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"Poverty, Nonspecific Psychological Distress, and Sexual Identity among New York City  
Adults"

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"Poverty, Nonspecific Psychological Distress, and Sexual Identity among New York City  
Adults"

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Rollins School of Public Health of Emory University  
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Master of Public Health  
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2012

## Abstract

### "Poverty, Nonspecific Psychological Distress, and Sexual Identity among New York City Adults"

By Jennifer Munley

*Objective:* To determine if the association between poverty and nonspecific psychological distress varies by sexual identity.

*Methods:* Survey years 2005, 2006, and 2008 were combined from the New York City Department of Health and Mental Hygiene's Community Health Survey (CHS). In total 27,153 participants responses were analyzed to determine their poverty status, sexual identity, and experiences of psychological distress. Poverty status was dichotomized into those living above and below 200% of the federal poverty line. Sexual identity was dichotomized into those who reported being lesbian, gay, or bisexual (LGB) and those who reported being heterosexual. Using the Kessler-6 (K6) psychological distress questionnaire, respondents were dichotomized into those who had experienced nonspecific psychological distress in a 30 day period and those who had not experienced psychological distress in a 30 day period. A multivariate logistic regression was performed to determine the association between poverty and sexual identity on the outcome variable, nonspecific psychological distress. An interaction term that combined poverty and sexual identity was also included in the model.

*Results:* Almost 9% of those who identified as lesbian, gay, or bisexual experienced nonspecific psychological distress in a 30 day period compared to only 6% of individuals who identified as heterosexual. Approximately 11% of those living in poverty experienced nonspecific psychological distress in a 30 day period compared to only 4% of individuals not living in poverty. Racial/Ethnic sexual minorities living in poverty were more likely than non-Hispanic White sexual minorities living in poverty to experience nonspecific psychological distress. In particular, those who identified as Hispanic [AOR 5.19, 95% CI 4.13-6.51] and Other [AOR 5.04, 95% CI 3.57-7.13] had the highest likelihood of experiencing nonspecific psychological distress.

*Conclusion:* There are few studies that examine the association between poverty, sexual identity, and nonspecific psychological distress. The results of this study illustrate that an association between these variables does exist when race/ethnicity is considered. Further research needs to address racial disparities in mental health among lesbian, gay, and bisexual individuals, particularly those living in poverty.

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## **Chapter 1 Introduction**

The number of adults in the United States living in poverty is the highest it has been in the fifty-two years that poverty has been measured (DeNavas, Proctor, Smith, 2011). These 46.2 million adults living in poverty may lack access to food, education, (clean) water, shelter, sanitation facilities and basic needs. In addition, these adults are often unable to access care they may need, particularly care to address mental health issues. The stress of living in poverty is compounded when an individual identifies as lesbian, gay, or bisexual.

Sexual minorities (those who identify as lesbian, gay, or bisexual) experience “homosexual stigma” that is unique to those who identify as a sexual minority (Herek, Chopp, Strohl, 2007). Meyer (2003) demonstrates through the Minority Stress Model how this added stigma and additional social stress are associated with being a sexual minority. This stigma and stress have been found to be associated with negative mental health outcomes in sexual minorities (Meyer, 2003).

To date, few studies have looked at the association between poverty and sexual minority status on mental health outcomes. In particular, no study has examined if the association between poverty and nonspecific psychological distress varies by sexual identity. Since literature has demonstrated the increased prevalence of mental health outcomes in both those in poverty and sexual minorities (Herek, Chopp, Strohl, 2007; Meyer, 2003; LaSala, 2010; Belle and Doucet, 2003) it is important to explore the relationship between these two variables and mental health outcomes.

This study used New York City Department of Health and Mental Hygiene Community Health Survey (CHS) data from the years 2005, 2006, and 2008 to

investigate the association between poverty, sexual identity, and mental health outcomes. Nonspecific psychological distress (NPD), a non-specific category of distress marked by a collection of psychological and somatic symptoms that indicate a range of mental disorders, was used as a proxy for mental health outcomes. The aim of this study was to determine if the association between poverty and nonspecific psychological distress differs by sexual identity.

