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RESULTS FROM A NATIONALLY REPRESENTATIVE
LONGITUDINAL STUDY

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Brooke M. Bluestein

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**THE ASSOCIATIONS BETWEEN SEXUAL ORIENTATION AND
PSYCHOPATHOLOGY, SUBSTANCE USE, AND EXPERIENCES OF VIOLENCE:
RESULTS FROM A NATIONALLY REPRESENTATIVE LONGITUDINAL STUDY**

By

Brooke M. Bluestein

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ABSTRACT

THE ASSOCIATIONS BETWEEN SEXUAL ORIENTATION AND PSYCHOPATHOLOGY, SUBSTANCE USE, AND EXPERIENCES OF VIOLENCE: RESULTS FROM A NATIONALLY REPRESENTATIVE LONGITUDINAL STUDY

By

Brooke M. Bluestein

Previous research has found that gay, lesbian, and bisexual (GLB) adolescents exhibit an increased rate of a wide range of psychosocial problems during adolescence. However, the majority of the research with GLB adolescents has been conducted with small, non-generalizable, convenience samples. In addition, although it has repeatedly been suggested that overt social support, particularly from friends, might moderate the relationship between sexual orientation and a number of the negative outcomes that have been found in previous research, very few studies have empirically examined the role of peer support for GLB adolescents. The present study examined the associations between romantic attraction (exclusively heterosexual, exclusively homosexual, and bisexual) and psychopathology, substance use, and experiences of violence using data drawn from the public-use National Longitudinal Study of Adolescent Health (Wave 1: $n = 5586$; Wave 3: $n = 4681$). Results indicated that although GLB adolescents are more likely than heterosexual adolescents to experience a wide range of negative outcomes, these results generally are not found in young adulthood (with the exceptions of depression and suicidal ideation). Furthermore, although previous research has suggested that peer support may serve a protective function for GLB adolescents, results indicated that a high level of social support was associated with more smoking, negative consequences of alcohol intoxication, and requiring medical attention following a physical fight.

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The Associations between Sexual Orientation and Psychopathology, Substance Use, and
Experiences of Violence:

Results from a Nationally Representative Longitudinal Study

There is a considerable body of research which suggests that gay, lesbian, and bisexual (GLB) adolescents regularly fail to reach their full social, psychological, and academic potential within the modern American education system (Besner & Spungin, 1995; Bontempo & D'Augelli, 2002; D'Augelli, 2002; Gray, 1999; Kosciw, 2004; Lipkin, 1995; Russell, Seif, & Truong, 2001; Schneider & Owens, 2000; Schneider, Farberow, & Kruks, 1989; Unks, 1995; van Wormer & McKinney, 2003; Woog, 1995). For the vast majority of American adolescents, the high school environment is an extremely important element in the maintenance of a sense of psychosocial well-being. Specifically, because a large portion of time in an adolescent's life is consumed by both school and activities that are related to school (e.g., homework, athletics, extracurricular activities), the high school environment has the potential to greatly impact the psychosocial well-being of adolescents (Larson & Richards, 1994).

Furthermore, during the developmental period of adolescence, the peer group often becomes the most important component of an adolescent's interpersonal world (Blos, 1962). In other words, the interpersonal dynamic of the adolescent peer group can greatly influence the psychosocial welfare of adolescents either positively or negatively. According to Erikson, "Young people can become remarkably clannish, intolerant, and cruel in their exclusion of others who are 'different'" (1968, p. 132). For the unfortunate adolescents whose primary experiences with the peer group are negative, the long-term impact on the adolescent's psychosocial development can be costly. Specifically, the

adolescent is at a greater risk of developing a wide array of negative psychosocial outcomes, such as a greater sense of loneliness, poor self-esteem, a lack of resiliency, and poor academic performance (Larson & Richards, 1994).

In an effort to avoid negative peer group experiences, adolescents often attempt to assimilate to their group of peers (Erikson, 1968). During the period of adolescence, conforming to the normative nature of the adolescent peer group is extremely important for interpersonal success; those individuals who refuse or are unable to conform to the standards established by the adolescent peer group are consequently at particular risk for developing undesirable psychosocial outcomes (Larson & Richards, 1994).

In addition, during the period of adolescence, the actual composition of the peer group is often altered. Specifically, the peer group begins to incorporate members of both genders, a phenomenon which creates the opportunity for romantic relationships to flourish. It has been argued that during the period of adolescence, individuals generally experience their first stirrings of romantic attraction towards other individuals (Savin-Williams, 1998). However, even in this seemingly personal arena, conforming to the normative standard of the adolescent peer group is essential to maintaining one's position in the group of peers. For those adolescents whose romantic and sexual attractions do not correspond with the general consensus of the peer group (e.g., GLB adolescents), there arises yet another reason for being ostracized from one's established group of peers.

The developmental period of adolescence can be difficult for the majority of American adolescents, and for some, the tumultuous nature of adolescence is even more pronounced (Arnett, 1999). For adolescents who do not conform to the normative

standard of the peer group, the developmental period of adolescence may be even more arduous and uncomfortable.

Consequently, it is not surprising that a number of researchers have found that GLB adolescents exhibit increased rates of problematic behavior during adolescence. According to Harbeck (1992):

The experience of acquiring a homosexual or bisexual identity places the teenager at risk for dysfunction, in part because of the stigma attached to homosexuality in contemporary American society. Gay, lesbian, and bisexual adolescents may be at a higher risk of dysfunction because of their unfulfilled developmental needs for identification with a peer group, lack of positive role modeling influences and experiences, negative societal pressures, and their dependence upon parents and educators who may be unwilling or unable to provide emotional support concerning the issue of homosexuality. (p. 16)

Previous research has repeatedly found that GLB adolescents demonstrate a greater incidence of psychosocial problems than do their heterosexual counterparts. However, this is not to say that GLB adolescents exhibit psychosocial problems that are categorically different from those of heterosexual adolescents; rather, the research indicates that GLB adolescents merely demonstrate a significantly higher rate of a number of common adolescent problems (e.g., psychopathology, substance abuse) compared to heterosexual adolescents.

For instance, GLB adolescents report more symptoms of psychopathology than do heterosexual adolescents. Prior studies with GLB adolescents have found that they are

more likely to endorse symptoms of depression (Gonsiorek, 1988; Russell & Joyner, 2001) and suicidality (e.g., suicidal thoughts, plans, or attempts) than are heterosexual adolescents (D'Augelli, 2002; D'Augelli & Hershberger, 1993; D'Augelli, Hershberger, & Pilkington, 2001; Grossman & Kerner, 1998; King, 1997; Lewinsohn, Rohde, & Seeley, 1996; Russell, 2003; Russell & Joyner, 2001). In fact, the Massachusetts Governor's Commission on Gay and Lesbian Youth (1993) found that gay and lesbian youth accounted for approximately one-third of all completed youth suicides; furthermore, the Commission concluded that gay and lesbian adolescents may actually be two or three times more likely to attempt suicide than heterosexual adolescents. According to previous research, poor relationships with family, hostile school and social environments, and a lack of peer support may be associated with the increased incidence of suicidality in GLB adolescents (D'Augelli & Hart, 1987; Gonsiorek, 1988; Radkowsky & Siegel, 1997; Russell et al., 2001b).

In addition to exhibiting an increased risk of psychopathology, a number of studies have also found that GLB adolescents are more likely to engage in substance use and substance abuse than are heterosexual adolescents. Specifically, one study reported that out of the 37 gay and lesbian adolescents that were interviewed for the study, 36 admitted to alcohol and substance abuse (Uribe & Harbeck, 1992). Similarly, a different study found evidence of significant alcohol and drug abuse among a sample of gay and lesbian youth (Jordan, 2000). This is especially noteworthy given that a previous study with a large, racially diverse sample of adolescents reported that 51.5 percent of adolescents have used alcohol in the past 30 days, but only 30.8 percent have consumed five or more drinks in a row in the past two weeks (Wallace, Bachman, O'Malley,

Johnston, Schulenberg, & Cooper, 2002). In addition, a study of rural high school students reported significantly more marijuana and alcohol use among gay and lesbian adolescents than among heterosexual adolescents (Rostosky, Owens, Zimmerman, & Riggle, 2003). Finally, when compared to heterosexual adolescents, one study found that bisexual adolescents were more likely to smoke cigarettes, get drunk, drink alone, experience problems caused by drinking, use marijuana, and use other drugs (Russell, Driscoll, & Truong, 2002).

Further, GLB adolescents frequently withstand blatant acts of harassment, bullying, and violence within the American education system. Kevin Jennings, the executive director of the Gay, Lesbian, and Straight Education Network (GLSEN), suggests, “Lesbian, gay, bisexual, and transgendered (LGBT) students face harassment and violence, and most schools do nothing about it” (2000, p. 285). GLSEN conducts a national survey of gay and lesbian adolescents every two years (The National School Climate Survey). In the 2007 National School Climate Survey, 86.2% of GLBT high school students reported verbal harassment and 44.1% of GLBT high school students reported physical harassment that was directly in relation to their perceived sexual orientation. Not surprisingly, 60.8% of GLBT high school students reported feeling unsafe at school. Similarly, a study of same sex romantic attraction and experiences of violence during adolescence found that adolescents who reported either same-sex or both-sex romantic attraction were more likely than adolescents who reported only opposite-sex romantic attraction to experience extreme forms of violence (e.g., being involved in a fight that required medical attention; being jumped; being cut, stabbed, or shot; Russell, Franz, & Driscoll, 2001). While the majority of the literature on sexual

orientation and experiences of violence is focused on acts of violence against GLB persons, one study examined the relationship between sexual orientation and the perpetration of violence; this study found that GLB participants were more likely to perpetrate violence than were heterosexual adolescents (Russell et al., 2001a).

