

AN EXPLORATORY ANALYSIS OF GENDER, SEXUAL ORIENTATION AND MENTAL
HEALTH OUTCOMES

BY

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THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Science in Community Health
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2012

Urbana, Illinois

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Abstract

Higher rates of mental distress have been reported among gay, lesbian (GLB) and bisexual populations compared to their heterosexual counterparts. This study attempted to build on previous research and explore multiple risk and protective factors associated with mental health outcomes (depressive and anxiety symptoms) within the GLB population. In particular, we considered: parental support/connectedness, social support/ connectedness, internalized homophobia (IH), discrimination and stigma, disclosure practices, and parental enforcement of gender appropriate behaviors. Numerous hypotheses were tested. The first set of relationships compared the GLB population under study to the heterosexual population. H1: The GLB population will experience greater mental distress than the heterosexual population. H2: Heterosexual respondents will report greater parental support/connectedness than GLB respondents. H3: Parental figures will more strictly regulate male gender performance, regardless of sexuality. The second set of hypotheses explored the intergroup dimensions of GLB identity. H4: For GLB persons, higher levels of parental connectedness/support will be associated with lower levels of mental distress. H5: For GLB persons, higher levels of disclosure will be associated with lower levels of mental distress. H6: For GLB persons, level of IH and level of disclosure will be negatively correlated. H7: For GLB persons, higher levels of parental enforcement of gender appropriate behaviors will be associated with lower levels of disclosure within the family unit. H8: For GLB persons, higher levels of parental enforcement of gender appropriate behaviors will be associated with higher levels of IH. H9: For GLB persons, greater experiences of discrimination (racial/ethnic or sexual) will be associated with greater levels of mental distress. Both descriptive and inferential statistical techniques were employed in analysis. The sample was drawn from students at the University of Illinois Urbana-Champaign. Data were collected through an online survey administered Fall semester 2011. The sample was comprised of 116 respondents 98 of which identified as heterosexual 16 as GLB and 2 as Other (asexual). Results indicated that GLB males were at a significantly greater risk of an anxiety outcome compared to heterosexual males. GLB respondents experienced lower levels of parental support/connectedness compared to heterosexual respondents. There was a difference in how the stress process operated based on GLB respondent's biological sex. This was particularly true when considering variables such as IH and enforcement of gender appropriate behaviors. For GB males a positive relationship emerged between level of IH and parental enforcement of gender appropriate behavior for both mother and father figures, however for LB females a negative relationship emerged between IH and motherly enforcement of gender appropriate behaviors (no relationship was found for fathers).

Table of Contents

TABLES.....	iv
List of Abbreviations	v
Chapter 1: Introduction.....	1
Chapter 2: Literature Review	4
Chapter 3: Methods and Measures	11
Chapter 4: Results and Conclusion	23
References:.....	42

TABLES

TABLE 1: DESCRIPTIVE STATISTICS OF KEY EXPLANATORY VARIABLES.....	30
TABLE 2: A DESCRIPTIVE COMPARISON OF KEY EXPLANATORY VARIABLES BY SEXUAL ORIENTATION.....	30
TABLE 3: SEXUAL ORIENTATION BY RACE/ETHNICITY	30
TABLE 4: LOGISTIC REGRESSION PREDICTING DEPRESSIVE AND ANXIETY OUTCOMES FOR MEN AND WOMEN	31
TABLE 5: CORRELATION MATRIX OF SELECT OUTCOME AND EXPLANATORY VARIABLES FOR GAY AND BISEXUAL MEN	33
TABLE 6: CORRELATION MATRIX OF SELECT OUTCOME AND EXPLANATORY VARIABLES FOR LESBIAN AND BISEXUAL	35

List of Abbreviations

<i>Abbreviation</i>	<i>Description</i>
Add Health	National Longitudinal Study of Adolescent Health
BAI	Beck Anxiety Inventory
CES-D10	Center for Epidemiological Studies Depression Scale 10 Items
DSM-IV	Diagnostic and Statistical Manual 4
GB	Gay and Bisexual
GL	Gay and Lesbian
GLB	Gay, Lesbian, and Bisexual
IH	Internalized Homophobia
LB	Lesbian and Bisexual
MSM	Minority Stress Model
NCSR	National Comorbidity Survey Replication
NLAAS	National Latino and Asian American Study

Chapter 1: Introduction

It is estimated that 26.2% of the United States (U.S.) adult population suffers from some type of psychiatric disorder (Kessler, Chiu, Demler & Walters, 2005). Sexual minorities represent a particularly vulnerable population to these health conditions. A number of researchers have documented a higher rate of mood, anxiety, and substance use disorders among gay men, lesbians and bisexuals (GLB) compared to their heterosexual counterparts (Cochran, Sullivan & Mays, 2002; Needham & Austin, 2010). While a number of methodological issues persist in evaluating mental health outcomes among the GLB population (sampling methodologies and sexual identity categories in particular) meta-analyses of relevant studies still suggest that GLB populations have a higher prevalence of psychiatric disorders than their heterosexual counterparts (Meyer, 2003; Meyer & Wilson, 2009). What is less clear is how multiple factors may come together to produce certain mental health outcomes in GLB populations. This is often due to limitations in data availability, whereby distinct groups must be aggregated in order to increase statistical power during analysis.

Recent research has attempted to address this issue. Meyer and colleagues (2008) studied the prevalence of mental health disorders and suicide attempts among Black, Latino, and White GLB populations. A primary finding was that Latinos and Whites demonstrated the highest rates of psychiatric disorders compared to their Black counterparts. In addition, Latino respondents reported more serious suicide attempts than both their White and Black counterparts.

Consolacion and colleagues (2004) in a study examining mental health outcomes among a representative sample of U.S. adolescents found that White, Black, and Latino/Hispanic same-sex attracted youths reported higher levels of depression than their opposite sex attracted

counterparts. This finding did not extend to Asian/Pacific Islander same-sex attracted youths, however this may be related to the small sample size of Asian/Pacific Islander same sex attracted youths.

Other researchers have taken a different approach and considered possible determinants of poor mental health outcomes. Chae and Ayala (2010) using data from the National Latino and Asian American Study (NLAAS) examined the relationship between unfair treatment and psychological distress among a population of GLB Latino and Asian Americans. Similarly, Diaz and colleagues (2001a, 2001b, 2007) evaluated mental health outcomes among a population of gay and bisexual men. In doing so these researchers attempted to go beyond simply describing GLB mental health in relationship to heterosexual health and empirically tested aspects of the stress process, which may lead to adverse mental health outcomes within a GLB population. The importance of these studies cannot be underestimated. They demonstrate that the GLB experience is not a universal one. This suggests then, that factors, which have been identified as risk and protective for GLB mental health may be experienced in distinct ways depending on one's particular context.

Study Objectives:

This study aims to build on previous research and explore the broad context of GLB identity and how it relates to mental health outcomes. In particular, it will consider multiple risk and protective factors. Such factors include: parental support or connectedness, social support or connectedness, internalized homophobia, discrimination and stigma, and identity concealment and disclosure practices. Additionally, this work will also consider the role of gender socialization and expectations. The overall goal of this analysis is to examine the relationship if any between these factors and how they may come to manifest as mental distress.

The minority stress model (MSM) as conceptualized by Meyer (1995, 2003) will be used as the conceptual framework throughout the analysis. In short, the minority stress model (MSM) is an extension and/or amalgamation of social stress and other social and psychological frameworks, whereby minority populations are thought to experience a greater amount of stress due to their minority status in society. In particular, this stress is related to the stigma and discrimination the minority population experiences in its' interactions and experiences with the dominant society. Originally, this was conceptualized in regard to racial/ethnic and gender identity but has been expanded to GLB identified individuals, whereby it is assumed that GLB persons are exposed to a greater number of stressors in their lives due to their sexual minority status in a heteronormative society. As a result of increased exposure to stress mental health conditions are expected to be more prevalent.