## **Chapter 2 Literature Review**

This review of literature will examine non-specific psychological distress, poverty, sexual identity, and the association between them. In particular, mental health issues and poverty among sexual minorities will be discussed. The review of literature also includes this study's contribution to the field of public health and beyond.

### ***Non-specific Psychological Distress***

Non-specific psychological distress (NPD), also known as serious psychological distress, is a non-specific category of distress marked by a collection of psychological and somatic symptoms that are common among those with a range of mental disorders (McVeigh et al., 2006). NPD is considered to be a possible indicator of serious mental illness (SMI) (Connor & Ziege, 2009). Generally, SMI is considered to be the presence of at least one Diagnostic and Statistical Manual of Mental Disorders (DSM) disorder in a twelve month period, other than substance use disorders (Kessler et al., 2003).

Typically, NPD is characterized by elevated levels of behavioral, emotional, cognitive, or psychological symptoms that are not specific to any one disorder; rather, these symptoms are common among individuals with a range of mental disorders (McVeigh et al., 2006; Kessler et al., 2003). NPD is highly associated with symptoms of anxiety disorders and depression but does not identify a specific mental illness (Centers for Disease Control and Prevention [CDC], 2011). Generally, NPD is used as a screening tool in large-scale surveys such as the National Survey on Drug use and Health as well as the Behavioral Risk Factor Surveillance System Survey to examine the prevalence of a broad range of mental disorders in the general population (Substance Abuse and Mental Health Services Administration, 2008; CDC, 2011)

The Substance Abuse and Mental Health Services Administration (SAMHSA) conducts a yearly National Survey on Drug Use and Health (NSDUH) (Substance Abuse and Mental Health Services Administration, 2008). The NSDUH estimated that in 2007, approximately 10.9% of the adult population (24.3 million adults) experienced NPD in the previous year. The Centers for Disease Control and Prevention also collects yearly data on a variety of indicators such as NPD in the Behavioral Risk Factor Surveillance System (BRFSS) and the National Health Interview Survey (NHIS). In 2007, the BRFSS, using a different cutoff point of 13 (compared to a cutoff of 10 in the NSDUH), found that approximately 4.0% of adults in 35 states had experienced NPD in the previous 30 days. While the exact numbers differ, the estimates illustrate the prevalence of NPD throughout the United States (Substance Abuse and Mental Health Services Administration, 2008; CDC, 2011).

While NPD can affect anyone, certain characteristics have been identified as correlates of NPD. In particular, specific race/ethnic and age groups have been found to have higher rates of NPD. In addition, certain health outcomes are frequently associated with NPD or the sufferers have an increased risk of experiencing NPD. These confounding associations have been found in both national and New York City specific samples. The following literature provides a background on these associated factors and their relationship with NPD.

#### *Nonspecific Psychological Distress and Race/Ethnicity*

In 2005, Bratter and Eschbach explored the racial/ethnic differences among those who reported experiencing NPD. Using data from the National Health Interview Survey from the years 1997-2001, the researchers found that the rates of NPD differed greatly by

racial/ethnic identity. Using non-Hispanic Whites as the comparison group, researchers found that Native Americans, Puerto Ricans, and those who identified as racially mixed reported higher levels of distress (Brattner and Eschback, 2005). Those who identified as Mexican and Asian/Pacific Islander reported lower levels of distress. African Americans and other Hispanics had similar levels of distress as non-Hispanic Whites (Bratter, Eschback, 2005).

McVeigh et al (2006) found similar results in an analysis of New York City residents who participated in the annual Community Health Survey (CHS) in the years 2002 and 2003. Results of this analysis found that Blacks/African Americans had a lower likelihood of experiencing NPD compared to non-Hispanic Whites. They also found that Hispanics were more likely to experience NPD than non-Hispanic Whites. Albrecht and McVeigh (2012) found that Hispanics were twice more likely to experience NPD than non-Hispanic Whites. In particular, they found that Puerto Ricans had the highest rates of NPD among all Hispanic groups. New York City Hispanics were found to have three times the prevalence of NPD compared to Hispanics in the United States overall. New York City racial/ethnic groups had significantly higher rates of NPD compared to US estimates for their racial/ethnic counterparts, with the exception of Mexicans (Albrecht and McVeigh, 2012)