The majority of the research with GLB adolescents has been conducted with small, non-generalizable, convenience samples. However, there is a small body of previous research (Russell et al., 2001a; Russell et al., 2001b; Russell et al., 2002; Russell & Consolacion, 2003; Russell & Joyner, 2001) that has attempted to remedy a number of the methodological problems that can be found in this field of study. These studies utilized the National Longitudinal Study of Adolescent Health (Add Health; Udry, 2003) to examine a variety of outcome variables (e.g., suicide risk, substance use and abuse, experiences of violence) in a large, nationally representative sample of adolescents. In the present study, we will attempt to replicate these findings using the public-use Add Health dataset, which contains only one half of the core sample and one half of the well educated African-American oversample, chosen at random. Furthermore, we will expand this body of research in two ways.

First, it is imperative to note that there are a number of factors that may differentially affect the relationship between sexual orientation and negative psychosocial outcomes. For instance, it has repeatedly been suggested that overt social support, particularly from friends, might moderate the relationship between sexual orientation and a number of the negative outcomes that have been found in previous research (D'Augelli & Hart, 1987; Gonsiorek, 1988; Radkowsky & Siegel, 1997; Russell et al., 2001b). Nevertheless, very few studies have empirically examined the role of peer support for

GLB adolescents. Of the studies that have investigated the impact of friendship and peer support, it has generally been found that GLB adolescents do not feel well supported by peers (Hershberger & D'Augelli, 1995; Martin & Hetrick, 1988; Radkowski & Siegel, 1997; Sullivan & Wodarski, 2002). Furthermore, a small number of previous studies have found a significant relationship between peer support and negative psychosocial outcomes in GLB adolescents (Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998; Williams, Connolly, Pepler, & Craig, 2005). However, to date, no study has examined the influence of peer support on a wide variety of psychosocial outcomes for GLB adolescents using a large, nationally representative dataset. Thus, the current study will augment the existing literature on this understudied population by examining whether or not peer support is able to moderate the relationship between sexual orientation and negative outcomes in a nationally representative dataset.

Second, a wide body of literature has indicated that many of the negative psychosocial outcomes that have been identified in GLB adolescents (e.g., higher rates of depression, suicidality, and substance use) can also be found in samples of GLB adults (Herrell et al., 1999; Hughes & Eliason, 2002; Mills et al., 2004). Nevertheless, only a small number of studies have examined a sample of GLB individuals at more than one time point. Furthermore, the studies tend to either follow the participants for a maximum of 12 months (Lackner et al., 1993; Rosario, Schrimshaw, Hunter, & Gwadz, 2002) or are focused exclusively on a public health issue such as the transmission of HIV (Martin & Dean, 1993; McKusnick, Coates, Morin, Pollack, & Hoff, 1990). Therefore, the current study will be able to contribute to the extant literature by investigating the psychosocial outcomes of a community sample of GLB and heterosexual participants during

adolescence as well as seven years later to determine if a similar pattern of outcomes can be found at both periods of time.

The Current Study

Using a nationally representative, longitudinal dataset, the present study will examine the associations between romantic attraction (exclusively heterosexual, exclusively homosexual, and bisexual) and psychopathology, substance use, and experiences of violence. In the present study, it is hypothesized that, in general, GLB adolescents will exhibit significantly worse outcomes than heterosexual adolescents; for the purposes of this study, a poor outcome is characterized by increased psychopathology, greater substance use, and/or more experiences of violence. Specifically, it is hypothesized that GLB adolescents will exhibit significantly worse outcomes than heterosexual adolescents at Wave 1 (*Hypothesis 1*). However, because much of the literature suggests that the poor outcomes observed in GLB individuals may be due to a lack of social support (D'Augelli & Hart, 1987; Gonsiorek, 1988; Radkowsky & Siegel, 1997; Russell et al., 2001b), it is hypothesized that peer support will moderate the relationship between a homosexual or bisexual romantic attraction and subsequent psychopathology, substance use, and experiences of violence (*Hypothesis 2*). Finally, it is hypothesized that these negative outcomes will also be seen in young adulthood, and that GLB individuals will once again exhibit significantly worse outcomes than heterosexual individuals at Wave 3 (*Hypothesis 3*).

Method

The data for the present study were drawn from the National Longitudinal Study of Adolescent Health (Add Health; Udry, 2003). This is a nationally representative

Longitudinal study, which has been collected in four waves between 1994 and 2008; the **P**resent study will use the first and third waves of data collection.

The sampling process for Add Health began by identifying all of the high schools **i**n the United States with a minimum of 30 enrolled students ($N = 26,666$). The schools **w**ere then stratified into 80 clusters by their geographic region (Northeast, Midwest, **S**outh, West), urbanicity (urban, suburban, rural), school size (125 or fewer, 126–350, **3** 51–775, 776 or more students), school type (public, private, parochial), percent white (0, **1** –66, 67–93, 94–100), percent black (0, 1–6, 7–33, 34–100), grade span (K–12, 7–12, 9–**1** 2, 10–12), and curriculum (general, vocational/technical, alternative, special education). **F**ollowing the stratification of the schools, a random sample of schools was selected from **e**ach of the clusters; of the schools that were selected for inclusion in the project, 79 **P**ercent agreed to participate ($N = 134$).

Among the participating schools, 96 percent ($N = 129$) allowed their students to **C**omplete a confidential, in-school survey during the course of the 1994–1995 academic **Y**ear ($N = 90,118$). From the rosters of the participating schools, a randomly selected **S**ubsample of the students participated in a subsequent, 90-minute in-home interview **b**etween April and December 1995 (Wave 1 in-home interview: $N = 20,745$; 10,480 **f**emale, 10,264 male). The participants for the in-home interview ranged in age from 11 **t**o 21 years old ($M = 16$ years, 25th percentile = 14 years, 75th percentile = 17 years). The **t**hird wave of data collection, which was designed to investigate a number of factors **i**nvolving in the transition from adolescence to young adulthood, was collected during an **i**n-home interview conducted between August 2001 and April 2002 ($N = 15,197$; 8,030

female, 7,167 male). At Wave 3, the participants were between 18 and 28 years of age ($M = 22$ years, 25th percentile = 21 years, 75th percentile = 23 years).

The Add Health interviews measured a wide array of social and health domains, including physical, mental, and sexual health; exercise and diet; substance use; family, peer, and romantic relationships; violent and delinquent activity; school policies; and access to services in the community. A number of the interview questions were collected by utilizing an audio computer-aided self-interview (Audio-CASI), including the questions regarding romantic attraction, substance use, and fighting and violence. For the Audio-CASI portions of the interview, the participants listened to the interview questions through headphones and recorded their responses on a laptop. Prior research with adolescents has revealed that there is a large amount of self-disclosure bias when questions about sensitive behavior are directly asked by an interviewer; consequently, methods of interviewing that grant the participant a greater sense of privacy have been found to increase reporting rates. In particular, previous research with adolescents has found that the Audio-CASI method of interviewing reduces the impact of both interviewer and parental influences on the participants' responses to sensitive questions (Supple, Aquilino, & Wright, 1999; Turner, Ku, Rogers, Lindberg, Pleck, & Sonenstein, 1998).

Participants

The present study utilized the public-use Add Health data, a subset of the full, restricted-use dataset. The public-use dataset contains one half of the core sample and one half of the well educated African-American oversample, chosen at random. At Wave 1, there are 6503 total participants in the public-use dataset, and at Wave 3, there are

4882. In the present study, a portion of the participants were excluded from the data analysis because they did not indicate a sexual attraction to either gender (Wave 1: $n = 847$, 13%; Wave 3: $n = 160$, 3.3%). In addition, two ethnic subgroups were excluded because of the small sample size of their group: American Indians (Wave 1: $n = 38$, 0.6%; Wave 3: $n = 41$, 0.8%) and “Other” (Wave 1: $n = 47$, 0.7%; this category was not included at Wave 3). The final sample (Wave 1: $n = 5586$; Wave 3: $n = 4681$) ranged in age from 11 to 21 ($M = 15.57$, $SD = 1.72$) at Wave 1 and 18 to 28 ($M = 21.82$, $SD = 1.81$) at Wave 3. There were slightly more female participants (Wave 1: $n = 2938$; Wave 3: $n = 2531$) than male participants (Wave 1: $n = 2648$; Wave 3: $n = 2150$). The participants were predominantly white (Wave 1: $n = 3315$; Wave 3: $n = 2822$), followed by African-American/Black (Wave 1: $n = 1233$; Wave 3: $n = 1042$), Hispanic/Latino/a (Wave 1: $n = 587$; Wave 3: $n = 480$), Asian/Pacific Islander (Wave 1: $n = 171$; Wave 3: $n = 165$), and Multiracial (Wave 1: $n = 280$; Wave 3: $n = 172$). The samples were comprised of more heterosexual participants (Wave 1: $n = 5277$; Wave 3: $n = 4299$) than GLB participants (Wave 1: $n = 380$; Wave 3: $n = 423$).

Measures

Unless otherwise indicated, scale scores were computed for each of the variables by summing the item responses. Higher scores indicate a greater amount of the variable (means and standard deviations for the included variables can be found in Table 1).

Sexual Orientation

There are two questions on the in-home survey that measure romantic attractions; specifically, “Have you ever had a romantic attraction to a female?” and “Have you ever had a romantic attraction to a male?” This allows the distinction among exclusively

heterosexual participants, exclusively homosexual participants, and bisexual participants **t**o be made. Therefore, unlike in a number of previous studies, this system of **c**lassification has the advantage of being able to classify adolescents even if they do not **y**et publicly self-identify as GLB. In the present study, the sexual orientation of the **p**articipants is coded dichotomously (0 = heterosexual, 1 = gay, lesbian, or bisexual) to **e**nsure large enough cell sizes for statistical analysis.

Race/Ethnicity

A measure of race/ethnicity was entered into the regression equations as a control **v**ariable at both Wave 1 and Wave 3. The five racial categories (i.e., Caucasian/White, **A**frican-American/Black, Asian/Pacific Islander, Latino/a, and Multiracial) were dummy **c**oded prior to the analyses. Because the majority of the sample was Caucasian, the other **g**roups were compared to this group when creating the dummy variables (1 = identified **r**acial group, 0 = all other racial groups).