As theory would suggest, multiple minority persons would experience the greatest amount of stress. This concept is fairly well accepted, however how exactly these multiple stresses translate into mental health outcomes is somewhat less straightforward. That is, the MSM is well supported in respect to the general GLB population; e.g. GLB persons experience a higher rate of mood, anxiety and substance use disorders compared to heterosexuals (Cochran et al., 2002; Meyer, 2003; Meyer et al., 2009; Needham & Austin, 2010). When variables such as race/ethnicity are taken into consideration however, results are sometimes not consistent with the MSM. This apparent contradiction has been framed in terms of stress and resiliency (see Huang et al., 2010; Meyer, 2010 for a discussion).

This work addresses this issue and includes multiple risks and protective factors. They are conceptualized as simultaneously interacting in the process. This work aims to move toward a better understanding of the determinants of mental health outcomes within GLB populations.

Chapter 2: Literature Review

Previous research suggests that mental health outcomes vary based on sexual orientation and are not consistent across all GLB groups. In an attempt to better understand the experience of GLB individuals numerous scholars have turned to identifying risk and protective factors associated with GLB identity. Similarly, some researchers have gone even further and considered within group differences. Below we will review the literature on these factors.

Factors Associated with GLB Mental Health

Parental Support/Connectedness

Parental support and/or connectedness have been identified as key determinants of GLB mental health outcomes (particularly among adolescent populations). In general, research suggests that higher levels of parental support and connectedness are associated with better mental health outcomes among GLB populations. For example, Needham & Austin (2010) considered the effects of parental support and family connectedness on mental health outcomes among a representative sample of GLB adolescents in the U.S. A primary finding was that GLB adolescents reported lower levels of parental support during the transitioning stage into adulthood and had higher rates of adverse mental health outcomes compared to their heterosexual counterparts. In a similar study on sexuality related social support, Doty and colleagues (2010) found that higher levels of sexuality social support were associated with decreased emotional distress. They also noted however, that sexuality based social support was more available from friends than from family members. A study examining binge drinking

behaviors among an adolescent GLB Italian population found that social drinkers had higher mean scores on family and peer self-disclosure scales than those reporting binge and heavy drinking (Baiocco, D'Alessio & Laghi, 2010). Social disclosure practices may have important implications for stress processes, which may impact mental health outcomes.

Internalized Homophobia/homonegativity/heterosexism

Internalized homophobia (IH) has been defined as “the gay person’s direction of negative social attitudes toward the self, leading to a devaluation of the self and resultant internal conflicts and poor self-regard” (Meyer & Dean, 1998, pp. 161). IH has been identified as a risk factor associated with GLB identity. One third of gay males who attempted suicide identified internalized conflict about their sexual orientation as the source of their discontent (Remafedi, Garrow, & Deisher, 1991). Among lesbian women, IH has been positively correlated with negative affect (DiPlacido, 1998). Meyer (1995) found that IH, independent of stigma and prejudice, predicted psychological distress among a sample of gay men in New York City. Szymanski and Sung (2010) came to similar conclusions in their examination of minority stress among a GLB Asian population. Williamson’s (2000) provide a detailed review of that demonstrates the link between IH and poor mental health outcomes among gay and lesbian (GL) groups. Furthermore, level of IH an individual experiences varies according to social patterning. Hereck and colleagues (2009) using a social psychological framework examined the unique pathways by which stigma is internalized and the varying effects it has depending on specific GLB and gender identity. Numerous hypotheses were tested in this work; notable was the idea that there would be parallel views of stigma among both heterosexual and GLB persons when other ideological associations were taken into consideration. For example, Hereck and colleagues pointed to research that suggest, men, those identifying as religious, and those politically conservative tend to harbor heterosexist attitudes. Their analysis revealed similar findings among

the GLB population, in which those identifying as men, highly religious or politically conservative manifested higher levels of internalized sexual-stigma compared to individuals who did not claim such associations. Findings suggested that level of self-stigma was higher among self-identified bisexual men compared to lesbians and gay men. Baiocco and colleagues (2010) found that social drinkers compared to binge drinkers and heavy drinkers exhibited lower scores on a scale of internalized sexual stigma. Cox and colleagues (2008, 2011) found that Belgian adolescents who identified with the GLB community scored lower on scales of IH. These latter two sets of findings indicate two important yet distinct processes. The Baiocco study suggested a direct relationship between mental health (using alcohol as a proxy) and IH. That is, GLB persons who had fewer negative appraisals of themselves' related to sexuality tended to have better mental health outcomes (social drinkers). Whereas the Cox study suggested a mediation process; that is, identifying with the GLB community protects one against negative self-appraisals related to sexuality (though causality cannot be ascertained).

Social Support/Connectedness versus Discrimination/Stigma

Social support is associated with favorable health outcomes (Marmot, 2008). The literature on GLB health appears to be consistent with these findings. Belonging to a gay community has been associated with higher levels of belongingness to the general community, which was then related to lower levels of depression (McCallum & McLaren, 2011). Baiocco and colleagues (2010), however, found that social drinkers exhibited lower mean scores on a scale of connectedness to the gay community than binge drinkers and heavy drinkers. Social drinkers, however, exhibited lower scores on a scale of internalized sexual stigma and had higher mean scores on family and peer self-disclosure scales. Thus, these findings may indicate a hierarchical process by which some types of relationships supersede the effects of others. That is, belonging to the gay community may be a protective factor for adolescents with no other or few

social supports but a strong sense of belonging to the family unit and disclosing one's identity in that unit may preclude the need or desire to belong to the gay community. As such there still exists a social support system, though it may be more nuclear in origin.

Discrimination and Stigma

Stigma and discrimination, which may limit one's access to support networks, predict poor mental health outcomes (Viruell-Fuentes, 2007; Williams & Collins, 2001). Meyer (1995, 2003) in his discussion of the MSM points to a large body of research dealing with poor mental health outcomes among GLB populations related to their experience (real, perceived or anticipated) with stigmatization and discrimination. Specifically, he points to the Allport (1954) concept of *vigilance* whereby GLB individuals are constantly on guard due to their uncertain position within the different spheres of a heteronormative society. Particularly relevant to this discussion is the work conducted by Diaz and colleagues (2001b). The authors considered discrimination, social isolation and self-esteem in their evaluation of mental health outcomes among a population of gay and bisexual Latino men. Social discrimination operationalized as homophobia, poverty, and racism had a negative impact on levels of social support and self-esteem and that social isolation and low self-esteem were predictors of psychological distress. Chae and Ayala (2010) using NLASS data found that unfair treatment (operationalized using the Everyday Experience of Discrimination Scale) was significantly related to an increased level of psychological distress among GLB Asians and Latinos, even after relationship status, insurance status, ethnicity, poverty status and educational level were taken into account. Szymanski and Sung (2010) in their study of GLB Asians went one step further and (among other things) differentiated between racism in and outside the GLB community as well as between general heterosexism and heterosexism within communities of color. Heterosexism within communities of color was found to be a significant predictor of psychological distress.

Disclosure versus Concealment

Psychological distress is often the product of both external and internal factors. For GLB person's, internal factors may be particularly salient. Individuals who identify as GLB are often confronted with the issue of concealing their identity versus disclosing it. However, disclosure and concealment are not necessarily single choices, which encompass every area of ones' life. That is, persons may be "out" to different people or groups in different settings. Concealing GLB identity produces stress, which is related to poor mental health outcomes (Meyer, 1995, 2003). Such a state of being can be complicated and require a great deal of identity management (e.g. choosing who to disclose or conceal one's identity from). This goes beyond simply outwardly identifying as GLB. It involves the constant process of a GLB person being conscious of the way he/she walks, talks, carries him/herself, who he/she associates with (an extension of *vigilance*); all of which may be perceived by others as indicators of GLB identity and possibly result in experiences of stigmatization or discrimination (Hetrick & Martin, 1987; Meyer, 1995; Meyer 2003). Meyer (1995, 2003) has described this identity management process as chronic, that is, ongoing and constant.

