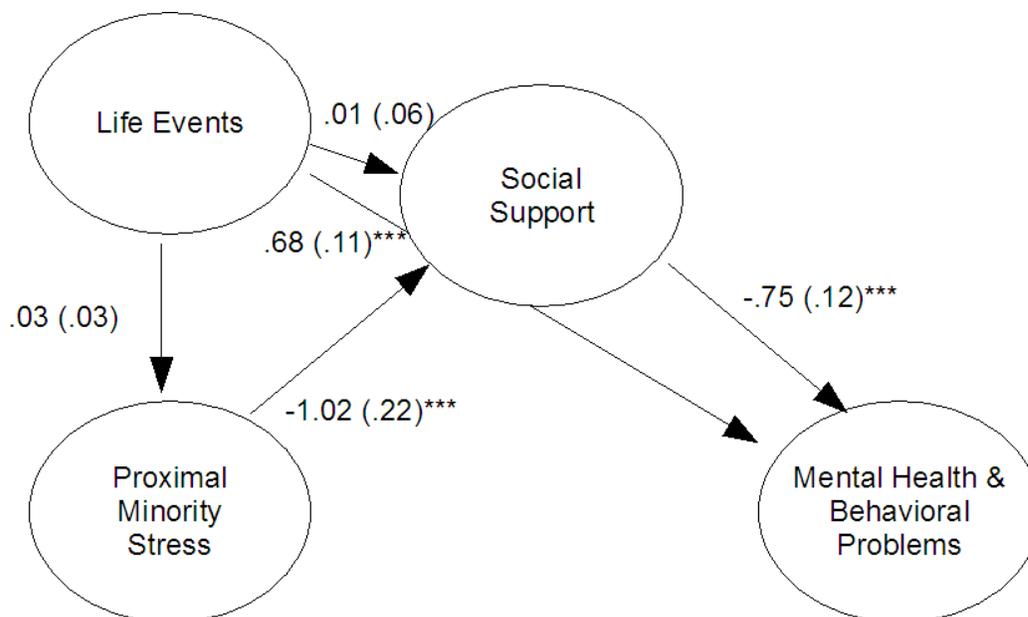
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 12. Path model predicting mental health and behavioral problems using social support and proximal minority stress directly while controlling for life events.



Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

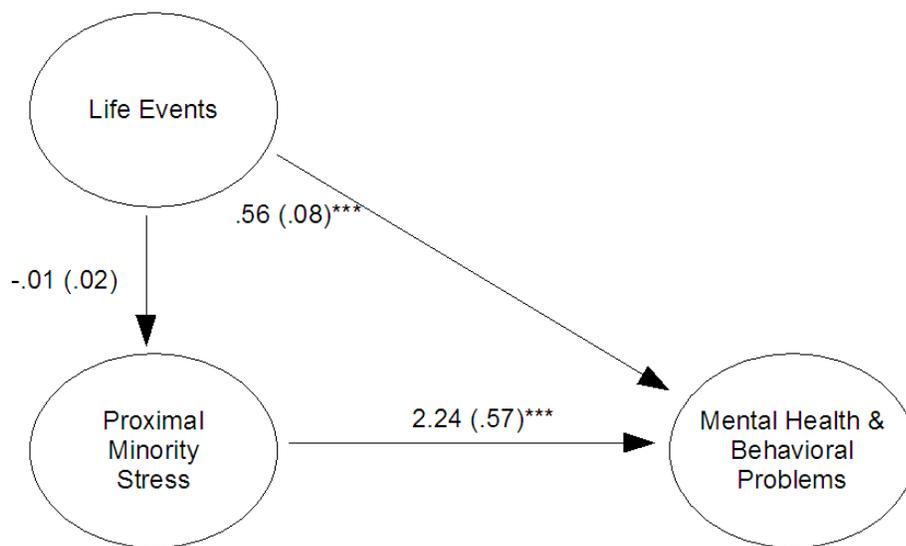
\*  $p < .05$ .

\*\*  $p < .01$ .