Socioeconomic Status (SES)

An estimate of SES was used as a control variable in the regression equations. At **W**ave 1, SES was assessed by the answer to the following question: “Does [the resident **m**other] receive public assistance, such as welfare?” (0 = no, 1 = yes). At Wave 3, SES **w**as measured by the participant’s response to the following: “Thinking about your **i**ncome and the income of everyone who lives in your household and contributes to the **h**ousehold budget, what was the total household income before taxes in {2000/2001}? **I**nclude all sources of income received by these household members” (total income range: **\$** 1 - \$602,500).

Psychopathology

Depression. Depression was assessed by the participant's response to nine questions about how he or she has felt in the past week, including: "You were bothered by things that usually don't bother you," "You felt that you could not shake off the blues, even with help from your family and your friends," "You felt that you were just as good as other people (reverse scored)," "You had trouble keeping your mind on what you were doing," "You felt depressed," "You felt that you were too tired to do things," "You enjoyed life (reverse scored)," "You felt sad," and "You felt that people disliked you" (0 = never or rarely, 1 = sometimes, 2 = a lot of the time, 3 = most of the time or all of the time). The items that the questionnaire uses to assess depressive symptoms are drawn from the CES-D scale, a 20-item self-report depression measure. For the nine items that were included at both Wave 1 and Wave 3, Cronbach's alpha is 0.78 at Wave 1 and 0.81 at Wave 3.

Suicidality. Suicidal ideation was measured by the response to the following question: "During the past 12 months, did you ever seriously think about committing suicide" (0 = no, 1 = yes).

Substance Use and Abuse

Smoking cigarettes. Smoking was indicated by the number of cigarettes a participant smoked in past 30 days. This was calculated by multiplying the responses to the following questions: "During the past 30 days, on how many days did you smoke cigarettes" (days range: 0 – 30) and "During the past 30 days, on the days you smoked, how many cigarettes did you smoke each day?" (cigarettes range: 1 – 100).

Alcohol use. Alcohol use was assessed by the number of alcoholic beverages a participant consumed in past 12 months. This was calculated by multiplying the responses to the following questions: “During the past 12 months, on how many days did you drink alcohol” (0 = none, 1 = 1 or 2 days in the past 12 months, 2 = once a month or less (3 to 12 times in the past 12 months), 3 = 2 or 3 days per month, 4 = 1 or 2 days per week, 5 = 3 to 5 days per week, 6 = every day or almost every day) and “Think of all the times you have had a drink during the past 12 months. How many drinks did you usually have each time? A ‘drink’ is a glass of wine, a can of beer, a wine cooler, a shot glass of liquor, or a mixed drink” (drink range: 1 – 18).

Alcohol intoxication. Alcohol intoxication was calculated using the following question: “Over the past 12 months, on how many days have you gotten drunk or ‘very, very high’ on alcohol” (0 = none, 1 = 1 or 2 days in the past 12 months, 2 = once a month or less (3 to 12 times in the past 12 months), 3 = 2 or 3 days a month, 4 = 1 or 2 days a week, 5 = 3 to 5 days a week, 6 = every day or almost every day).

Consequences of alcohol intoxication. The negative consequences of alcohol intoxication were assessed by the responses to the following nine questions: “Over the past 12 months, how many times has each of the following things happened? You got into trouble with your parents because you had been drinking [...] You’ve had problems at school or work because you had been drinking [...] You had problems with your friends because you had been drinking [...] You had problems with someone you were dating because you had been drinking [...] You did something you later regretted because you had been drinking” and “Over the past 12 months, how many times were you hung over [...] were you sick to your stomach or threw up after drinking [...] did you get into a

sexual situation that you later regretted because you had been drinking [...] did you get **i**nto a physical fight because you had been drinking?" (0 = never, 1 = once, 2 = twice, 3 = **3** or 4 times, 4 = 5 or more times; Cronbach's α : Wave 1 = 0.79; Wave 3 = 0.73).

Fighting and Violence

The information about experiences of violence includes questions about fighting, **v**ictimization, witnessing violent behavior, and perpetrating violence; all of the questions **i**n this section refer to the number of times each event occurred in the past 12 months.

Fighting. Fighting is assessed by the response to the following question: "During **t**he past 12 months, how many times were you in a physical fight in which you were **i**njured and had to be treated by a doctor or nurse?" (range: 1 to 56 times).

Victimization. The measure of victimization includes four items: "Someone pulled **a** knife or gun on you," "Someone shot you," "Someone cut or stabbed you," and "You **w**ere jumped" (Wave 1: 0 = never, 1 = once, 2 = more than once; Wave 3: 0 = not **m**arked, 1 = marked; Cronbach's α : Wave 1 = 0.60; Wave 3 = 0.64).

Witnessing violence. The measure of witnessing violent behavior includes the **f**ollowing item: "You saw someone shoot or stab another person" (Wave 1: 0 = never, 1 = **O**nce, 2 = more than once; Wave 3: 0 = not marked, 1 = marked)

Perpetrating violence. Measures of perpetrating violence include the following **t**wo items: "You pulled a knife or gun on someone" and "You shot or stabbed someone" **(**Wave 1: 0 = never, 1 = once, 2 = more than once; Wave 3: 0 = not marked, 1 = marked; **C**ronbach's α : Wave 1 = 0.69; Wave 3 = 0.53).

Social Support

The effect of social support was only examined at Wave 1. At Wave 3, there were only two questions per identified friend because the questions were designed to track the friends who were originally identified at Wave 1, rather than assess the respondent's current level of peer support. Consequently, because there was not an adequate measure of social support at Wave 3, peer support was not included as a variable at Wave 3.

Peer support. The participants were asked to describe their relationships with up to five male friends and up to five female friends. The level of peer support is derived by taking the sum across the friends for the participant's response to five questions: "Did you go to [your friend's] house during the past seven days," "Did you meet [your friend] after school to hang out or go somewhere during the past seven days," "Did you spend time with [your friend] during the past weekend," "Did you talk to [your friend] about a problem during the past seven days," and "Did you talk to [your friend] on the telephone during the past seven days" (0 = no, 1 = yes; Cronbach's $\alpha = 0.89$).

Results

Correlations between sexual orientation and outcome variables

At Wave 1, sexual orientation was significantly correlated with all of the outcome variables. Furthermore, all of the correlations at Wave 1 were in the expected direction (Table 2). At Wave 3, sexual orientation was positively correlated with depression, suicidal ideation, alcohol intoxication, consequences of alcohol intoxication, and being injured during a physical fight. However, at Wave 3, smoking, alcohol use,

victimization, witnessing violence, and perpetrating violence were not significantly correlated with sexual orientation (Table 3).

Wave 1

In order to determine if GLB adolescents exhibited significantly worse outcomes than heterosexual adolescents (*Hypothesis 1*) and if peer support would moderate the relationship between sexual orientation and the outcome variables (*Hypothesis 2*), a series of hierarchical, moderated regressions were performed. For suicidal ideation, which is the only dichotomous outcome variable, a moderated logistic regression was conducted. Prior to being entered into the regression analyses, the moderator (peer support) was mean centered in order to reduce multicollinearity (Aiken & West, 1991). For each of the regression equations, a number of control variables were entered as Step 1: age, gender, race/ethnicity, and an estimate of socioeconomic status. In Step 2, sexual orientation and the peer support variable were entered. Finally, the interaction between sexual orientation and peer support was entered in Step 3 of the regression. The results of the regression analyses can be found in Tables 4, 5, and 6.

Hypothesis 1. Hypothesis 1 proposed that at Wave 1, GLB adolescents would exhibit more psychopathology, more substance use, and more experiences of violence than would heterosexual adolescents (Tables 4, 5, and 6). Consistent with our hypothesis, the results indicated that a GLB sexual orientation was associated with more depression, suicidal ideation, alcohol use, alcohol intoxication, victimization, witnessing violence, and perpetrating violence. There were no significant differences between GLB and heterosexual adolescents on the smoking, negative consequences of alcohol intoxication, or being in a physical fight that resulted in an injury measures.

Hypothesis 2. Hypothesis 2 posited that peer support would moderate the relationship between sexual orientation and the outcome variables at Wave 1. The results indicated that there was a significant interaction between sexual orientation and peer support for three of the outcome variables: smoking, consequences of alcohol intoxication, and requiring medical attention after a fight. For each of the significant interactions, the MODPROBE pick-a-point approach was used to probe the interaction (Hayes & Matthes, 2009). In order to determine whether the impact of the predictor variable is significantly different from zero, the MODPROBE macro estimates the effect of the predictor variable at low, moderate, and high values of the moderator; in other words, the MODPROBE macro was used to conduct an analysis of the simple slopes. In addition, the MODPROBE macro provides several values of $\hat{Y}$ as a function of the moderator and the predictor variable in order to create a graphical representation of the interaction. The results of the hierarchical, moderated regressions can be found in Tables 4, 5, and 6 and the significant interactions are displayed graphically in Figures 1, 2, and 3.

For the smoking outcome variable, GLB adolescents had smoked significantly more cigarettes in the previous 30 days than did heterosexual adolescents at high levels of social support ($b = 68.14$; $t(2073) = 3.29$, $p < 0.01$). There was no significant difference in smoking between GLB and heterosexual adolescents at low ($b = -14.27$; $t(2073) = -0.67$, $p > 0.05$) and moderate ($b = 26.93$; $t(2073) = 1.80$, $p > 0.05$) levels of social support. This suggests that for both GLB and heterosexual adolescents, as the amount of social support increases, the number of cigarettes smoked in the past 30 days also

increases. However, the slope of the regression line for the GLB respondents is steeper than the slope of the regression line for the heterosexual participants (Figure 1).

A similar pattern was found for the negative consequences of alcohol intoxication and being involved in a fight that required medical attention. Specifically, there was no significant difference in the negative consequences of alcohol intoxication between GLB and heterosexual adolescents at low ($b = -0.42$; $t(2313) = -0.89$, $p > 0.05$) and moderate ($b = 0.48$; $t(2313) = 1.44$, $p > 0.05$) levels of peer support. However, GLB adolescents experienced significantly more negative consequences related to alcohol intoxication in the previous 12 months than did heterosexual adolescents at high levels of peer support ($b = 1.38$; $t(2313) = 3.12$, $p < 0.01$). An examination of Figure 2 reveals that while the number of negative consequences of alcohol intoxication remains relatively steady for heterosexual adolescents across the levels of peer support (increasing by less than 1 between low support and high support), the number of negative consequences related to alcohol intoxication increases at a steeper rate for GLB adolescents.