Chronic stress is a particularly important factor when considering health outcomes among a population. It has been linked to various health problems including coronary heart disease (and related conditions), through physiological adjustments made in response to the stressor (Marmot, 2008). Perez-Benitez and colleague's (2007) study on cardiovascular functioning and disclosure and concealment tasks among a sample of gay male university students seems to support this conclusion. These authors found that high levels of concealment (assessed using the Outness Inventory) followed by high levels of disclosure (measured on a 7 point scale by two judges) were associated with better cardiovascular functioning during a recovery period compared to those participants with lower levels of disclosure. While much of the research in this regard has

focused on physical health, it is plausible that chronic stress influences psychological well-being, particularly in light of hormonal or chemical changes which take place within the body as a result of exposure to chronic stressors. Vaughan and Waehler (2010) in their study on stress related growth during the coming out process point to numerous studies that have documented a relationship between disclosure, lower levels of stress, and fewer symptoms of depression and anxiety. Cox and colleagues (2011) found that greater disclosure to persons in different roles was associated with lower levels of IH.

Hypotheses

This study draws upon the MSM and the general health literature in conceptualizing relevant risk, protective and modifying factors. This study explores and investigates how various risk and protective factors impact one's mental health. The hypotheses reflect this framework and are designed to trigger deeper thought and further discussion and investigation. The hypotheses are divided into two sets of categories. The first consists of Heterosexual and GLB comparisons and the second consists of within group differences within the GLB population.

Heterosexual and GLB Comparison

Hypothesis 1:

The GLB population will experience greater mental distress than the heterosexual population.

Hypothesis 2:

Heterosexual respondents will report greater parental support/connectedness than GLB respondents.

Hypothesis 3:

Parental figures will more strictly regulate male gender performance, regardless of sexuality.

GLB Population

Hypothesis 4:

For GLB persons, higher levels of parental connectedness/support will be associated with lower levels of mental distress.

Hypothesis 5:

For GLB persons, higher levels of disclosure will be associated with lower levels of mental distress.

Hypothesis 6:

For GLB persons, level of IH and level of disclosure will be negatively correlated.

Hypothesis 7:

For GLB persons, higher levels of parental enforcement of gender appropriate behaviors will be associated with lower levels of disclosure within the family unit.

Hypothesis 8:

For GLB persons, higher levels of parental enforcement of gender appropriate behaviors will be associated with higher levels of IH.

Hypothesis 9:

For GLB persons, greater experiences of discrimination (racial/ethnic or sexual) will be associated with greater levels of mental distress.

Chapter 3: Methods and Measures

Methods

Sampling and Procedures

An online survey was administered to students from the campus of University of Illinois at Urbana-Champaign. A combination of targeted sampling and snowball sampling techniques were used to recruit participants. Subjects were recruited from various places around campus in the Fall semester of 2011. Specific recruitment techniques included: contacting student organizations, distributing fliers, and making announcements in classroom settings. The student organizations/groups/centers contacted were chosen based on the diversity in their membership. Fliers were distributed in high traffic areas on campus including various campus events. Digital versions of the flier were also provided to student organizations. All fliers briefly described the study, eligibility criteria, and provided the RPI contact information. There were 117 participants who completed the survey.

Measures

Numerous demographic questions were utilized in this study. They included age, biological sex, parental education, gender identity, sexual identity (sexual orientation), race and ethnicity. Answer categories included: biological sex- male, female, and intersex; parental education-no education through graduate degree; gender identity- male, female, queer, trans male to female, trans female to male and other; sexual identity- bisexual, heterosexual, lesbian, and not applicable. Respondents were also given a subsequent question, which allowed them to elaborate on their sexual orientation category. To operationalize all major variables of interest other than sexual identity a series of questions were asked and scales were constructed. The

major variables of interest other than sexual identity included: parental connectedness/support, internalized homophobia (when respondent identified as GLB), parental rigidity of gender roles (parental enforcement of gender “appropriate” behaviors), disclosure (when respondent self identified as GLB) campus organizational involvement, and racial/ethnic and sexuality related discrimination. Outcome variables of interest included depressive symptoms operationalized using the Center for Epidemiological Studies Depression Scale (CES-D 10) (Andresen, Malmgren, Carter & Patrick, 1994) and anxiety symptoms operationalized using the Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown, & Steer, 1988).

Depressive Symptomatology

Depressive symptomatology was operationalized using the CES-D 10 scale (Andresen et al., 1994). This is a non-diagnostic instrument taken from the CES-D 20 scale (Radloff, 1977). Both scales have been widely used among adolescent and adult populations. With regard to the CES-D 10 scale, previous studies have demonstrated an internal reliability consistency of 0.84 among a population suffering from chronic conditions (Lorig, Sobel, Ritter, Laurent, & Hobbs, 2001), 0.79 among a population of college freshman (Pressman, Cohen, Barkin, Miller & Rabin, 2005) and 0.76 among an ethnically diverse college population (Ganem, Heer, & Morera, 2009). Respondents were asked: *How often have you felt or behaved in a certain way during the past week?* Responses are measured on a Likert Scale ranging from rarely or none of the time to all of the time. Responses are then summed. For this study, individuals with scores of 10 or above were classified as having depressive symptoms. For analysis both total scores and dichotomized variables were used. When this variable was dichotomized a score of 10 was used as the cutoff. Thus, scores less than 10 were coded as zero and scores 10 or greater were coded as 1.

The ten items respondents were asked about are listed below:

- I was bothered by things that usually don't bother me.
- I had trouble keeping my mind on what I was doing.
- I felt depressed.
- I felt that everything I did was an effort.
- I felt hopeful about the future.
- I felt fearful.
- My sleep was restless.
- I was happy.
- I felt lonely.
- I could not "get going".

Anxiety symptomatology

Anxiety symptomatology was operationalized using the Beck Anxiety Inventory (Beck et al., 1988). It is a 21-question instrument used to help in the diagnosis of an anxiety disorder. This instrument has been used widely with diverse populations. In a study to assess reliability and validity of the BAI instrument among Anglo and Hispanic populations Contreras and colleagues (2004) found internal consistency coefficients above 0.88 for the total sample, different ethnic groups, and for men and women separately within each ethnic group.

Respondents were asked: *How often have you been bothered by certain symptoms within the past week (including the day of)?* Responses are measured on a 4-point Likert Scale ranging from not at all to severely. Responses are then summed. Participants scoring 16 or above on the BAI instrument were classified as having anxiety symptoms. For analysis both raw scores and dichotomized variables were used. When this variable was dichotomized a score of 16 was used as the cutoff. Thus, scores less than 16 were coded as zero and scores of 16 or greater were coded as 1.

The twenty-one items respondents were asked about are listed below:

- Numbness or tingling
- Feeling hot
- Wobbliness in legs
- Unable to relax

- Fear of worst happening
- Dizzy or lightheaded
- Heart pounding/racing
- Unsteady
- Terrified or afraid
- Nervous
- Feeling of choking
- Hands trembling
- Shaky/Unsteady
- Fear of losing control
- Difficulty in breathing
- Fear of dying
- Scared
- Indigestion
- Faint/lightheaded
- Face flushed
- Hot/cold sweats

Parental Support

Parental support has been linked to mental health outcomes in youth and adolescent populations. Thus parental support was viewed as a potential concept of interest as the college period represents a key transitional phase from adolescence into adulthood. To determine level of parental support measures similar to those used in the National Longitudinal Study of Adolescent Health (Add Health) (Harris et al., 2009) were utilized. This measure was used among a nationally representative sample of adolescents and thus seemed appropriate for use in this study. Questions included: *How close do you feel to your parental figure?* And level of agreement with: *My parental figure is warm and loving* and *I enjoy doing things with my parental figure.*

For this study mother were defined as a female figure in a respondent's life who fulfilled a primary care-taking role. This female may have been a biological mother, stepmother, adoptive mother, sister, other relative, or non-relative. Father was defined similarly, as a male figure in a respondent's life who fulfilled a primary care-taking role. This male figure may have been a

biological father, stepfather, adoptive father, brother, other relative or non-relative. The respondent was then asked the exact relationship to each parental figure. Similar techniques were utilized by Needham & Austin (2010) in their study of parental support and sexual orientation. These scholars reported internal reliability coefficients of 0.83 for the current residential mother scale and 0.74 for the current residential father scale.