#### *Nonspecific Psychological Distress and Age*

While race can be a risk factor for experiencing NPD, age can as well. In 2009, Pratt found that individuals aged 45-54 were more likely to experience NPD than those younger and older. Mojtabai (2005) also found this age group to be the most at risk as well. Looking at National Health Interview Survey data from 1997-2002, Mojtabai found

that 36.1% of adults between the ages of 45-64 experienced NPD compared to only 28.6% of other age groups. These results are similar to those found in New York City, where adults aged 45-54 were found to have to have higher rates of NPD than other age groups (Mcveigh et al, 2006). While these findings illustrate the elevated risk for the 45-64 age group, there is little literature to suggest the exact mechanisms that leave this particular age group more vulnerable to NPD compared to other age groups.

#### *Nonspecific Psychological Distress and Other Health Outcomes*

A connection has been found between a variety of negative health outcomes and NPD. In particular, the BRFSS found respondents with NPD were more likely to smoke, be obese, and report receiving a diagnosis of heart disease (Substance Abuse and Mental Health Services Administration, 2008; CDC, 2011). These findings are not unlike those for mental illness as a whole. Mental illness is associated with chronic disease and its resulting morbidity and mortality (McVeigh, 2006). The morbidity from chronic disease such as cardiovascular disease, diabetes, asthma, epilepsy, and cancer is aggravated by mental illness. Both intentional and unintentional injury rates are also two to six times higher for persons with mental illness. Although previous studies have explored these links, findings on the directionality of these correlations have been mixed. Some studies have found that smoking and diabetes have a bidirectional effect, with the health outcomes (depression and anxiety) occurring before the risk in some, and after the risk in others. Overall, those suffering from poor mental health may be less likely to engage in health promotion behaviors such as seeking help for possible conditions, thus leading to an association between mental health and negative health outcomes (Prince et al, 2007).

While the population-based surveys previously mentioned offer nation-wide prevalence estimates, they do not offer insight into NPD estimates in specific urban areas in America. Individuals residing in urban areas may deal with health risks and consequences unique to the built environment around them. These differences may adversely affect the mental health of those living in these areas. Diverse and densely populated, New York City residents encounter challenges to their mental health and well-being that may not be found in other parts of the country. These challenges may put these residents at risk for elevated risks of negative mental health outcomes, indicated by NPD. McVeigh et al. (2006) found that a population-based survey of NYC adults yielded elevated rates of NPD in 2002 when compared to national estimates (6.4% vs. 3.0%). This elevated risk demonstrates a need for further research to determine current rates of NPD in New York City and associated risk factors that may aggravate this distress, such as poverty

### ***Poverty***

When discussing socio-economic status and health disparities, the term poverty is often discussed. A commonplace term, poverty is also a complex construct that has varying definitions and measures. In the United States, the definition of poverty focuses on income and economic resources, rather than consumption and well-being (Blank, 2008). Poverty is also an ambiguous term with many social and statistical definitions. Socially, poverty is often used to describe individuals who have low or no income and cannot meet basic needs as well access food, education, (clean) water, shelter, and sanitation facilities.

The United States Federal Government uses a statistical measurement to define poverty (U.S. Department of Health and Human Services, 2011). These guidelines, mandated by the Office of Budget and Management, determine poverty using a set of money income thresholds that vary by family size and composition. If the family's total combined income is less than this threshold than every family member and individual in the household is considered to be in poverty. These guidelines do not vary based on geographic location. Rather, they fluctuate based on inflation based on the Consumer Price Index (U.S. Census Bureau, 2011).

Poverty status is determined before taxes and does not include noncash benefits like Medicaid, Medicare, and Food Stamps. It does include income sources such as wages, unemployment compensation, Social Security, survivor benefits, pension funds, child support, alimony and other assorted sources. This measure of need is also known as poverty threshold. Poverty thresholds are the dollar amounts used to determine poverty status. While poverty thresholds provide this guideline, they are not meant to solely describe families' needs. Updated every year by the Census Bureau, poverty thresholds are meant to act as a statistical measure to calculate official poverty statistics (U.S. Census Bureau, 2011).