Likewise, at high levels of peer support, GLB adolescents were significantly more likely to have been involved in a fight that required medical attention than were heterosexual adolescents ($b = 4.32$; $t(2624) = 3.87$, $p < 0.001$). There was no significant difference in the likelihood of having been involved in a fight that required medical attention between GLB and heterosexual adolescents at low ($b = -1.37$; $t(2624) = -1.13$, $p > 0.05$) and moderate ($b = 1.47$; $t(2624) = 1.76$, $p > 0.05$) levels of peer support. Figure 3 suggests that for heterosexual adolescents, the frequency of needing medical assistance following a fight remains below one time on average in the past 12 months, regardless of the amount of social support. However, as the level of peer support increases for GLB

adolescents, the average number of times medical attention is required after a fight jumps from less than one time at low peer support to nearly five times in the last 12 months at high levels of peer support.

Wave 3

In order to determine if GLB individuals would also exhibit significantly worse outcomes than heterosexual individuals in young adulthood (*Hypothesis 3*), a series of hierarchical regressions were conducted. For suicidal ideation, which is the only dichotomous outcome variable, a logistic regression was performed. In Step 1, the same four control variables that were identified at Wave 1 were entered into the regression equations. In Step 2, the sexual orientation variable was entered. Because the level of peer support was not adequately assessed at Wave 3, the moderation analyses (Step 3 at Wave 1) were not conducted at Wave 3. The results of the regression analyses can be found in Tables 7, 8, and 9.

Hypothesis 3. Hypothesis 3 proposed that at Wave 3, GLB individuals would exhibit more psychopathology, more substance use, and more experiences of violence than would heterosexual individuals (Tables 7, 8, and 9). The results indicated that while there was not a significant difference between GLB and heterosexual young adults on the measures of alcohol use, alcohol intoxication, smoking, victimization, witnessing violence, perpetrating violence, and being in a physical fight that resulted in an injury, a GLB sexual orientation was associated with more depression, suicidal ideation, and negative consequences of alcohol intoxication. Consistent with our hypothesis, a number of the outcomes were the same at both time points; specifically, at both Waves 1 and 3, GLB participants were more depressed and reported more suicidal ideation than

heterosexual participants. However, at Wave 3, a number of the outcomes (e.g., alcohol use, alcohol intoxication, victimization, witnessing violence, and perpetrating violence) were not significantly different for GLB and heterosexual young adults.

Discussion

The current study was designed to address three primary questions. First, during the developmental period of adolescence, will GLB individuals exhibit more negative outcomes than will heterosexual individuals? Second, is peer support able to moderate the relationship between sexual orientation and negative outcomes? Third, will a GLB sexual orientation also be associated with a more negative outcome at Wave 3, when the participants are young adults?

Negative Psychosocial Outcomes for GLB Adolescents

Our results indicated that during the period of adolescence, GLB persons experienced more negative outcomes than did heterosexual persons across a number of psychosocial domains, a finding that has been well documented in previous research (Besner & Spungin, 1995; Bontempo & D'Augelli, 2002; D'Augelli, 2002; Gray, 1999; Kosciw, 2004; Lipkin, 1995; Russell, Seif, & Truong, 2001; Schneider & Owens, 2000; Unks, 1995; van Wormer & McKinney, 2003; Woog, 1995). Specifically, the prevalence of psychopathology (i.e., depression and suicidal ideation) was significantly higher for GLB adolescents than for heterosexual adolescents. Our results are consistent with a wide body of prior research (D'Augelli, 2002; D'Augelli & Hershberger, 1993; D'Augelli, Hershberger, & Pilkington, 2001; Gonsiorek, 1988; Grossman & Kerner, 1998; King, 1997; Lewinsohn, Rohde, & Seeley, 1996; Remafedi, Farrow, & Deisher, 1991; Russell, 2003; Russell & Joyner, 2001), but it is important to recognize that the

current study utilized a large, nationally representative, community sample, which has not often been done in the previous work with the GLB population. In addition, in the present study, we found that in the 12 months that preceded the survey, GLB adolescents had consumed significantly more alcohol and been intoxicated more frequently than heterosexual adolescents, which is consistent with previous research that has found that GLB adolescents are more likely to use and abuse substances than are heterosexual adolescents (Jordan, 2000; Rostosky et al., 2003; Russell et al., 2002; Uribe & Harbeck, 1992). Furthermore, in accordance with previous research (Jennings, 2000; Russell et al., 2001a), GLB adolescents were significantly more likely to have experienced fighting and violence than were heterosexual adolescents. In particular, our study found in the prior 12 months, GLB adolescents were more likely to have been victimized, to have witnessed violence, and to have perpetrated violence. It is particularly noteworthy that the results of the current study found that GLB adolescents were more likely to perpetrate violence than were heterosexual adolescents as only one previous study has investigated the relationship between sexual orientation and the perpetration of violence (Russell et al., 2001a).

Moderating Effect of Social Support

Much of the literature suggests that the poor outcomes observed in GLB individuals may be due to a lack of social support (D'Augelli & Hart, 1987; Gonsiorek, 1988; Radkowsky & Siegel, 1997; Russell et al., 2001b). Nonetheless, very few of the studies with GLB adolescents have empirically investigated this relationship. The current study was able to address this gap in the extant literature by examining the interaction between sexual orientation and the level of peer support on a number of outcomes. In

particular, the current study hypothesized that peer support would moderate the relationship between a homosexual or bisexual romantic attraction and subsequent psychopathology, substance use, and experiences of violence. However, we were unable to support our hypothesis. Rather, the results indicated that while the interaction between sexual orientation and peer support was significant for three of the ten outcome variables (i.e., smoking, consequences of alcohol intoxication, and requiring medical attention after a fight), a high level of peer support was actually associated with a more negative outcome for the GLB adolescents.

For the three significant interactions (i.e., smoking, negative consequences of alcohol intoxication, and requiring medical attention following a physical fight), the results indicated that although there was not a significant difference between GLB adolescents and heterosexual adolescents at low and moderate levels of peer support, the GLB adolescents were significantly more likely to exhibit negative outcomes at high levels of peer support. Specifically, when peer support was high, GLB adolescents smoked more cigarettes, experienced more negative outcomes of alcohol intoxication, and were more likely to seek medical attention after a physical fight than heterosexual adolescents. This pattern of findings is contrary to what we expected to find. In other words, because previous research (D'Augelli & Hart, 1987; Gonsiorek, 1988; Radkowsky & Siegel, 1997; Russell et al., 2001b) has suggested that social support may serve a protective function for GLB adolescents, it was initially surprising to find more negative outcomes as social support increased. However, it is important to recognize that rather than gauging *peer support*, it is possible that we were actually measuring *peer involvement*. In other words, because the majority of the questions asked about the

respondents' identified friends assessed the amount of time spent together outside of school, it may be more accurate to conceptualize this as a measure of peer involvement, or popularity. This distinction may be important because there is a body of research on the correlates of popularity in mainstream adolescents that indicates that popular adolescents may be more inclined to engage in mild delinquent behavior (Santor, Messervey, & Kusumakar, 2000). Accordingly, these results may reflect a tendency for popular GLB adolescents to engage in more mildly delinquent behavior in an attempt to maintain their high level of social support.

Previous research (Alexander, Piazza, Mekos, & Valente, 2001; Kristjanssona, Sigfusdottira, Jamesa, Allegrantea, & Helgasona, 2010; Nichter, Nichter, Vuckovic, Quintero, & Ritenbaugh, 1997) has repeatedly found a relationship between popularity and cigarette smoking in adolescence. Specifically, Kobus (2003) suggested that adolescents often experience an internal pressure to smoke cigarettes in an attempt to gain social approval and avoid being excluded by peers. Thus, because GLB adolescents often find it difficult to assimilate to the peer group because of their sexual orientation, GLB adolescents may feel an increased internal pressure to smoke cigarettes in order to gain social standing. Further, because the nicotine in cigarettes is highly addictive, it may result in a situation in which the number of cigarettes smoked increases greatly over time.

In addition, it is important to note that although GLB adolescents did not consume significantly more alcohol than did heterosexual adolescents with a high level of peer involvement, GLB adolescents experienced more negative consequences of alcohol intoxication than did heterosexual adolescents. This may suggest that while GLB

adolescents do not consume a larger amount of alcohol at high levels of peer involvement, they may be more likely to consume alcohol in a way (e.g., binge drinking, becoming intoxicated) that leaves them more vulnerable to experiencing negative consequence of alcohol intoxication. For example, previous research (Kristjansson et al., 2010) has found that getting drunk is related to perceptions of peer pressure, the desire to conform to the social group, and the belief that consuming alcohol may help one gain the respect of their peers. Thus, it is possible that GLB adolescents may use the excessive consumption of alcohol in order to better assimilate to their peer group, which may leave them more likely to experience the detrimental side effects that often accompany alcohol intoxication.

Furthermore, an increase in peer involvement may simply provide GLB adolescents with more opportunities to engage in physical altercations that escalate to such a degree that the individual must seek medical attention. In other words, because a physical fight that occurs within the confines of the middle school or high school setting is often stopped by the school's staff before it can reach the point where someone is seriously injured, it is possible that an increased social connection with one's peers will place an adolescent in more unsupervised situations in which a serious fight can erupt. Because aggression has been found to be positively related to social status by middle school (Rose, Swenson, & Waller, 2004), it is possible that GLB adolescents may utilize more overt aggression in an attempt to cement their social status.

Negative Psychosocial Outcomes for GLB Young Adults

We hypothesized that the increased prevalence of negative outcomes would also be found in young adulthood, and that GLB individuals would once again exhibit

significantly worse outcomes than heterosexual individuals at Wave 3. However, this hypothesis was only supported for a small number of the outcome variables.