Internalized Homophobia

IH has been associated with poor mental health outcomes in GLB populations. In order to operationalize this concept the Revised Internalized Homophobia Scale (IHP-R) originally developed by Martin and Dean (1992) was utilized (Herek, Gillis & Cogan, 2009). Herek and colleagues have demonstrated this measure to have good internal reliability with an alpha of 0.82 compared to the original IHP measure with an alpha of 0.84.

Responses were measured on a 5-point Likert-scale and respondents were instructed to indicate their level of agreement with a series of statements. Response items were then summed. This summed measurement represented a respondents IH score.

The statements include:

Women:

- I have tried to stop being attracted to women in general.
- If someone offered me the chance to be completely heterosexual, I would accept the chance.
- I wish I weren't lesbian/bisexual.
- I feel that being lesbian/bisexual is a personal shortcoming for me.
- I would like to get professional help in order to change my sexual orientation from lesbian/bisexual to straight.
- I have tried to become more sexually attracted to men.
- I often feel it best to avoid personal or social involvement with other lesbian/bisexual women.
- I feel alienated from myself because of being lesbian/bisexual.
- I wish that I could develop more erotic feelings about men.

For men, the questions were identical however “lesbian” appeared as “gay” and “women” and “men” were substituted for one another.

Disclosure

For GLB persons’ disclosure is an important aspect of identity. If one is unwilling to disclose his/her GLB identity this may be for a variety of reasons. For example, he/she may be ashamed of this identity, he/she may not feel as though it is safe to tell others e.g. might fear backlash or losing friends or family support, or there may be other reasons. This unwillingness or inability to disclose may have implications for mental health outcomes. For this study disclosure was operationalized through multiple measurements including: individual parental figure disclosure i.e. *Does your mother figure know you identify as gay, lesbian, or bisexual?* This same question was asked of every parental figure identified. Sibling disclosure: *Does at least one of your siblings know you identify as gay, lesbian, or bisexual?* A response option was given if one has no siblings. And overall familial disclosure: *On a scale ranging from 1 to 5, with 1 being very low and 5 being very high, how would you rate your level of "outness" to your family (parents, siblings, relatives)?* In order to assess peer disclosure respondents were asked to select the statement which best describes their situation. The statements are: *Most of my friends know that I identify as gay, lesbian or bisexual. Most of my friends do not know that I identify as gay lesbian or bisexual but there are a few friends that do know. None of my friends know that I identify as gay, lesbian or bisexual.* Overall peer disclosure was assessed in a similar manner as familial disclosure: *On a scale ranging from 1 to 5, with 1 being very low and 5 being very high, how would you rate your level of "outness" to your friends?* The overall familial and peer disclosure scales were summed in order to create a total disclosure scale. Individual disclosure variables were also maintained.

Parental Enforcement of Gender Appropriate Behaviors

Parental enforcement of gender appropriate behaviors was viewed as a potential variable of interest as it may interact with other variables such as IH, disclosure, or parental connectedness/support in influencing mental health outcomes. Furthermore, because of the sometimes blurred boundaries between gender identity and sexual orientation this may be a particularly important concept. Raffaelli & Ontai (2004) in a study of gender socialization patterns among a Latino/a population developed a scale regarding parental enforcement of stereotypical gender behavior. To operationalize this concept respondents were asked how much each parental figure encouraged certain behaviors while they were growing up; with 1 being not at all, 3 being somewhat, and 5 being very much.

The behaviors include:

- Do outdoor chores
- Play with girls' toys
- Play indoors (vs. outdoors)
- Play with boys' toys
- Do indoor chores
- Wear hair long
- Take care of your siblings
- For biological males: Engage in boys' activities
- Express feelings; Be "Manly"/ "Macho"
- For biological females: Wear gender appropriate clothes
- Be a "tomboy"; Be ladylike

Principal components factor analysis was then conducted and scales were computed for eigenvalues greater than 1. This resulted in different scales emerging depending on the respondent's gender and the parental figure in question (Raffaelli & Ontai, 2004). As a multi-variable exploratory analysis, a simplified process was undertaken for this study, whereby response items were summed for each parental figure separately. These summed scores represented the parental enforcement of gender appropriate behavior measures.

Campus Organizational Involvement

Level of involvement in campus activities may influence mental health outcomes. If a respondent is very active in organizations and maintains a high level of social involvement this may negate feelings of loneliness, hopelessness, helplessness and other feelings associated with poor mental health outcomes. Similarly, a respondent may have more social supports to call upon during times of stress. To operationalize campus involvement as well as connectedness to the GLB and Hispanic communities for those who identify as such, a series of questions were administered. They included: For the entire sample: *Are you currently a member of any student organization(s), club(s), or group(s) on campus? About how many campus organization, clubs, or groups would you say you are affiliated with? And Your level of involvement in each group may vary but overall how would you rate your level of involvement in campus organizations, clubs or groups?* For the GLB population: *Are you affiliated with any of the gay, lesbian, bisexual, transgender, or queer organizations, clubs, or groups on campus? About how many campus GLBTQ (Gay, Lesbian, Bisexual, Transgender and/or Queer) organizations, clubs, or groups would you say you are affiliated with? And Your level of involvement in each group may vary but overall how would you rate your level of involvement in GLBTQ organizations, clubs or groups on campus?*

Discrimination

The experience of discrimination or the fear of discrimination may be closely linked to disclosure practices for GLB persons as well as internalized self-stigma for either GLB persons and/or racial/ethnic minorities. To operationalize the experience of discrimination instruments were borrowed from Diaz and colleagues (Diaz & Ayala, 2001) and the NLAAS survey (Essed, 1991; Williams, Yu, Jackson, & Anderson, 1997). The Diaz instrument was developed for gay

and bisexual Latino men, thus it was modified slightly so as to be administered to all racial/ethnic groups as well as both lesbian and bisexual women. This instrument assessed both sexual discrimination and racial/ethnic discrimination. Scholars have documented an internal reliability of 0.75 for sexual discrimination and 0.82 for racial/ethnic discrimination (Diaz et al, 2001). One question considered both sexual and ethnic discrimination together in a single question.

In order to capture more general racial/ethnic discrimination the Everyday Experiences of Discrimination Scale was also utilized. Scholars have documented an internal reliability of 0.91 among a racially/ethnically diverse GLB population (Chae & Ayala, 2010). Both sets of questions are listed below.

Sexual Discrimination

Respondents were instructed: *Please indicate how often you have experienced the following situations* (Diaz & Ayala, 2001). Responses were measured on a four-point Likert scale ranging from never to often. Questions appeared slightly different for lesbians and female bisexuals. The term “lesbian” was used in place of “gay” and “effeminate” appeared as “non-effeminate.”

Response items were summed and these scores represented the sexual discrimination measure.

- verbally harassed in childhood for being gay, bisexual and/or effeminate
- felt that homosexuality/bisexuality hurt/embarrassed your family
- had to pretend to be straight in order to be accepted
- heard as a child that gays/bisexuals would grow old alone
- had to move away from family because of homosexuality/bisexuality
- harassed by police because of homosexuality/bisexuality

Racial/Ethnic Discrimination

Respondents were asked: *In your day-to-day life how often have any of the following things happened to you* (Essed, 1991; Williams et al., 1997)? Responses were measured on a 6-point

Likert scale ranging from almost everyday to never. These response items were summed and these score represented the racial/ethnic discrimination measure.

- You are treated with less courtesy than other people.
- You are treated with less respect than other people.
- You receive poorer service than other people at restaurants or stores.
- People act as if they think you are not smart.
- People act as if they are afraid of you.
- People act as if they think you are dishonest.
- People act as if you are not as good as they are.
- Your are called names or insulted.
- Your are harassed.