Utilized by the Department of Health and Human Services, poverty guidelines have a more administrative purpose. HHS uses poverty guidelines to determine eligibility for certain programs like Head Start, the National School Lunch Program, and legal services for the poor. Like the poverty threshold, guidelines vary by family size. Unlike the poverty threshold there is geographic variation. There is one figure for the 48 contiguous states and Washington D.C. Alaska and Hawaii each have their own



individual guidelines. Both the poverty threshold and poverty guidelines are issued yearly (U.S. Census Bureau, 2011).

The latest poverty estimates were issued by the United States Census Bureau on September 13, 2011. Official poverty rates were reported to have risen to 15.1% in 2010. This is an increase from 2009, which saw a poverty rate of 14.3%. With this increase, 46.2 million Americans now live in poverty, compared to 43.6 million in 2009. This is the fourth consecutive increase of individuals living in poverty and the highest number of Americans living in poverty in the fifty-two years that poverty has been estimated (DeNavas, Proctor, and Smith, 2011; U.S. Census Bureau, 2011).

#### *Poverty in New York City*

The poverty level in New York City, one of the most visible large cities in the United States, surpassed the national average of those living in poverty. With an increase of approximately 75,000 residents living in poverty, New York City's poverty rate increased to 20.1% in 2010, the highest since 2000 (Roberts, 2011). Prior to this increase, the city's poverty rate was around 18% in 2007 and 18.7% in 2009. The city has seen a flux in poverty status by decade, with the poverty rate at 20% in 1980, 19.3% in 1990 and 21.2% in 2000 (Roberts, 2011).

Previous national estimates of NPD have shown an association with economic status (CDC, 2011). McVeigh et al. (2006) discovered a negative linear relationship between NPD and income status among New York City residents. With the rising costs associated with mental illness along with increasing rates of poverty, NPD rates may also be rising in New York City, particularly among those living in poverty.

### *Poverty and Nonspecific Psychological Distress*

Although the association between poverty and mental illness has been studied for many years, no consensus has been reached regarding the exact mechanisms that support this association (Costello, Compton, Keeler, Angold, 2003). Instead, a variety of mechanisms have been identified and examined within a variety of contexts. Broadly, poverty often imposes stressors on an individual while possibly blocking access to support systems (Belle & Doucet, 2003). This lack of support can lead to increased susceptibility to depression as well as anxiety and NPD. Other evidence has suggested that characteristics of the urban built environment may influence mental health and depression. In particular, social disorganization has been proposed as a stressor on mental health.

The NPD and poverty estimates and prevalence rates that are prepared and disseminated to the public provide information on the adult non-institutionalized population of the United States as a whole. While demographic subgroup information can be obtained, little focus has been placed on the effect of these outcomes in marginalized populations, particularly sexual minorities.

### *Sexual Minorities*

Coming out, and subsequently living as an openly lesbian, gay, or bisexual individual (LGB), is often a difficult experience due to the stigma that is frequently associated with declaring a sexual identity that contradicts the default heterosexual norm. Herek, Chopp, and Strohl (2007) define “homosexual stigma” as “society’s shared believe system through which homosexuality is denigrated, discredited, and constructed as invalid relative to heterosexuality” (p. 171). This stigmatization can

take place in a variety of settings within the home and community and can manifest itself as verbal and/or physical harassment and abuse. As LGB individuals try to merge their sexual orientation and status as stigmatized individuals, there is greater risk for mental health issues (LaSala, 2010).

Research suggests that compared to their heterosexual counterparts, LGB individuals suffer from more mental health problems including depression and suicidality (Birkett, Espelage, Koenig, 2009). It is currently hypothesized that the cause of the higher prevalence of disorders among LGB individuals is that stigma, prejudice, and discrimination create stressful social environments (Meyer, 2003). It is believed that the stigmatization of homosexuality in American culture has led to higher levels of “unpredictable, episodic, and day-to-day social stress” in LGB individuals than in their heterosexual counterparts (Cochran and Mays, 2000, p. 519).