At Wave 3, GLB young adults reported significantly more psychopathology than did heterosexual young adults. Specifically, in accordance with previous research (Cochran & Mays, 2000; Cochran, Sullivan, & Mays, 2003; Sandfort, de Graaf, Bijl, & Schnabel, 2001), GLB participants reported significantly more depressive symptoms than did heterosexual participants. In addition, GLB young adults reported more suicidal ideation than did heterosexual young adults. This finding is consistent with a wide body of literature that has found a higher rate of suicidal ideation, suicide attempts, and completed suicides in GLB youth (D'Augelli, 2002; D'Augelli & Hershberger, 1993; D'Augelli, Hershberger, & Pilkington, 2001; Grossman & Kerner, 1998; King, 1997; Lewinsohn, Rohde, & Seeley, 1996; Paul et al., 2002).

While GLB young adults experience significantly more negative consequences of alcohol intoxication than heterosexual young adults, there is no significant difference between GLB participants and heterosexual participants on measures of smoking, alcohol use, and alcohol intoxication. Previous research with GLB college students has found mixed results on the prevalence of substance use among GLB individuals. However, the majority of the research has suggested that gay, lesbian, and bisexual male college students do not smoke (Eisenberg & Wechsler, 2003a; Eisenberg & Wechsler, 2003b), binge drink (Eisenberg & Wechsler, 2003a; Eisenberg & Wechsler, 2003b), or consume alcohol (McCabe, Boyd, Hughes, & d'Arcy, 2003) significantly more than do heterosexual college students. In the current study, we are unable to determine why GLB young adults endorse significantly more negative consequences of alcohol intoxication

compared to heterosexual young adults. However, this tendency for GLB young adults to experience significantly more negative consequences of alcohol intoxication than heterosexual young adults warrants more attention by researchers.

Finally, at Wave 3, there were no significant differences between the GLB and heterosexual participants on any of the fighting or experiences of violence outcome measures. It is possible that the lack of significant differences between GLB and heterosexual young adults is an artifact of no longer being restricted by the confines of the high school environment. In other words, once the participants are no longer within the high school setting, there is more freedom to select one's surroundings as well as the individuals with whom one elects to associate. It is possible, therefore, that by young adulthood, GLB individuals less frequently find themselves in situations in which they are targeted because of their sexual orientation. Further, this may be an artifact of age. As individuals progress from adolescence to young adulthood, acts of overt aggression are perceived less favorably by one's peers (Brown & Larson, 2009). Thus, there may no longer be a social advantage for GLB young adults to use overt forms of aggression.

Limitations and Future Directions

The current study utilizes a large nationally representative longitudinal dataset to examine both the effect of peer support on a number of psychosocial outcomes for GLB adolescents as well as to explore the differences in the outcome variables when the participants are adolescents and young adults. However, despite the current study's contribution to the extant literature, there are a few limitations to note.

First and foremost, there is no direct measure of sexual orientation in the Add Health Wave 1 questionnaire. In other words, romantic attraction to the same gender,

opposite gender, or both genders was used as a proxy for self-identified sexual orientation. This can be viewed as a limitation of the current research because it limits the ability to compare the results of the current study with previous research that uses self-identified sexual orientation to classify its participants. However, more recent research with GLB populations is often choosing to use measures of same, opposite, or both gender desire, attraction, and relationships as indicators of sexual orientation due in part to the influence of the previous research with sexual orientation using the Add Health data (Russell, 2006). Because this system of classification has the advantage of being able to identify adolescents even if they do not yet publicly self-identify as GLB, future research with sexually diverse youth should consider utilizing a combination of self-identification and desire, attraction, and relationships to classify participants.

Second, across the ten outcome variables, the effect sizes were generally small (particularly given the size of our dataset). However, this finding does not necessarily imply that the results of the present study do not have meaningful real world implications. In other words, because the outcomes included in this study can have dramatic and long-lasting consequences (e.g., lifelong struggles with mental health and problematic substance use), even a small difference may be consequential. Furthermore, our effect sizes are comparable to those found in previous research with community samples of this understudied population (Caldwell, Kivel, Smith, & Hays, 1998; Reis & Saewyc, 1999; Robin, Brener, Donahue, Hack, Hale, & Goodenow, 2004; Rostosky et al., 2003).

In addition, conducting secondary data analysis with an existing dataset can make it difficult to examine a particular research question because it may not be possible to

directly measure all of the variables. For example, the Add Health questionnaire bases its depression questions on the CES-D scale; however, because not all of the items from the scale are included on the questionnaire, it is not possible to use the criteria for the CES-D to label the participants as “depressed” or “not depressed.” Furthermore, the questions that are included on the questionnaire limit the research questions that can be asked. For instance, while the data indicated that GLB adolescents were more likely to experience victimization, witness violence, and perpetrate violence than were heterosexual adolescents, it was not possible to determine if this difference was due to the impact of being bullied or targeted due to one’s sexual orientation. Thus, future research is needed to examine the potential reasons for the increased experiences of fighting and violence that were found in this study as well as previous research (DuRant, Krowchuck, & Sinal, 1998; Russell et al., 2001a).

Finally, there is a concern with all self-report survey research of a response bias. However, prior research investigating the response patterns of adolescents suggests that even when they are being asked sensitive questions (e.g., about substance use), adolescents generally answer in an open and truthful manner (Akers, Massey, & Clarke, 1983; Winters, Stinchfield, Henly, & Schwartz, 1990). Furthermore, Add Health utilized an audio computer-aided self-interview (Audio-CASI) to ask the participants about sensitive topics, which grants the participant a greater sense of privacy and has been found to increase reporting rates in adolescents (Supple et al., 1999; Turner et al., 1998). However, it is important to note that adolescents may not be entirely truthful in their response to the questions about romantic attraction, particularly if they have been attracted to someone of the same gender. It is therefore possible that our findings may be

attenuated by the propensity for adolescents to underreport same-sex romantic attraction. Consequently, future research should consider using more complex research designs that utilize multiple methods of collecting data or multiple reporters in order to more completely investigate the experiences of GLB youth.

Conclusion

The current study is one of the first to investigate the experiences of GLB adolescents at more than one time point using a nationally representative longitudinal dataset. Our results indicate that although GLB adolescents are more likely than heterosexual adolescents to experience a wide range of negative outcomes (i.e., depression, suicidal ideation, alcohol use, alcohol intoxication, victimization, witnessing violence, and perpetrating violence), these results generally are not found in young adulthood (with the exceptions of depression and suicidal ideation). Furthermore, although previous research has suggested that peer support may serve a protective function for GLB adolescents, our results indicated that a high level of social support was associated with more smoking, negative consequences of alcohol intoxication, and requiring medical attention following a physical fight. This study highlights the need for future research that is explicitly designed to directly investigate the experiences of GLB youth.

Table 1

Means and standard deviations for the included variables

		Wave 1			Wave 3		
		Heterosexual	GLB	Total	Heterosexual	GLB	Total
Depression	<i>M</i>	5.71	6.45	5.76	4.26	6.16	4.43
	<i>SD</i>	4.22	4.46	4.24	3.95	4.54	4.04
Suicidal Ideation	<i>M</i>	0.13	0.21	0.13	0.05	0.20	0.06
	<i>SD</i>	0.34	0.41	0.34	0.22	0.40	0.25
Alcohol Use	<i>M</i>	12.54	17.69	12.93	13.95	13.19	13.88
	<i>SD</i>	25.38	34.08	26.17	15.14	11.04	14.79
Alcohol Intoxication	<i>M</i>	1.31	1.74	1.34	1.56	1.78	1.58
	<i>SD</i>	1.47	1.72	1.50	1.46	1.50	1.46
Consequences of Intoxication	<i>M</i>	3.28	4.14	3.35	3.27	4.12	3.35
	<i>SD</i>	4.21	5.56	4.33	3.81	4.79	3.93
Smoking	<i>M</i>	99.53	143.92	103.20	313.35	304.13	312.13
	<i>SD</i>	196.96	239.68	201.15	300.44	270.94	296.63

Table 1 (cont'd)

Victimization	<i>M</i>	0.36	0.60	0.37	0.12	0.16	0.12
	<i>SD</i>	0.88	1.27	0.91	0.49	0.61	0.50
Witnessing Violence	<i>M</i>	0.16	0.24	0.16	0.05	0.06	0.05
	<i>SD</i>	0.44	0.55	0.45	0.23	0.25	0.23
Perpetrating Violence	<i>M</i>	0.08	0.18	0.09	0.02	0.03	0.02
	<i>SD</i>	0.41	0.67	0.43	0.15	0.21	0.15
Injury from Fight	<i>M</i>	0.51	1.87	0.62	0.06	0.22	0.08
	<i>SD</i>	7.81	23.23	9.83	0.50	2.81	0.97
Peer Support	<i>M</i>	8.45	8.92	8.48	-	-	-
	<i>SD</i>	6.54	6.43	6.53	-	-	-

Table 2

Correlations and reliability coefficients for the variables included at Wave 1

	1	2	3	4	5	6	7	8	9	10
1 Depression	<i>0.79</i>									
2 Suicidal Ideation	0.33**	-								
3 Smoking	0.10**	0.07**	-							
4 Alcohol Use	0.08**	0.07*	0.16**	-						
5 Alc. Intoxication	0.10**	0.07**	0.23**	0.44**	-					
6 Consequ.of Intox.	0.16**	0.12**	0.20**	0.38**	0.58**	0.79				
7 Injury from Fight	0.00	0.03	0.02	0.08**	0.12**	0.08**	-			
8 Victimization	0.14**	0.12**	0.11**	0.17**	0.20**	0.26**	0.12**	0.60		
9 Witnessing Vio.	0.13**	0.10**	0.05**	0.08**	0.14**	0.16**	0.11**	0.49**	-	
10 Perpetrating Vio.	0.11**	0.10**	0.08**	0.14**	0.18**	0.22**	0.12**	0.52**	0.38**	0.69