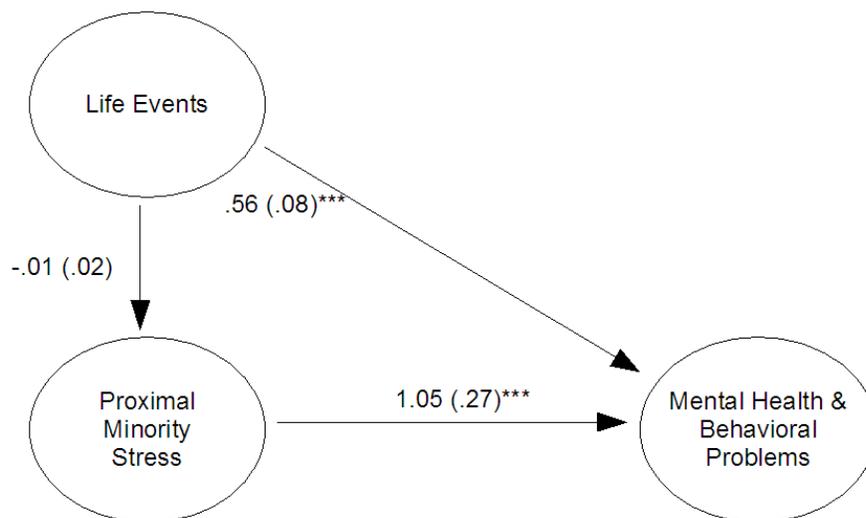
\*\*\*  $p < .001$ .

Figure 13. Path model predicting mental health and behavioral problems using social support and proximal minority stress indirectly while controlling for life events.

Youth with Low Social Support



Youth with High Social Support



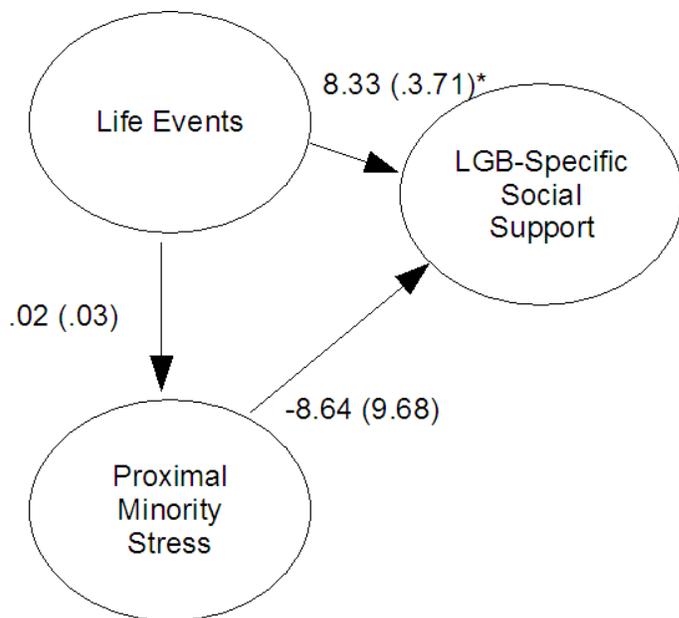
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 14. Path model predicting mental health and behavioral problems for youth using sexual orientation victimization and life events with social support as a moderator.