#### *Minority Stress Model in Lesbian, Gay, and Bisexual Populations*

Meyer (2003) discusses the minority stress model and its implications for lesbian, gay, and bisexual individuals. Minority stress is an additional stressor that compounds general stressors felt by all people. These additional stressors require the stigmatized individual to adapt and respond in ways that the general population is not required to (Meyer, 2003). To respond to these stressors, coping and resilience is necessary. Unfortunately, the processes through which an individual can cope may be affected by group-level resources. That is, availability and access to these group-level resources may depend on specific characteristics, including minority status. If sexual minority status acts as a barrier to these resources, they can detract from coping and

further an individual's feeling of stigma (Meyer, 2003). This stigma acting as an additional stressor may manifest itself in psychological distress.

#### *Sexual Minorities and Nonspecific Psychological Distress*

As previously mentioned, estimates of NPD are limited to nationwide samples and demographic subgroups such as age and race. Estimates of NPD among sexual minorities are scarce. Although NPD estimates among sexual minorities nationwide is limited, an estimate of NPD among sexual minorities in New York City is available. Compared to their heterosexual counterparts, sexual minorities are more likely to experience NPD (8% vs. 6%) (McVeigh et al., 2006). These findings support the assertion that sexual minorities are an at-risk group for mental health conditions and illness.

#### *Poverty in Lesbian, Gay, and Bisexual Populations*

A pervasive myth is that of sexual minority affluence. While there are affluent sexual minority individuals, there are also many living in poverty. As Albelda et al. (2009) explain, "The social and policy context of LGB life provides many reasons to think that LGB people are at least likely-and perhaps more likely-to experience poverty as are heterosexual people." (p. i). Sexual minorities experience events that are specific to their identity and are not as commonly experienced by heterosexuals. Vulnerability to employment discrimination, inability to marry in most states, higher rates of being uninsured, decreased family support, and family conflict over coming out are situations that may increase the likelihood of poverty among sexual minorities.

This information is included in a report by the Williams Institute entitled, "Poverty in the Lesbian, Gay, and Bisexual Community." This report is one of the only

comprehensive reports to utilize data from large scale surveys (Census 2000, National Survey of Family Growth [NSFG], and the 2003 and 2005 California Health Interview Survey) to provide clear evidence that poverty is as much, if not more, of an issue among sexual minorities (Williams Institute, 2009).

Using data from the NSFG, the Williams Institute found that lesbian and bisexual women were more likely to be living in poverty compared to heterosexual women (24% vs. 19%). In particular, lesbian women (couples) 65 years or older are twice as likely to be living in poverty compared to heterosexual couples. LGB couples are more likely to be living at 200% of the federal poverty line; while only 17.7% of different-sex married couples were living at this poverty line, 28.4% of LGB couples were living at this poverty line (Williams Institute, 2009).

### ***Summary***

This study will examine the association between poverty and non-specific psychological distress among adults in New York City. The association will then be contrasted between heterosexuals and sexual minorities to assess any disparities. The findings will contribute to understanding the link between poverty and non-specific psychological distress in a large urban setting. The results will also contribute to the further understanding of the mental health disparities between heterosexuals and sexual minorities. These research findings will provide a foundation for further research as well as contribute valuable results of an understudied topic in a marginalized population.

## **Chapter 3 Methods**

### ***Study Design***

#### *New York City Community Health Survey*

This study is a secondary data analysis of data collected through the New York City Community Health Survey in 2005, 2006, and 2008. The New York City Community Health Survey (CHS) is an annual survey conducted by the New York City Department of Health and Mental Hygiene. The Community Health Survey is based on the National Behavioral Risk Factor Surveillance Survey (BRFSS), an annual survey conducted by the Centers for Disease Control and Prevention. The survey has a goal of 10,000 participants annually. Data has been collected using the survey since 2002. The data collected in the CHS is used to understand the health and risk factors of New York City residents and to track key indicators such as access to care, mental health, sexual behavior, and smoking status over time (McVeigh et al., 2006; New York City Department of Health and Mental Hygiene, 2012).