Note: Where applicable, the reliability coefficients are provided in italics along the diagonal; * $p < .05$ ** $p < .01$

Table 2 (cont'd)

	1	2	3	4	5	6	7	8	9	10
11 Age	0.11**	0.03**	0.18**	0.12**	0.16**	0.12**	-0.03	0.05**	0.05**	0.03*
12 Gender	0.15**	0.09**	-0.05**	-0.09**	-0.11**	-0.06**	-0.04*	-0.21**	-0.08**	-0.11**
13 SES	0.12**	0.04**	0.00	0.02	-0.06**	0.07**	0.01	0.08**	0.10**	0.09**
14 Black	0.04**	-0.06**	-0.14**	-0.08**	0.06**	-0.07**	0.01	0.06**	0.14**	0.06**
15 Asian	0.05**	0.02	-0.04*	-0.03	-0.05**	-0.04*	-0.01	-0.01	0.00	-0.01
16 Latino	0.06**	0.01	-0.05**	0.03*	-0.01	0.01	0.00	0.06**	0.08**	0.04**
17 Multiracial	0.03*	0.03*	-0.01	0.01	-0.01	0.01	-0.01	0.03*	0.05**	0.02
18 Sexual Orientation	0.04**	0.06**	0.06**	0.05**	0.08**	0.05**	0.04*	0.07**	0.05**	0.06**
19 Peer Support	0.04**	0.04**	0.14**	0.05**	0.13**	0.13**	0.06**	0.08**	0.07**	0.06**

Note: Where applicable, the reliability coefficients are provided in italics along the diagonal; * $p < .05$ ** $p < .01$

Table 2 (cont'd)

	11	12	13	14	15	16	17	18	19
11 Age	-								
12 Gender	-0.04**	-							
13 SES	-0.03*	0.01	-						
14 Black	0.01	0.00	0.07**	-					
15 Asian	0.02	-0.01	-0.01	-0.10**	-				
16 Latino	0.01	0.00	0.10**	-0.19**	-0.06**	-			
17 Multiracial	-0.02	0.01	0.04**	-0.12**	-0.04**	-0.08**	-		
18 Sexual Orientation	0.03*	-0.06**	0.01	0.00	-0.01	0.02	0.00	-	
19 Peer Support	0.16**	0.03*	-0.01	-0.10**	0.00	0.01	-0.02	0.02	0.89

Note: Where applicable, the reliability coefficients are provided in italics along the diagonal; * $p < .05$ ** $p < .01$

Table 3

Correlations and reliability coefficients for the variables included at Wave 3

	1	2	3	4	5	6	7	8	9	10
1 Depression	<i>0.81</i>									
2 Suicidal Ideation	0.25**	-								
3 Smoking	0.00	0.04	-							
4 Alcohol Use	0.03	0.06**	0.08**	-						
5 Alc. Intoxication	0.04*	0.11**	0.05	0.56**	-					
6 Consequ.of Intox.	0.11**	0.11**	0.00	0.42**	0.59**	0.73				
7 Injury from Fight	0.07**	0.03	0.01	0.01	0.00	0.13**	-			
8 Victimization	0.10**	0.09**	0.04	0.13**	0.08**	0.16**	0.24**	0.64		
9 Witnessing Vio.	0.08**	0.04**	-0.03	0.09**	0.03	0.09**	0.08**	0.44**	-	
10 Perpetrating Vio.	0.10**	0.06**	0.02	0.04*	0.02	0.07**	0.28**	0.44**	0.31**	0.53

Note: Where applicable, the reliability coefficients are provided in italics along the diagonal; * $p < .05$ ** $p < .01$

Table 3 (cont'd)

	1	2	3	4	5	6	7	8	9	10
11 Age	-0.03	-0.07**	0.04	-0.07**	-0.09**	-0.05**	-0.01	-0.04*	-0.03	0.00
12 Gender	0.11**	0.01	-0.09**	-0.27**	-0.24**	-0.17**	-0.06**	-0.14**	-0.11**	-0.07**
13 SES	-0.07*	0.06	-0.04	0.01	0.09**	0.13**	-0.01	0.00	-0.05	0.03
14 Black	0.05**	-0.02	-0.18**	-0.12**	-0.17**	-0.13**	0.03*	0.03*	0.15**	0.05**
15 Asian	0.02	-0.03*	-0.07**	-0.05**	-0.03	0.00	0.05**	-0.02	-0.02	0.00
16 Latino	0.06**	0.02	-0.07**	0.01	-0.02	0.01	-0.01	0.03	0.01	0.01
17 Multiracial	0.02	0.01	0.02	-0.02	0.00	-0.01	0.00	0.03	0.01	-0.01
18 Sexual Orientation	0.13**	0.17**	-0.01	-0.02	0.05**	0.07**	0.05**	0.02	0.01	0.02

Note: Where applicable, the reliability coefficients are provided in italics along the diagonal; * $p < .05$ ** $p < .01$

Table 3 (cont'd)

	11	12	13	14	15	16	17	18
11 Age	-							
12 Gender	-0.06**	-						
13 SES	-0.05	-0.02	-					
14 Black	0.00	0.02	-0.13**	-				
15 Asian	0.03*	-0.02	0.05	-0.10**	-			
16 Latino	0.01	-0.01	-0.06*	-0.18**	-0.07**	-		
17 Multiracial	-0.03*	0.01	0.05	-0.11**	-0.04*	-0.07**	-	
18 Sexual Orientation	-0.03*	0.12**	0.05	-0.03*	-0.03	0.02	0.01	-

Note: Where applicable, the reliability coefficients are provided in italics along the diagonal; * $p < .05$ ** $p < .01$

Table 4

Regressions for psychopathology outcome variables at Wave 1

		Depression		Suicidal Ideation		
		B	β	B	Lower	Odds Ratio Upper
Step 1.		Adj $R^2 = 0.056^{***}$		Model $\chi^2 = 66.85^{***}$		
	Age	0.23	0.09***	0.02	0.97	1.02 1.07
	Gender	1.43	0.17***	0.55***	1.46	1.74 2.08
	SES	1.67	0.11***	0.46**	1.21	1.58 2.07
	Black	0.26	0.02	-0.38**	0.54	0.68 0.86
	Asian	1.59	0.06***	0.22	0.78	1.25 2.00
	Latino	1.04	0.07***	0.08	0.82	1.08 1.43
	Multiracial	0.70	0.04*	0.19	0.84	1.20 1.72
Step 2.		Adj $R^2 = 0.059$ $\Delta R^2 = 0.003^{***}$		Step $\chi^2 = 16.91^{***}$ Model $\chi^2 = 83.76^{***}$		
	Age	0.22	0.09***	0.01	0.96	1.01 1.06
	Gender	1.45	0.17***	0.57***	1.49	1.77 2.12
	SES	1.65	0.11***	0.45**	1.19	1.56 2.04
	Black	0.28	0.03	-0.36**	0.55	0.70 0.88
	Asian	1.62	0.06***	0.25	0.80	1.28 2.04
	Latino	1.03	0.07***	0.07	0.81	1.07 1.41
	Multiracial	0.72	0.04*	0.20	0.85	1.22 1.75
	Sexual Orientation	0.98	0.06***	0.63***	1.39	1.88 2.52
	Peer Support	0.01	0.01	0.01	0.99	1.01 1.02

Table 4 (cont'd)

Step 3.	Adj $R^2 = 0.060$ $\Delta R^2 = 0.001$			Step $\chi^2 = 0.67$ Model $\chi^2 = 84.43^{***}$		
Age	0.22	0.09***	0.01	0.96	1.01	1.07
Gender	1.46	0.17***	0.58***	1.49	1.78	2.13
SES	1.65	0.11***	0.45**	1.19	1.56	2.04
Black	0.28	0.03	-0.36**	0.55	0.70	0.88
Asian	1.62	0.06***	0.24	0.80	1.28	2.04
Latino	1.03	0.07***	0.07	0.81	1.07	1.41
Multiracial	0.72	0.04*	0.20	0.85	1.22	1.75
Sexual Orientation	1.02	0.06***	0.64***	1.41	1.90	2.56
Peer Support	0.01	0.02	0.01	1.00	1.01	1.02
Orientation x Support	-0.07	-0.03	-0.02	0.94	0.98	1.03

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Table 5

Regressions for substance use outcome variables at Wave 1

	Alcohol Use		Alcohol Intoxication		Consequences of Alcohol Intoxication		Smoking	
	B	β	B	β	B	β	B	β
Step 1.								
	Adj $R^2 = 0.029^{***}$		Adj $R^2 = 0.052^{***}$		Adj $R^2 = 0.033^{***}$		Adj $R^2 = 0.052^{***}$	
Age	1.96	0.12***	0.15	0.16***	0.33	0.12***	19.15	0.16***
Gender	-4.78	-0.09***	-0.28	-0.10***	-0.41	-0.05*	-21.95	-0.06**
SES	4.20	0.05*	0.48	0.09***	1.53	0.10***	8.51	0.01
Black	-5.17	-0.07***	-0.42	-0.10***	-1.23	-0.11***	-95.28	-0.16***
Asian	-4.60	-0.03	-0.40	-0.05*	-0.84	-0.03	-62.88	-0.05*
Latino	0.89	0.01	-0.19	-0.04	-0.28	-0.02	-42.14	-0.06**
Multiracial	-2.04	-0.02	-0.31	-0.05*	-0.39	-0.02	-14.08	-0.02

Table 5 (cont'd)

Step 2.

	Adj R ² = 0.030 $\Delta R^2 = 0.002$	Adj R ² = 0.067 $R^2 = 0.016^{***}$	Adj R ² = 0.042 $\Delta R^2 = 0.010^{***}$	Adj R ² = 0.064 $\Delta R^2 = 0.012^{***}$
Age	1.90 0.12***	0.14 0.15***	0.30 0.12***	17.55 0.14***
Gender	-4.79 -0.09***	-0.29 -0.10***	-0.44 -0.05*	-23.37 -0.06**
SES	4.15 0.05*	0.48 0.09***	1.52 0.10***	8.80 0.01
Black	-4.91 -0.07***	-0.36 -0.10***	-1.09 -0.09***	-87.65 -0.15***
Asian	-4.46 -0.03	-0.38 -0.04*	-0.80 -0.03	-65.14 -0.05*
Latino	0.87 0.01	-0.19 -0.04	-0.27 -0.02	-42.22 -0.06**
Multiracial	-2.02 -0.02	-0.30 -0.04*	-0.36 -0.02	-11.64 -0.01
Sexual Orientation	4.20 0.04*	0.40 0.07***	0.55 0.03	28.27 0.04
Peer Support	0.08 0.02	0.02 0.11***	0.06 0.10***	2.95 0.10***

Step 3.