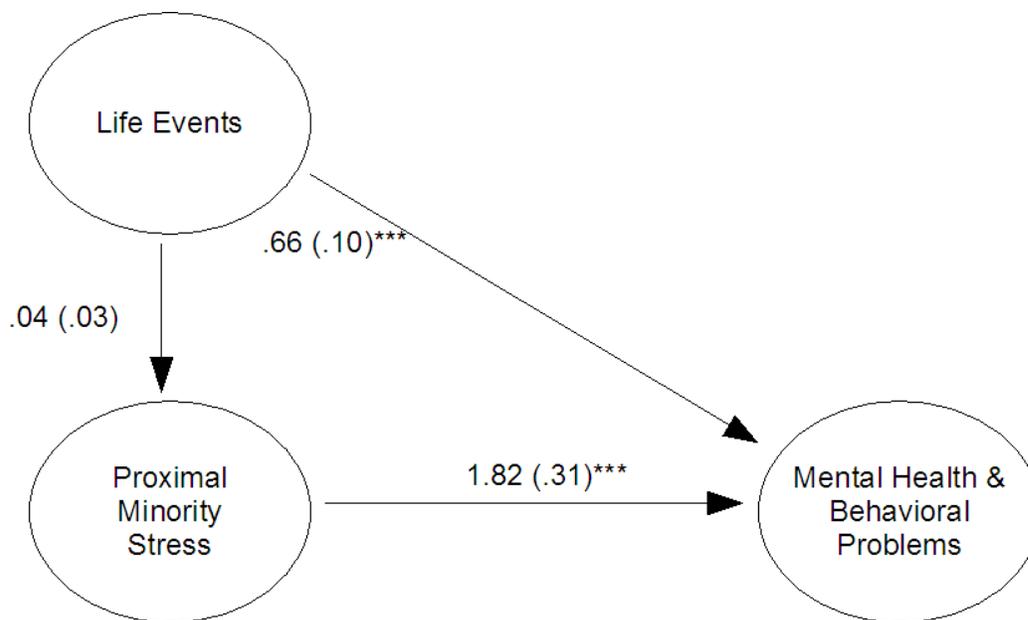
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 15. Path model predicting LGB-specific social support using proximal minority stress while controlling for life events.



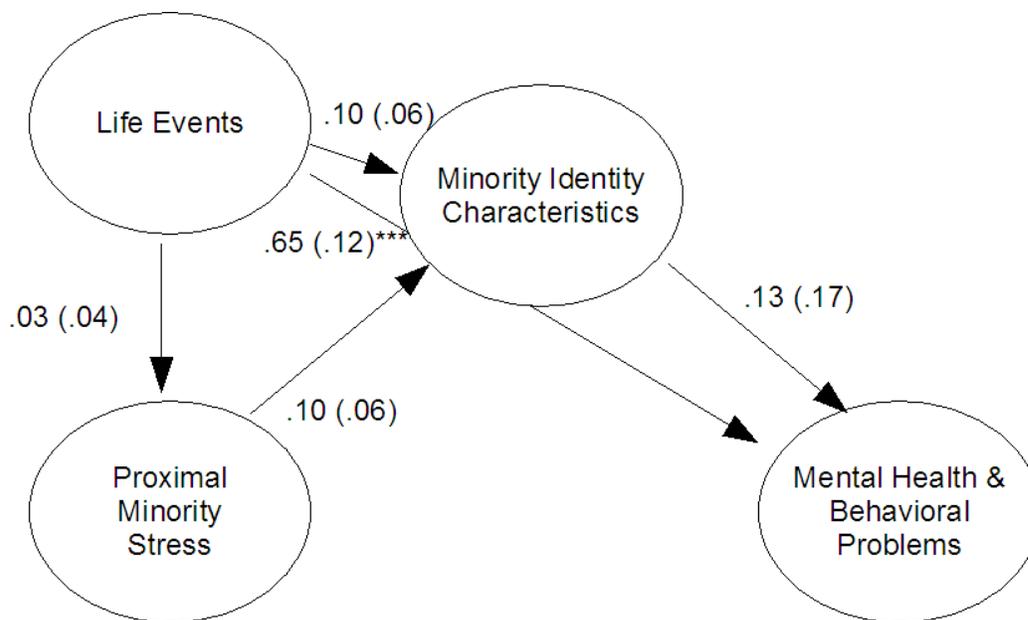
Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 16. Path model predicting mental health and behavioral problems for youth using sexual orientation victimization and life events with LGB-specific social support as a moderator.



Note. Unstandardized  $\beta$ s are presented with standard errors in parentheses.

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

Figure 17. Path model predicting mental health and behavioral problems using minority identity characteristics and proximal minority stress indirectly while controlling for life events.

## Vita

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- 2003-2005 Hintz Fellow  
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- 2001 Outstanding Student in Psychology  
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