The CHS uses a stratified random sampling technique to construct citywide and neighborhood estimates. Strata are defined using the United Hospital Fund's (UHF) neighborhood designation. There are 42 UHF neighborhoods in New York City, each comprised of adjoining zip codes. For the purpose of the survey, 42 neighborhoods are condensed to 34 by merging selected adjoining neighborhoods (New York City Department of Health and Mental Hygiene, 2012).

The CHS sampling frame consists of a list of telephone numbers for each UHF neighborhood provided by a commercial vendor. A computer-assisted telephone

interviewing (CATI) system is used to collect survey data. A maximum of ten attempts are made to reach each telephone number. During each wave of data collection, prospective participants are asked their zip code at the beginning of each call to ensure that the quota has not been met for their neighborhood. If eligible, one adult is randomly selected from each participating household. Respondents are informed of their rights and participants are told that the survey is confidential and anonymous (New York City Department of Health and Mental Hygiene, 2012).

Interviewing is conducted in many languages. Every year, the questionnaire is translated from English into Spanish, Russian, and Chinese. From 2002 to 2007 data was collected by CUNY Baruch College Survey Research Unit. Starting in 2008, Abt-SRBI, a survey research company based in New York City, began collecting data for the CHS. The length of the survey is approximately 25 minutes. In each of the years examined, data collection began in March and ended in November (New York City Department of Health and Mental Hygiene, 2012).

## ***Measures***

### ***Primary Dependent Variable***

Nonspecific Psychological Distress (NPD), a non-specific category of distress marked by a collection of psychological and somatic symptoms that are common among those with a range of mental disorders, was assessed in the CHS using the K6 scale. The K6 is a validated scale designed by Kessler and colleagues to assess/screen the general population for prevalence of mental disorders such as depression and anxiety (Kessler et al., 2002). The K6 scale is comprised of six questions that ask respondents how often

they have felt “sad,” “nervous,” “restless,” “hopeless,” “worthless,” or that “everything was an effort” in the previous 30 days. Response options include “all of the time,” “most of the time,” “some of the time,” “a little of the time,” or “none of the time” and are assigned numeric values that range from 0 (none of the time) to 4 (all of the time). Composite scores range from 0-24; the CHS uses scores of 12 and above to indicate NPD (McVeigh et al., 2006). The variable of NPD was dichotomized by those with NPD (those with a score of 12 and above) and those without NPD (scores under 12).

#### *Key Independent Variables*

Poverty status was assessed in the CHS by a question asking the respondent the total household income from all sources. Responses were then categorized into those above and below 200% of the poverty level. Sexual Identity was assessed by one question that asked respondents to identify as heterosexual, gay/lesbian, or bisexual.

#### *Other Variables of Interest*

Participant’s sex was assessed by one question asking respondents to describe their sex as either male, female, or I don’t know. Age was determined by one of two questions. The first question asked respondents to provide their age. The second question was a follow up for those who refused to give their exact age. This second question asked participants to designate an age category (18-24, 25-44, 45-64, and 65 and up). Race was determined by participants choosing the race that best described them. The response options for this question were White, Black/African-American, Hispanic, Asian/Pacific Islander, and Other. Survey year was based on the year that the participants completed the survey (2005, 2006, or 2008). Nativity was dichotomized by those born within the United States and those born outside of the United States. Participant’s education was determined by one question asking



them to choose their highest level of education out of four choices-less than high school, high school, some college, and college.

### *Statistical Analysis*

To ensure adequate statistical power, survey years 2005, 2006, and 2008 were combined. The year 2007 did not measure NPD and thus was not included in the dataset. Descriptive statistics were produced to provide overall totals of the variables involved in the analysis. In addition, descriptive statistics were used to report specific counts of individuals with and without NPD by variable.

For all analyses, the outcome of interest was whether the responder had NPD or not. Chi square tests were conducted between the primary variables of interest (poverty and sexual identity) as well as sex, age, race, nativity, and survey year and the outcome variable (NPD) at the bivariate level. Also included was an interaction term of poverty and sexual identity. All proposed predictors that were associated with the outcome variable at  $p < .20$  were included in the multivariate logistic regression model.