Analytic Strategy

While the overall sample of 117 participants was large enough for robust statistical analysis, the number of GLB individuals who participated in the study was only 16. Therefore, most of the analysis is descriptive in nature. A total of 117 respondents completed the online survey. One observation was removed from analysis due to missing values on key demographic indicators (sex, gender, and sexual orientation). When appropriate, p-values are given for tests of statistical difference between groups. Generally, results displayed are for two-sample t-tests and tests of proportions. In few instances, results are displayed for one-way ANOVA's. In addition to this more descriptive approach, simple logistic regressions were also performed to assess difference in risk of depressive and anxiety symptoms between Heterosexual and GLB respondents. Due to the small sample size of the GLB population this analysis was not disaggregated beyond biological sex. Even, this level of disaggregation severely limits statistical power. Similarly, exploration of hypotheses specifically regarding the GLB population was limited to correlational techniques. This too was only disaggregated by biological sex.

Statistical analyses were performed using Stata version 11.2 (StataCorp, 2009). Depression and anxiety symptom scores were calculated. Two variables for each were created: a total score variable as well as a dichotomized variable. Depressive symptom scores below 10 were coded as 0 and scores 10 or above were coded as 1; for anxiety symptoms, scores below 16 were coded as 0 and scores of 16 or above were coded as 1.

Missing Data

Stata's Multiple Imputation procedure (command `mi`) was used to impute values in instances of item non-response. Multiple imputation is a simulation approach. The intent is to impute missing values in such a way as to produce valid statistical inference (Rubin, 1996). This

procedure was warranted as most variables used in analysis were scaled variables consisting of multiple items. Thus, one missing value on a scaled variable could render an entire score unusable.

Chapter 4: Results and Conclusion

Results

In the final sample, 37 identified as biologically male and 79 identified as biologically female. Gender identity was fairly consistent with biological sex, with a few exceptions- 1 biological male identified as “Other”, 2 biological females identified as “Queer” and 1 biological female identified as “Male”. In terms of sexual orientation a total of 16 respondents identified as GLB, 98 identified as Heterosexual and 2 selected Not Applicable (indicating Asexual in the subsequent question which allowed respondents to elaborate upon their sexual orientation category). Of the biologically female population sexual orientation is as follows: Bisexual (n=4), Heterosexual (n=69), Lesbian (n=5), and Asexual (n=1). Of the biologically male population sexual orientation is as follows: Bisexual (n=2), Heterosexual (n=29), Gay (n=5) and Asexual (n=1).

The racial/ethnic composition of respondents was fairly diverse with approximately 30% of respondents indicating that they were some race or ethnicity other than non-Hispanic White (Anglo). The specific racial/ethnic breakdown is as follows: Asian or Pacific Islander (n=12), Black or African American (n=8), non-Hispanic White (n=80), Hispanic (n=12), and Other (n=3). One respondent is not included due to a missing value in the race and ethnicity fields. For further analysis race/ethnicity was imputed using other demographic variables and general discrimination score as predictors. This respondent had an imputed race/ethnicity as non-Hispanic White. The mean age of respondents was 19.7 years (SD 2.9).

Dependent Variables

Depressive Symptomatology (hypothesis 1)

Almost half (46%) of the respondents met CES-D 10 criteria for depressive symptomatology. Average symptom score for females was 10.4 (SD 5.7), which was higher than among males (Mean = 8.4; SD 4.5) ($p=0.06$). With respect to sexual orientation and depressive symptomatology, there was no statistical difference between Heterosexual (47%) and GLB respondents (31%) in the prevalence of depressive symptomatology ($p=0.24$). In terms of race/ethnicity 50% of Asian or Pacific Islanders, 63% of Blacks, 46% of non-Hispanic Whites, 33% of Hispanics and 33% of individuals reporting 'Other race' met CES-D 10 criteria for depressive symptomatology.

Anxiety Symptomatology (hypothesis 1)

Prevalence of anxiety symptoms was 28%. Among those classified as having anxiety symptoms, 88% were biologically female and 13% were biologically male ($p=0.01$). Average symptom score for females was 12.7 (SD 8.6), whereas it was 8.4 (SD 8.3) for males ($p=0.01$). With respect to sexual orientation, approximately 24% of Heterosexual respondents met criteria for anxiety symptoms and 44% of GLB respondents met criteria ($p=0.11$). In terms of race/ethnicity 25% of Asian or Pacific Islanders, Black or African Americans, and Hispanics met BAI criteria for anxiety symptoms, whereas 30% of non-Hispanic Whites met criteria.

Key Explanatory Variables

Parental connectedness/support (hypothesis 2)

Mother:

All respondents sampled indicated that they had a mother figure in their life. On a scale from 1 to 15 average mother connectedness/support score was 13.2 (SD 2.4). Biological females

reported an average score of 13.2 (SD 2.4) and biological males reported an average score of 12.7 (SD 2.5) ($p=0.31$). With respect to sexual orientation, Heterosexual respondents reported an average score of 13.3 (SD 2.2) whereas GLB respondents reported an average score of 12.1 (SD 3.01) ($p=0.07$). In terms of race/ethnicity, Blacks or African Americans reported the highest level of connectedness/support with an average score of 14.0 (SD 2.5). Hispanics however, reported the lowest level of support with an average score of 11.4 (SD 3.6) ($p=0.09$).

Father:

Most participants ($n=111$) indicated having a father figure in their life. Of those respondents average score on the connectedness/support scale was somewhat lower than that reported for mother figures. For the entire sample (who indicated they had a father figure) mean score was 11.6 (SD 2.9). The difference in average score between biological females and males was even less pronounced than the average score observed for motherly connectedness/support. With respect to sexual orientation, Heterosexual respondents reported an average score of 11.9 (SD 2.9) whereas GLB respondents reported an average score of 10.4 (SD 2.8) ($p=0.08$). In terms of race/ethnicity, Asian or Pacific Islanders reported the highest level of connectedness/support with an average score of 12.8 (SD 2.2), whereas Hispanics reported the lowest level of connectedness/support with an average score of 10.0 (SD 4.2) ($p=0.06$).

Parental enforcement of gender “appropriate” behaviors while growing up (hypothesis 3)

Parental enforcement of gendered behaviors, measured separately for mother and father figures, was obtained for all respondents.

Mother:

The mean score on the mother gendered behavior scale was 34.9 (SD 5.0). Biological females scored slightly lower than biological males with average scores of 34.5 (SD 5.1) and

35.6 (SD 4.7) respectively ($p=0.27$). In terms of sexual orientation, Heterosexuals reported an average score of 35.0 (SD 4.9) whereas the GLB population reported an average score of 33.8 (SD 5.8) ($p=0.35$). Of the GLB population Bisexual men reported the highest mean score at 40.0 (SD 1.4), followed by Bisexual women at 33.8 (SD 8.8), Lesbian women at 33.2 (SD 3.8) and Gay men at 31.8 (SD 5.2) ($p=0.30$). In terms of race/ethnicity, respondents who identified as Black or African American reported the highest level of motherly enforcement of gendered behaviors with a mean score of 37.3 (SD 3.3) followed by Hispanics at 35.8 (SD 7.3). There were no statistical differences across racial/ethnic groups.

Father:

For all respondents who indicated they had a father figure, mean score on the father gendered behavior scale was 33.9 (SD 6.3). Biological females scored lower than biological males with average scores of 31.5 (SD 5.7) and 38.7 (SD 4.3) respectively ($p<0.001$). In terms of sexual orientation, Heterosexuals reported an average score of 33.8 (SD 6.2) while GLB respondents reported an average score of 34.3 (SD 7.1) ($p=0.81$). Of the GLB population Bisexual men reported the highest mean score at 41.5 (SD 2.1), this followed by Gay men at 38.4 (SD 5.2), Bisexual women at 32.5 (SD 6.2) and Lesbian women at 28.6 (SD 6.4) ($p=0.77$). In terms of race/ethnicity, Hispanics reported the highest level of fatherly enforcement of gendered behaviors with a mean score of 37.1 (SD 6.4) and Asian or Pacific Islanders reported the lowest mean score at 32.5 (SD 6.3) ($p=0.10$).