	Adj R ² = 0.030 $\Delta R^2 = 0.001$	Adj R ² = 0.067 $\Delta R^2 = 0.000$	Adj R ² = 0.045 $\Delta R^2 = 0.003^{**}$	Adj R ² = 0.067 $\Delta R^2 = 0.003^{**}$
Age	1.91 0.12***	0.14 0.15***	0.30 0.11***	17.29 0.14***
Gender	-4.74 -0.09***	-0.29 -0.10***	-0.45 -0.05*	-23.93 -0.06**
SES	4.14 0.05*	0.48 0.09***	1.52 0.10***	8.39 0.01
Black	-4.88 -0.07***	-0.36 -0.09***	-1.10 -0.09***	-87.66 -0.15***
Asian	-4.44 -0.03	-0.38 -0.04*	-0.79 -0.03	-63.56 -0.05*
Latino	0.91 0.01	-0.19 -0.04	-0.27 -0.02	-43.02 -0.07**

Table 5 (cont'd)

Multiracial	-2.04	-0.02	-0.30	-0.04*	-0.34	-0.02	-11.84	-0.01
Sexual Orientation	4.69	0.05*	0.42	0.07***	0.33	0.02	20.00	0.03
Peer Support	0.10	0.03	0.02	0.11***	0.05	0.08***	2.45	0.09***
Orientation x Support	-0.36	-0.03	-0.01	-0.01	0.13	0.06**	6.00	0.06**

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Table 6

Regressions for experiences of violence outcome variables at Wave 1

	Victimization		Witnessing Violence		Perpetrating Violence		Injury from Physical Fight	
	B	β	B	β	B	β	B	β
Step 1.	Adj R ² = 0.066***		Adj R ² = 0.057***		Adj R ² = 0.029***		Adj R ² = 0.000	
Age	0.00	0.01	0.01	0.02	0.00	0.01	-0.10	-0.01
Gender	-0.38	-0.22***	-0.07	-0.08***	-0.09	-0.10***	-0.82	-0.04
SES	0.29	0.09***	0.14	0.09***	0.15	0.10***	-0.23	-0.01
Black	0.16	0.08***	0.18	0.17***	0.07	0.07***	-0.47	-0.02
Asian	0.06	0.01	0.06	0.02	0.04	0.01	-0.45	-0.01
Latino	0.24	0.08***	0.19	0.13***	0.07	0.05**	0.22	0.01
Multiracial	0.17	0.04**	0.16	0.08***	0.06	0.03*	-0.51	-0.01

Table 6 (cont'd)

Step 2.		Adj $R^2 = 0.071$ $\Delta R^2 = 0.005^{***}$	Adj $R^2 = 0.061$ $\Delta R^2 = 0.004^{***}$	Adj $R^2 = 0.034$ $\Delta R^2 = 0.005^{***}$	Adj $R^2 = 0.001$ $\Delta R^2 = 0.002^*$
Age	0.00	0.00	0.01	0.00	-0.13
Gender	-0.38	-0.22^{***}	-0.07	-0.10^{***}	-0.82
SES	0.29	0.09^{***}	0.14	0.15	-0.29
Black	0.18	0.08^{***}	0.19	0.08^{***}	-0.36
Asian	0.06	0.01	0.06	0.04	-0.38
Latino	0.24	0.08^{***}	0.19	0.07	0.23
Multiracial	0.18	0.05^{**}	0.17	0.06	-0.45
Sexual Orientation	0.16	0.05^{**}	0.07	0.09	1.72
Peer Support	0.01	0.06^{***}	0.00	0.00	0.05
Step 3.		Adj $R^2 = 0.071$ $\Delta R^2 = 0.000$	Adj $R^2 = 0.061$ $\Delta R^2 = 0.000$	Adj $R^2 = 0.033$ $\Delta R^2 = 0.000$	Adj $R^2 = 0.009$ $\Delta R^2 = 0.005^{***}$
Age	0.00	0.00	0.01	0.00	-0.14
Gender	-0.38	-0.22^{***}	-0.07	-0.09	-0.88
SES	0.29	0.09^{***}	0.14	0.15	-0.28
Black	0.18	0.08^{***}	0.19	0.08^{***}	-0.35
Asian	0.06	0.01	0.06	0.04	-0.38
Latino	0.24	0.08^{***}	0.19	0.07	0.28

Table 6 (cont'd)

Multiracial	0.18	0.05**	0.17	0.08***	0.06	0.03*	-0.43	-0.01
Sexual Orientation	0.16	0.04**	0.07	0.04*	0.09	0.05***	1.40	0.03
Peer Support	0.01	0.05***	0.00	0.05***	0.00	0.04**	0.01	0.01
Orientation x Support	0.01	0.02	0.00	0.01	0.00	0.01	0.44	0.07***

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Table 7

Regressions for psychopathology outcome variables at Wave 3

	Depression		Suicidal Ideation			
	B	β	B	Lower	Odds Ratio	Upper
Step 1.	Adj $R^2 = 0.009^*$		Model $\chi^2 = 16.96^*$			
Age	-0.03	-0.01	-0.15*	0.76	0.86	0.98
Gender	0.65	0.08*	-0.35	0.45	0.70	1.09
SES	0.00	-0.06	0.00	1.00	1.00	1.00
Black	0.32	0.03	-0.69*	0.26	0.50	0.96
Asian	0.97	0.05	-0.42	0.20	0.66	2.21
Latino	0.49	0.04	-0.02	0.53	0.98	1.82
Multiracial	0.86	0.04	0.22	0.42	1.25	3.73
Step 2.	Adj $R^2 = 0.029$ $\Delta R^2 = 0.021^{***}$		Step $\chi^2 = 27.81^{***}$ Model $\chi^2 = 44.77^{***}$			
Age	-0.03	-0.01	-0.16*	0.75	0.85	0.97
Gender	0.52	0.06*	-0.57*	0.35	0.56	0.90
SES	0.00	-0.07*	0.00	1.00	1.00	1.00
Black	0.36	0.04	-0.68*	0.26	0.51	0.98
Asian	0.95	0.05	-0.54	0.17	0.59	2.04
Latino	0.49	0.04	-0.06	0.50	0.94	1.77
Multiracial	0.75	0.03	0.12	0.37	1.12	3.46
Sexual Orientation	2.26	0.15***	1.72***	3.10	5.58	10.07

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Table 8

Regressions for substance use outcome variables at Wave 3

	Alcohol Use		Alcohol Intoxication		Consequences of Alcohol Intoxication		Smoking	
	B	β	B	β	B	β	B	β
Step 1.								
	Adj $R^2 = 0.091^{***}$		Adj $R^2 = 0.104^{***}$		Adj $R^2 = 0.062^{***}$		Adj $R^2 = 0.065^{***}$	
Age	-0.41	-0.04	-0.05	-0.06	-0.10	-0.05	12.22	0.06
Gender	-9.22	-0.27^{***}	-0.71	-0.23^{***}	-1.32	-0.17^{***}	-108.41	-0.15^{**}
SES	0.00	0.00	0.00	0.07*	0.00	0.12^{**}	0.00	-0.08
Black	-3.83	-0.09*	-0.74	-0.19^{***}	-1.22	-0.12^{**}	-206.82	-0.21^{***}
Asian	-7.31	-0.09^{**}	-0.35	-0.04	-0.77	-0.04	-128.48	-0.08
Latino	-0.10	0.00	-0.27	-0.06	-0.38	-0.03	-118.36	-0.10
Multiracial	-6.88	-0.07*	-0.74	-0.08*	-1.46	-0.07	179.77	0.09

Table 8 (cont'd)

Step 2.

	Adj R ² = 0.090 ΔR ² = 0.000	Adj R ² = 0.105 ΔR ² = 0.003	Adj R ² = 0.072 ΔR ² = 0.011**	Adj R ² = 0.063 ΔR ² = 0.001				
Age	-0.42	-0.04	-0.06	-0.11	-0.05	11.95	0.06	
Gender	-9.28	-0.27***	-0.73	-0.24***	-1.44	0.184***	-113.72	-0.16**
SES	0.00	0.00	0.00	0.07	0.00	0.12**	0.00	-0.08
Black	-3.83	-0.09*	-0.75	-0.19***	-1.23	-0.12**	-205.28	-0.21***
Asian	-7.33	-0.09**	-0.36	-0.05	-0.81	-0.04	-128.36	-0.08
Latino	-0.09	0.00	-0.27	-0.06	-0.35	-0.03	-116.12	-0.09
Multiracial	-6.93	-0.07*	-0.77	-0.09*	-1.59	-0.07*	178.70	0.09
Sexual Orientation	0.80	0.01	0.31	0.05	1.58	0.11**	36.37	0.03

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Table 9

Regressions for experiences of violence outcome variables at Wave 3

	Victimization		Witnessing Violence		Perpetrating Violence		Injury from Physical Fight	
	B	β	B	β	B	β	B	β
Step 1.	Adj $R^2 = 0.024^*$		Adj $R^2 = 0.057^{***}$		Adj $R^2 = 0.002$		Adj $R^2 = 0.011^*$	
Age	-0.03	-0.08**	-0.01	-0.11**	0.00	-0.04	0.00	-0.02
Gender	-0.15	-0.13***	-0.06	-0.13***	-0.02	-0.07*	-0.11	-0.12***
SES	0.00	-0.01	0.00	-0.03	0.00	0.03	0.00	0.01
Black	0.05	0.04	0.12	0.21***	0.02	0.04	0.05	0.04
Asian	-0.09	-0.03	0.00	0.00	0.01	0.01	-0.07	-0.03
Latino	0.01	0.00	0.02	0.03	0.00	0.01	-0.03	-0.02
Multiracial	0.24	0.07*	0.06	0.04	0.02	0.02	0.03	0.01