Sex, age, race, nativity, survey year, sexual identity, and poverty status along with the interaction term were entered into the full logistic regression model. This full model served as comparison model for subsequent models. To assess possible confounding, each variable except for poverty, sexual identity, and the interaction term, were removed individually to determine if the odds ratio of the predictor was within 10% of the comparison model. Variables that caused the odds ratio to remain within the 10% were removed from the model. Variables that caused the odds ratio to exceed the 10% limit were kept in the model to control for as a potential confounder. In each step, a variable was removed from the model until there were no longer variables to remove. Based on the results of these

models and the importance of the variable in the available literature, all variables except nativity and education were included in the final model. Additional tests were performed within the model to compare varying levels of selected variables (LGB, poverty, and race). All statistical tests were performed using SAS 9.3 (SAS Institute, Cary, North Carolina).

## Chapter 4 Results

### *Sample Demographics*

Table 1 summarizes the descriptive statistics of the study population. There were 9,916 respondents in 2005, 9,683 in 2006, and 7554 in 2008 for an overall sample total of 27,153. The analysis shows that 6.7% (n=1799) of the survey participants met the criteria for nonspecific psychological distress (NPD). Of these respondents, 8.9% (n=2312) identified as lesbian, gay, or bisexual with 9.4% (n=214) having experienced NPD. A little over a third of the participants (n=9312, 37.6%) reported being at or below 200% of the poverty level. Approximately 12% (n=1075) of these individuals living in poverty also experienced NPD. More than half of the adults that completed the survey were female (n=16593, 61.1%). Of these female respondents, 7.5% (n=1231) experienced NPD. Few participants were aged 18 to 24 (n=1684, 6.2%). Most were 25 to 44 (n=9489, 35%), 45 to 64 (n=9917, 36.5%) or 65 and older (n=5994, 22.1%).

A majority of the participants identified as White (n=10937, 40.3%). Approximately a quarter identified as Black (n=6817, 25.1%), 7.2% as Asian (n=1961), 24.4% as Hispanic (n=6624), and 3.0% as Other (n=814). Of these racial/ethnic groups, those who identified as Hispanic (n=714, 10.9%) and Other (n=70, 8.8%) had the highest rates of NPD. Most of the participants completed high school (n=22196, 82.7%). Those who did not complete high school had the highest rates of NPD among all education groups (n=595, 13.0%).

### ***Bivariate Analysis***

Chi-square tests were performed between all variables and NPD [Table 2]. Each variable was found to be significantly associated with NPD except for the year 2005 ( $x^2=0.02$ ,  $p=0.8901$ ), [Table 2]. Variables LGB ( $x^2=33.89$ ), Poverty ( $x^2=500.42$ ), Sex ( $x^2=43.32$ ), Nativity ( $x^2=17.39$ ), Hispanic ( $x^2=244.4$ ), Less than HS ( $x^2=349.69$ ), College ( $x^2=241.84$ ), and Age 45-64 ( $x^2=58.52$ ) were found to be significant at the  $<.0001$  level.

### ***Multivariate Logistic Regression***

The interaction term for poverty and LGB was found to be significant ( $p=0.04$ ). Thus, the odds ratios for poverty and LGB cannot be interpreted by themselves because a change in either variable significantly impacts the other Table 3 illustrates the odds ratios for the interaction term and all of variables in the model.

This analysis found that overall, females were 1.3 times more likely to report NPD than males (AOR=1.31; 95% CI 1.17-1.46). Asian respondents were 25% less likely to report NPD compared to white respondents (AOR=0.75 95% CI 0.59-0.96). Hispanics (AOR=1.59, 95% CI 1.39-1.82) and those who identified as Other (AOR=1.55, 95% CI 1.17-2.05), however, were more likely to report NPD. Respondents age 45 to 64 were 1.7 times more likely to report NPD than those 18 to 24 (AOR=1.71, 95% CI, 1.35-2.16). Survey year 2006 ( $p=0.16$ ) and 2008 ( $p=0.08$ ) were not significantly associated with NPD.

LGB individuals living at or below 200% of the poverty line (in poverty) were 3.3 times more likely to report NPD than heterosexual individuals not living in poverty (AOR=3.26, 95% CI 2.63- 4.05,  $p<.0001$ ) [Table 4]. LGB individuals in poverty were 2.0

times more likely than LGB not in poverty to report NPD (AOR=2.04, 95% CI 1.5-2.78,  $p<.0001$ ). LGB individuals living in poverty did not have a significant difference in NPD compared to heterosexual individuals living in poverty ( $p=0.25$ ).