Social supports/networks

Social supports/networks was operationalized primarily as campus group or organization affiliation. Approximately 75% of all respondents sampled indicated that they were affiliated with some type of campus group or organization. In terms of biological sex, approximately 75% of males and 73% of females indicated campus group affiliation ($p=0.80$). Of the GLB

population, 71% of respondents indicated that they were affiliated with some campus group or organization. Of the 71% of GLB respondents, 10 indicated that they were affiliated with an LGBTQ organization on campus. In terms of race/ethnicity, 74% of Anglo and non-Anglo students ($p=0.98$) reported campus group affiliation.

General discrimination

General discrimination was measured for all respondents. Mean discrimination score was 21.3 (SD 7.8). There were no differences by biological sex or sexual orientation. Respondents who identified as non-Hispanic White reported the lowest levels of discrimination with a mean score of 19.9 (SD 7.8) whereas non-Anglo respondents reported an average discrimination score of 24.5 (SD 8.1) ($p=0.003$).

GLB Population

GLB concealment versus disclosure

Disclosure of sexual orientation was measured only for those respondents who self-identified as GLB. Five scales were computed, mother, father, family, peer and total (results not displayed for total disclosure).

Mother:

Most participants (75%) reported that their mother's knew they identified as GLB. In terms of biological sex 86% of males indicated they were out to their mothers whereas only 67% of females indicated they were out to their mothers ($p=0.38$). All Gay men indicated being out to their mothers, followed by 80% of Lesbian women and 50% of Bisexual men and women. In terms of race/ethnicity 83.3% of Anglos indicated being out to their mothers while only 50% of non-Anglos indicated being out to their mothers ($p=0.18$).

Father:

All GLB respondents indicated they had a father figure in their life. Most of these respondents (69%) indicated that their father's knew they identified as GLB. Similar to disclosure practices with mothers, all Gay men indicated being out to their fathers, followed by 80% of Lesbian women, 50% of Bisexual men, and 25% of Bisexual women. In terms of race/ethnicity 75% of Anglos indicated being out to their fathers while only 50% of non-Anglos indicated being out to their fathers ($p=0.35$).

Family level of disclosure:

The GLB population had an average familial disclosure level of 3.2 (SD 1.3). Biological females rated level of disclosure slightly lower than biological males with average scores of 3.0 (SD 1.3) and 3.4 (SD 1.3) respectively ($p=0.52$). Bisexual men scored highest on the familial disclosure scale with a mean score of 3.5 (SD 2.1), followed by Gay men at 3.4 (SD 1.1), Lesbian women at 3.0 (SD 1.0) and Bisexual women at 3.0 (SD 1.8) ($p=0.94$). In terms of race/ethnicity, mean familial disclosure score among Anglos was 2.9 (SD 1.9) and among non-Anglos it was 4.0 (SD 1.4) ($p=0.15$).

Peer level of disclosure:

The GLB population rated their level of disclosure to peers higher (Mean 4.1; SD 1.3) than to family members ($p=0.01$). Biological females rated level of disclosure slightly higher than biological males with average scores of 4.1 (SD 1.4) and 4.0 (SD 1.4), respectively ($p=0.88$). Lesbian women scored the highest on the peer disclosure scale with a mean score of 4.8 (SD 0.5), this was followed by Gay men at 4.2 (SD 1.3), Bisexual Men at 3.5 (SD 2.1) and Bisexual women at 3.3 (SD 1.7) ($p=0.16$). In terms of race/ethnicity, mean peer disclosure score

among Anglos was 3.75 (SD 1.42). All non-Anglos scored 5 on the peer disclosure scale (p=0.11).

Internalized homophobia/homonegativity

IH was measured only for the self-identified GLB population. For all 16 respondents identified as GLB average IH score was 19.3 (SD 8.0). Biological females reported an average score of 17.22 (SD 7.3) whereas biological males reported an average score of 22.0 (SD 8.5) (p=0.25). Of this population Bisexual men reported the highest mean score at 24.00 (SD 4.4) followed by Gay men at 21.2 (SD 10.2), Bisexual women at 17.8 (SD 5.6) and Lesbian women at 16.8 (SD 9.1) (p=0.70). Due to little racial/ethnic variation among the GLB sample the non-Anglo populations were aggregated (n=4). Average IH score among Anglos was 20.08 (SD 8.2). Among non-Anglos mean IH score was 17.0 (SD 8.0) (p=0.52).

GLB Discrimination

Discrimination based on sexual orientation was measured only for those respondents who self-identified as GLB. For all 16 respondents identified as GLB mean discrimination score was 13.8 (SD 2.7). Biological females reported an average score of 13.0 (SD 2.9) whereas biological males reported an average score of 14.9 (SD 2.2) (p=0.18). Of this population Gay men reported the highest mean score at 15.2 (SD 2.6), this followed by Lesbian females at 13.8 (SD 1.5) and Bisexual females at 12.0 (SD 4.2). Both bisexual men in the sample scored 14 on the sexual orientation discrimination measure (p=0.41). In terms of race/ethnicity, mean GLB discrimination score among Anglos was 13.4 (SD 2.5) and among non-Anglos 15.0 (SD 3.4) (p=0.33).

Table 1: Descriptive Statistics of Key Explanatory Variables

Variable	Asian or Pacific Islander (n=11-12)		Black or African American (n=6-8)		Hispanic (n=11-12)		Non-Hispanic White (n=79-80)		Other (n=3)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother Connectedness	13.3	3.1	14.0	2.5	11.4	3.6	13.1	2.2	13.0	1.7
Father Connectedness*	12.8	2.2	10.5	3.7	10.0	4.2	11.8	2.7	12.0	1.0
General Discrimination	21.1	8.0	24.1	8.0	27.0	6.5	19.9	7.3	28.7	12.9
Mother- Gendered Behaviors	35.8	4.3	37.3	3.3	35.8	7.3	34.4	4.9	34.3	3.2
Father- Gendered Behaviors*	32.5	6.3	32.8	4.3	37.1	6.4	33.6	6.5	36.3	1.5

Note: * Reflects lower end of the sample size as some respondents indicated that they had no father figure in their life.

Table 2: A Descriptive Comparison of Key Explanatory Variables by Sexual Orientation

Variable	Heterosexual (n=94-98)		GLB (n=16)		Male Bisexual (n=2)		Female Bisexual (n=4)		Gay (n=5)		Lesbian (n=5)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mother Connectedness	13.3	2.4	12.1	3.1	10.5	0.7	10.0	3.6	13.8	1.8	12.8	3.5
Father Connectedness*	11.9	2.9	10.4	2.8	9.5	2.1	9.5	4.1	10.0	2.9	12.0	1.41
General Discrimination	21.1	7.8	21.3	7.3	18.0	-----	25.5	12.8	17.8	3.9	22.8	4.5
Mother- Gendered Behaviors	35.0	4.9	33.8	5.8	40.0	1.41	33.8	8.8	31.8	5.2	33.2	3.8
Father- Gendered Behaviors*	33.8	6.2	34.3	7.1	41.5	2.1	32.5	6.2	38.4	5.2	28.6	6.4
IH	-----	-----	19.3	8.0	24.0	4.2	17.8	5.6	21.2	10.1	16.8	9.1
GLB Discrimination	-----	-----	13.8	2.7	14	-----	12.0	4.2	15.2	2.6	13.8	1.5
Familial Level of Disclosure	-----	-----	3.2	1.3	3.5	2.1	3.0	1.8	3.4	1.1	3.0	1.0
Peer Level of Disclosure	-----	-----	4.1	1.3	3.5	2.1	3.3	1.7	4.2	1.3	4.8	0.5
Total Level of Disclosure	-----	-----	7.3	2.3	7.0	4.2	6.3	3.5	7.6	2.0	7.8	0.8

Note: * Reflects lower end of the sample size as some respondents indicated that they had no father figure in their life.