Table 9 (cont'd)

Step 2.		Adj $R^2 = 0.025$ $\Delta R^2 = 0.002$	Adj $R^2 = 0.058$ $\Delta R^2 = 0.002$	Adj $R^2 = 0.001$ $\Delta R^2 = 0.000$	Adj $R^2 = 0.010$ $\Delta R^2 = 0.000$
Age	-0.03	-0.08**	-0.01	-0.04	0.00
Gender	-0.16	-0.14***	-0.06	-0.07*	-0.11
SES	0.00	-0.01	0.00	0.04	0.00
Black	0.05	0.04	0.12	0.04	0.05
Asian	-0.09	-0.03	0.00	0.01	-0.07
Latino	0.01	0.00	0.02	0.01	-0.03
Multiracial	0.24	0.07*	0.06	0.02	0.03
Sexual Orientation	0.10	0.05	0.04	0.00	-0.01

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Figure 1

Interaction between sexual orientation and peer support on smoking

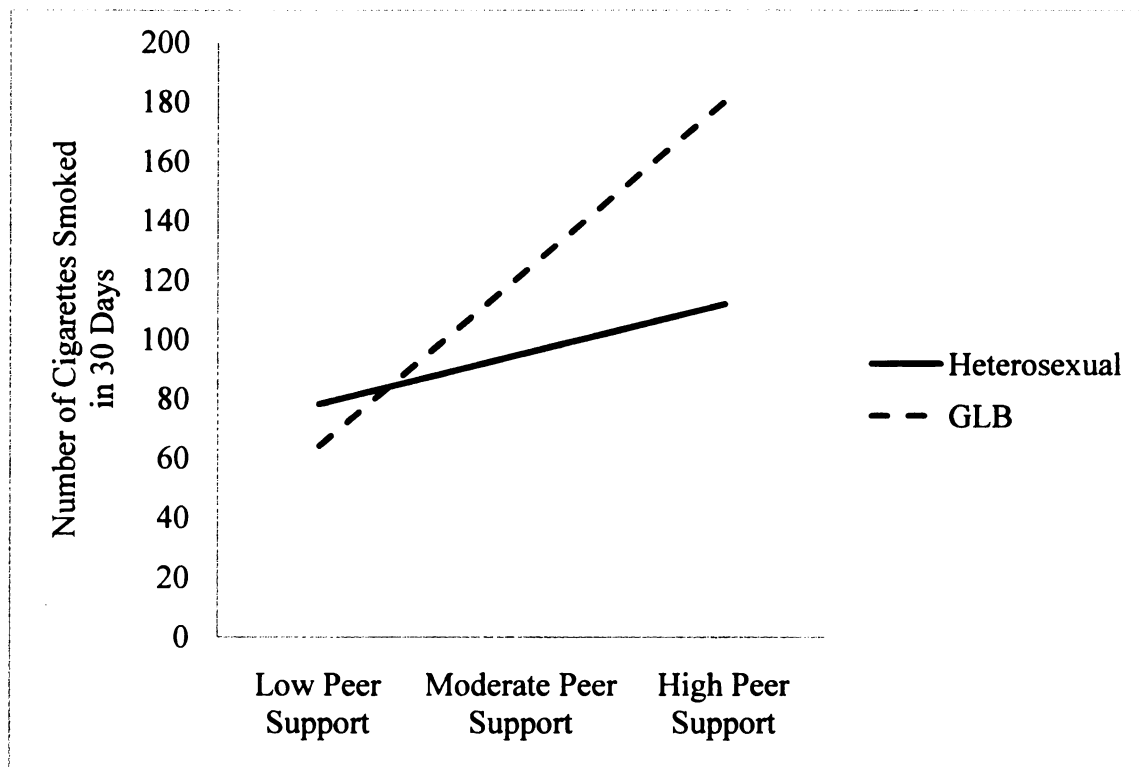


Figure 2

Interaction between sexual orientation and peer support on negative consequences of alcohol intoxication

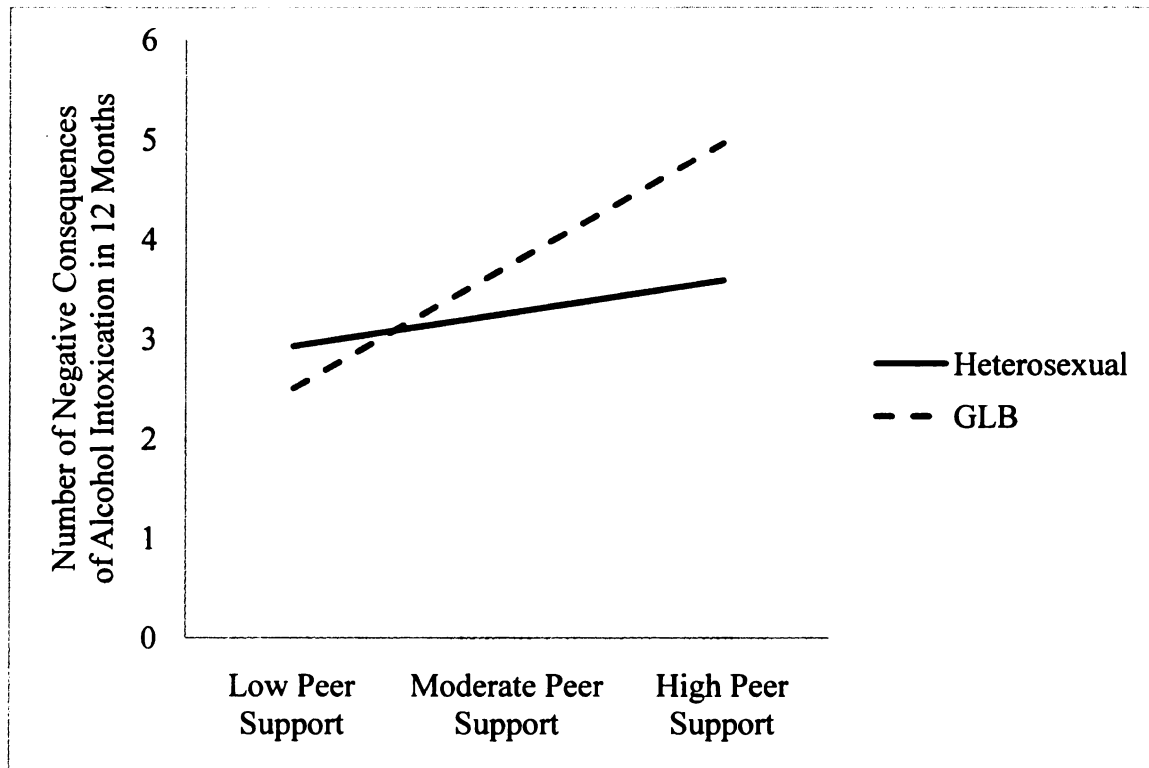
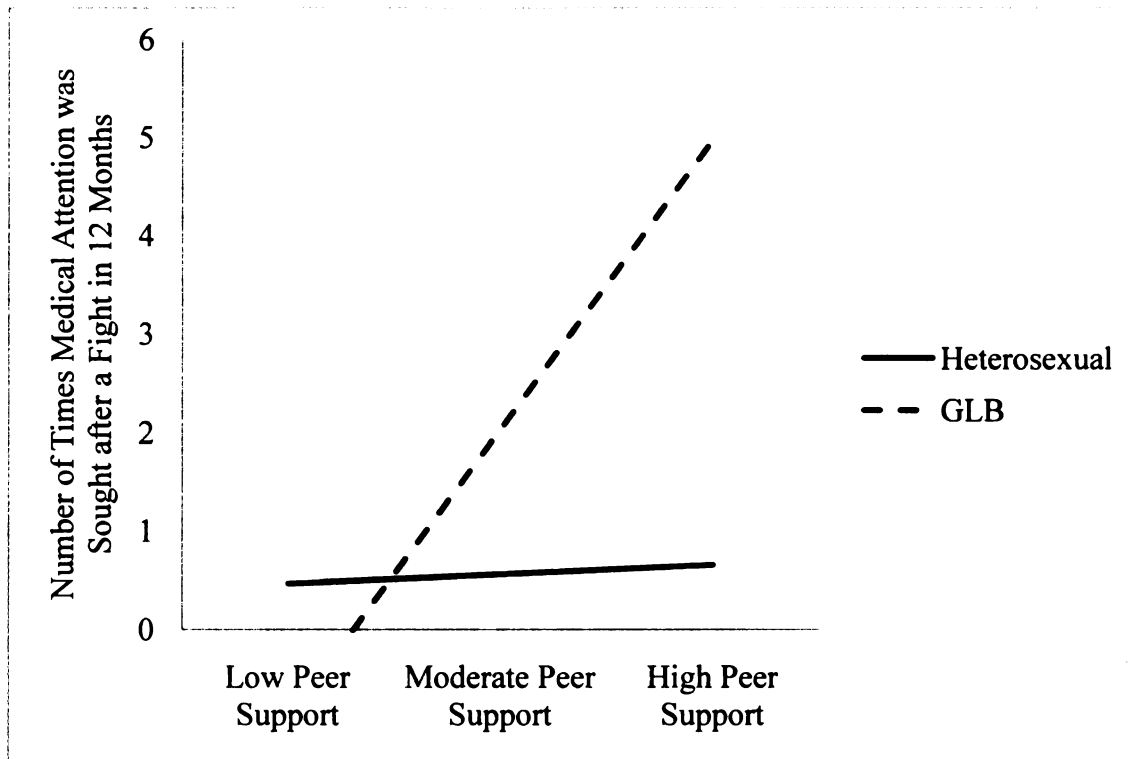


Figure 3

Interaction between sexual orientation and peer support on requiring medical attention after a physical fight



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