Table 3: Sexual Orientation by Race/Ethnicity

Sexual Orientation	Asian or Pacific Islander (n=12)	Black or African American (n=8)	Hispanic (n=12)	Non-Hispanic White (n=80)	Other (n=3)
Bisexual	0	0	1	5	0
Gay	0	0	1	4	0
Heterosexual	11	7	10	67	2
Lesbian	0	1	0	3	1
Asexual	1	0	0	1	0

Hypothesis 1 Revisited

To further explore hypothesis 1 and assess the differences in risk of depressive and anxiety symptoms between Heterosexual and GLB respondents, logistic regressions were performed for biological males and females separately. Results, displayed in Table 4 indicate that GLB identity was not a significant predictor of depressive symptomatology for either men or women. For both groups, direction of odds ratios suggested a decreased risk of a depressive

outcome for GLB identified individuals compared to Heterosexuals. Analysis of anxiety outcomes however suggested GLB individuals were at an increased risk for an anxiety outcome. For LB women this increased risk was not statistically significant. For GB men however, the difference was significant (OR 21.00, CI 1.73-254.27). These results indicate that identifying as a GB man increased the odd of an anxiety outcome by a factor of 21 compared to Heterosexual men.

Table 4: Logistic Regression Predicting Depressive and Anxiety Outcomes for Men and Women

	Depressive Symptoms		Anxiety Symptoms	
	<i>OR</i>	<i>95% CI</i>	<i>OR</i>	<i>95% CI</i>
Gay & Bisexual Men	0.76	0.12-4.64	21.00**	1.73-254.27
Lesbian & Bisexual Women	0.46	0.11-1.98	1.60	0.39-6.53

Note: OR= odds ratio; 95% CI= confidence interval. * p<0.10, ** p<0.05, *** p<0.01, ****p<0.001

Exploring the Hypotheses 4 to 9

Due to the small sample of GLB participants, hypotheses regarding the GLB population were explored using correlational techniques. Below are two correlation matrices for GLB males and females separately. Displayed are the Pearson correlation coefficients for the two dependent variables (score form) and select explanatory variables. From the two tables it is clear that some relationships may operate differently depending on a respondent’s biological sex. Results are discussed below.

GB Males

Table 5 displays correlation coefficients for GB biological males. It is clear from the matrix that the two dependent variables, depressive and anxiety symptoms, were highly correlated among GB males ($r = 0.94$). Hypothesis 4 appeared to be confirmed. Both motherly and fatherly connectedness/support were negatively correlated with depressive and anxiety outcomes. Fatherly support was more highly correlated than motherly support (depression $r = -$

0.53 and anxiety $r = -0.52$). Hypothesis 5, regarding disclosure practices, was only partially supported by the results. While there was a negative association between familial level of disclosure and depressive and anxiety ($r = -0.20$ and $r = -0.25$ respectively) scores the relationships was incredibly weak. In terms of peer level of disclosure, the negative association between peer disclosure and depressive and anxiety outcomes was strong ($r = -0.82$ and $r = -0.86$ respectively). Hypothesis 6, regarding disclosure and IH, seemed to be supported in a similar vein. Both parental disclosure and peer disclosure were negatively associated with level of IH. However, the relationship was much stronger for peer disclosure ($r = -0.88$). Hypothesis 7, regarding familial level of disclosure and enforcement of gender appropriate behavior, was not supported by our results. However, higher levels of parental enforcement of gender appropriate behaviors were moderately associated with lower levels of peer disclosure (mother $r = -0.40$ and father $r = -0.53$). Hypothesis 8, regarding parental enforcement of gender appropriate behaviors and level of IH appeared to be supported by our results. Both motherly level of enforcement and fatherly level of enforcement were positively correlated with level of IH ($r = 0.47$ and $r = 0.56$). The relationship appeared to be somewhat stronger for fathers. For GB males hypothesis 9, regarding experiences of discrimination and level of mental distress, was supported with respect to general discrimination but not GLB discrimination. For GB males, general discrimination was highly correlated with level of depressive and anxiety symptoms ($r = 0.79$ and $r = 0.69$ respectively). While GLB discrimination was positively correlated with the outcome variables the association was much weaker ($r = 0.20$ and $r = 0.36$ respectively).

Table 5: Correlation Matrix of Select Outcome and Explanatory Variables for Gay and Bisexual Men

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Depressive Symptomatology(score)	1.00										
2. Anxiety Symptomatology (score)	0.94	1.00									
3. Mother Connectedness	-0.48	-0.42	1.00								
4. Father Connectedness	-0.53	-0.52	0.09	1.00							
5. General Discrimination	0.79	0.69	-0.34	-0.50	1.00						
6. Mother- Gendered Behaviors	0.44	0.42	-0.71	0.16	0.24	1.00					
7. Father- Gendered Behaviors	0.46	0.57	-0.44	0.17	0.12	0.86	1.00				
8. IH	0.68	0.78	-0.72	-0.16	0.45	0.47	0.56	1.00			
9. GLB Discrimination	0.20	0.36	0.31	-0.39	0.28	0.16	0.37	-0.05	1.00		
10. Familial Level of Disclosure	-0.20	-0.25	0.15	-0.08	0.26	0.17	-0.05	-0.45	0.56	1.00	
11. Peer Level of Disclosure	-0.82	-0.86	0.59	0.28	-0.41	-0.40	-0.53	-0.88	0.10	0.65	1.00

LB Females

Table 6 displays correlation coefficients for LB biological females. For LB females there did not appear to be any relationship between depressive and anxiety scores. With respect to specific hypotheses, hypothesis 4 regarding parental connectedness/support and mental distress, was only partially supported. Results indicated that there was no relationship between motherly connectedness/support and depressive and anxiety symptoms. However, there did appear to be a moderate negative relationship between fatherly connectedness/support and anxiety symptoms ($r = -0.61$). The relationship for depression score was also negative, however it was much weaker. Similarly, hypothesis 5, regarding mental distress and level of disclosure, was only partially supported. With respect to depressive symptomatology familial disclosure shared a weak negative association with depression score ($r = -0.23$). Peer level of disclosure appeared to show no relationship. In terms of anxiety level, familial disclosure appeared to have no relationship to

anxiety symptoms however peer disclosure had a moderate negative association with anxiety level ($r = -0.53$). Hypothesis 6, regarding IH and disclosure appeared to be supported in a similar fashion. Familial disclosure and peer disclosure were both negatively associated with IH however the relationship was much stronger for familial disclosure level ($r = -0.54$ and $r = -0.32$ respectively). Hypothesis 7 regarding familial level of disclosure and parental enforcement of gender appropriate behaviors was not supported by the data. Rather motherly and fatherly enforcement of gender appropriate behaviors were positively correlated with both familial level of disclosure and peer level of disclosure. Also, Familial level of disclosure was most highly correlated with motherly enforcement of gender appropriate behaviors ($r = 0.91$).

Hypothesis 8, regarding parental enforcement of gender appropriate behaviors and level of IH did not appear to be supported. Rather, IH shared a negative moderate association with motherly enforcement of gender appropriate behaviors ($r = -0.42$). The direction of the relationship between IH and fatherly enforcement of gender appropriate behaviors, was as hypothesized, however the relationship is weak ($r = 0.22$). Hypothesis 9, regarding experiences of discrimination and mental distress appeared to be partially supported. For LB women there was a moderate positive relationship between GLB discrimination and depressive level ($r = 0.54$).

There also appeared to be a positive association between general discrimination and depression and anxiety levels however the association was weak.

Table 6: Correlation Matrix of Select Outcome and Explanatory Variables for Lesbian and Bisexual

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Depression Symptomatology (score)	1.00										
2. Anxiety Symptomatology (score)	0.05	1.00									
3. Mother Connectedness	0.01	-0.09	1.00								
4. Father Connectedness	-0.22	-0.61	-0.41	1.00							
5. General Discrimination	0.36	0.31	-0.07	-0.45	1.00						
6. Mother- Gendered Behaviors	-0.01	-0.15	-0.57	0.24	0.35	1.00					
7. Father- Gendered Behaviors	0.52	-0.13	-0.50	0.12	0.44	0.70	1.00				
8. IH	0.40	-0.16	-0.05	0.31	0.00	-0.42	0.21	1.00			
9. GLB Discrimination	0.54	0.11	0.39	-0.33	0.56	0.30	0.38	-0.14	1.00		
10. Familial Level of Disclosure	-0.23	-0.02	-0.37	0.16	0.27	0.91	0.49	-0.54	0.36	1.00	
11. Peer Level of Disclosure	0.09	-0.53	0.21	0.25	-0.22	0.56	0.26	-0.32	0.63	0.55	1.00

Discussion

This study explored the mental health outcomes among GLB populations and the relationships between various risk and protective factors. As a general observation most hypotheses appeared to be partially supported by the data. For example, while depressive outcomes did not appear to be any more prevalent among GLB populations anxiety outcomes did. This was particularly true among GB males. Logistic regressions disaggregated by biological sex revealed that GB males were at a statistically significant greater risk of an anxiety outcome compared to their heterosexual counterparts. While it is important to exercise caution in generalizing these findings, particularly in light of the limited sample size and sampling

methodology, these results may suggest a legitimate public health concern, which warrants further investigation.

Analysis also revealed reasonable support for hypothesis 2. For both mother and father figures, Heterosexual respondents reported experiencing higher levels of parental connectedness/support than their GLB counterparts. When considering parental enforcement of gender appropriate behaviors however, it was only among father figures that we observed a significant difference in the enforcement of gender appropriate behaviors between biological males and females. That is, fathers more strictly enforced gender appropriate behaviors among sons than they did among daughters. This finding may suggest that male gendered behavior is more heavily scrutinized than female gendered behavior. That is, as D'Augelli (2003) suggested, gender atypicality is less acceptable among males than females and it is viewed as even less desirable by members of the same sex (e.g. other males). This may further suggest that it is not gender atypicality in and of itself that is undesirable but rather the homosexual connotations that gender atypicality carries. While a goal of this study was to untangle this complex process, we were unfortunately limited by our sample size.

Specifically regarding the GLB population again we observed this general trend of hypotheses being better supported among GB males than LB females. Recall, that certain relationships regarding enforcement of gender appropriate behavior appeared to be the reverse of what was hypothesized for LB respondents. Though this may be specific to our sample; it may also suggest a limitation in the theoretical frameworks from which hypotheses were developed. That is, they were more male centered and did not take into consideration the complex context specific to LB populations.

Despite this general trend there were specific findings among both the GB and LB populations that deserve further discussion. For both GB males and LB females, fatherly connectedness/support appeared to be a better indicator of mental health outcomes than motherly connectedness/support. That is, fatherly support tended to have a stronger association in the expected direction with depressive and anxious outcomes for both populations. Again this may be a finding specific for our sample, but it may also suggest limits in the theoretical framework from which hypothesized relationships were developed. On the other hand, it may also suggest the existence of a more dynamic relationship between child and mother than child and father. This is not intended to be a judgment, but rather to suggest that a child-father relationship may be more static or established whereas a mother-child relationship, at this juncture in life, may be in a renegotiation phase and thus expected relationships are less easily conceptualized.

In terms of disclosure practices and mental health outcomes analysis revealed that peer level of disclosure was more suggestive of depressive and anxiety levels than familial level of disclosure. This was particularly true of GB males and less so for LB females. In both instances, peer level of disclosure was negatively associated with anxiety levels, which is highly consistent with our hypothesis and the theoretical framework of hiding, identity management and its' inherent stressors. Furthermore, the strong relationship between peer level of disclosure and mental health outcomes may be reflective of the environment respondents are currently living in. That is, respondents are living away from home, most for the first time, and are in the process of establishing themselves as independent units. Thus, it seems reasonable that peer level of disclosure would be more related to one's level of mental distress than familial level of disclosure.

Level of disclosure was also found to have a negative association with IH for GB males and LB females. However, spheres of disclosure appeared to differ. That is, for GB males peer level of disclosure was more strongly related to IH than familial level of disclosure. For LB females however, familial level of disclosure was more highly related to IH than peer level of disclosure. This may suggest an underlying difference between GB males and LB females in support network structures. It may also suggest a reliance on different networks for a supportive environment as it relates to sexuality support. That is, GB males may more heavily rely on their peer group in constructing their attitudes about their own sexuality whereas LB females may more heavily rely on their family network.

Two of the most surprising findings of this study concerned the strong positive relationship between parental enforcement of gender appropriate behaviors (especially among mothers) and familial disclosure and the negative relationship between motherly enforcement of gender appropriate behaviors and IH. One possibility is that among the females under study there was some type of rebellion operating in which strict gender enforcement prompted a proud assertive reaction (thus low levels of IH) and disclosure of sexuality within the family unit. While this is purely speculative future research may seek to address this issue.

A major limitation of this study was the small sample size of GLB respondents. Such a small sample places major restrictions on statistical calculations (low power) as well as ability to generalize findings beyond the specific respondents under study. As such, and as has been stated, this study was highly exploratory in nature. In addition to the small sample size another major limitation concerned the reliance on one variable to measure sexual orientation. As such this study was primarily concerned with the mental health of self identified GLB persons. However, persons that could be defined as GLB through other measurements such as same sex sexual

partners or attractions may be of more interest when considering mental health outcomes.

Though this failure to self identify as GLB may simply be a choice and not reflective of mental health it may also be related to stigma, perceived homophobia, or internalized homophobia, which may have significant impacts on mental health. On the other hand, using behaviors or attractions may raise issues of validity in terms of researcher classification judgments. For example, what level of attraction or how many sexual acts move an individual from one classification grouping to another? Using multiple measurements for sexual orientation is likely the best choice in operationalizing sexual orientation however it was not feasible in this study. For example, as a function of the survey, which was administered to students, self-identified GLB respondents were given a set of questions related to internalized homophobia whereas heterosexual identified respondents did not see this set of questions. If one does not self identify as GLB but were to indicate that he/she had same sex attractions or same sex sexual partners at what point does the researcher decide that a given respondent is indeed GLB and should be administered the internalized homophobia instrument for example? If one is extremely closeted or truly not GLB this set of questions could be viewed as highly offensive. As the relationship between internalized homophobia and mental health outcomes was a major concept of interest in this study and administering the internalized homophobia instrument based on researcher judgments could be controversial, the use of a single self-identified sexual identity was seen as the most reasonable choice.

Another major limitation of this study was the non-random sampling framework. The population of interest in this study, while perhaps not difficult to reach is certainly difficult to identify. General population estimates of the U.S. GLB population tend to vary. Furthermore, as a subset of the general U.S. population, college students represent a specific group, which is not

necessarily reflective of the general U.S. population. This presents further methodological issues and or concerns which future research must address. As such, this study is highly exploratory in nature, with the aim of better conceptualizing risk and protective factors related to poor mental health outcomes within GLB populations. While findings may not be generalizable to broader GLB populations this work may serve a starting point, both in terms of further highlighting potential variables of interest as well as fueling interest in more solid methodological approaches when dealing with GLB populations.

Numerous researchers have documented higher rates of mental distress among GLB populations compared to their Heterosexual counterparts. This study attempted to build on this previous research and explore some of the risk and protective factors associated with mental health outcomes within the GLB population. In particular, we considered factors such as: parental support or connectedness, social support or connectedness, internalized homophobia, discrimination and stigma, disclosure practices, and gender performance. Though we were limited by our sample size in ability to examine all these factors simultaneously, we were able to explore various relationships using correlational techniques and other more qualitative approaches. Future research must seek to go beyond this and untangle the complex stress process GLB identified individuals are subjected to. Furthermore, future research must also seek to examine how the stress process operates within diverse contexts. One example of this might be taking into consideration how GLB identity is constructed and treated within the context of racial/ethnic identity. Other examples may concern different types of identity categories. Within the general health literature there are a number disparities that have been documented with regard to different identity classifications. Accordingly, it seems reasonable to assume that that this may extend to the GLB population as well. The importance of such research cannot be

overstated and given health trends apparent at the general population level such research seems warranted.

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