Although results comparing LGB individuals in poverty to heterosexual individuals in poverty were not significant, the results looking at individual race groups did produce significant results. Hispanic LGB individuals in poverty were 5.2 times more likely to report NPD than non-Hispanic White heterosexual individuals living in poverty (AOR=5.19, 95% CI 4.13-6.51,  $p<.0001$ ). Similarly, LGB individuals in poverty who identified their race as 'Other' were 5.0 times more likely to report NPD than 'non-Hispanic White heterosexual individuals in poverty (AOR=5.04, 95% CI 3.57-7.13,  $p<.0001$ ). Asian respondents who identified as LGB and in poverty were 2.44 times more likely to report NPD than heterosexual non-Hispanic White in poverty (AOR=2.44, 95% CI 1.78-3.33,  $p<.0001$ ). Black respondents who identified as LGB and in poverty were 2.99 times more likely to report NPD than heterosexual non-Hispanic Whites in poverty (AOR=2.44, 95% CI 2.32-3.86,  $p<.0001$ ).

## Chapter 5 Discussion

One of the most important findings of this study is the effect of race/ethnicity on NPD among LGB individuals in poverty. While White and Black LGB respondents in poverty had no significant difference from White and Black LGB individuals not in poverty, the rates for Asian, Hispanic, and Other individuals was striking. This difference was most seen among those who identified as Hispanic or Other. These results support recent findings by Albrecht and McVeigh (2012), who found that Hispanics in New York City had elevated rates of NPD compared to a comparable national sample of Hispanics. They also found that a large portion of this disparity was attributable to a difference in socioeconomic status.

Those identified as Other were also more likely to have higher rates of NPD. Unfortunately, available data does not allow for analysis of this 'Other' designation so there is no way to determine the exact racial/ethnic identity of these individuals. Increased NPD among this group may be attributed to cultural differences as well as adjusting in a new large urban environment like New York City.

LGB individuals living in poverty were also found to have higher rates of NPD compared to heterosexual individuals not living in poverty. Both sexual minorities and heterosexual individuals in poverty, when compared to their counterparts not in poverty, had higher rates of NPD. Results show no significant difference in the rate of nonspecific psychological distress (NPD) by sexual identity among those living in poverty independent of racial consideration.

These results further highlight the connection between poverty and negative mental health outcomes. When compared to those in not in poverty, those in poverty,

regardless of sexual identity, were far more like to experience NPD. With rising poverty rates, particularly in urban areas like New York City, the rates of NPD may also be increasing as well (Roberts, 2011)

The analysis showed a higher prevalence and increased risk among adults aged 45-64. These findings are consistent with national and New York City specific data which have also found increased rates of NPD among this age group (Pratt, 2009; Mojtabai, 2005; McVeigh et al, 2007). While the findings are consistent, there has been very little data to demonstrate why this risk exists. It is possible that this age category faces financial and personal level stressors that are greatly different than those faced by other age groups.

Those in poverty, who identify as lesbian, gay, or bisexual, who experience mental distress, and who identify as a racial/ethnic minority experience stigma and stress by being members of each of these groups. When an individual is a member of one or more of these groups, there is increased stigma and stress. Individuals may not have the resources to cope with these additional stressors, particularly those in poverty. It is important to recognize the increased risk for individuals belonging to multiple stigmatized groups. As shown in the analysis, these groups are the most susceptible to increased nonspecific psychological distress, possibly based on their minority statuses.

### ***Limitations***

One of the major limitations of this analysis is the inability to generalize the results to the entire population of New York City. Due to the complex survey design employed in the Community Healthy Survey, data needs to be weighted to be generalizable to this population (New York City Department of Health and Mental

Hygiene, 2012). This weight adjusts for the probability of selection. It also consists of a post-stratification weight which takes respondents age, gender, and race into consideration while weighting each record up to each UHF neighborhoods population. At the time of this report, the combined weights for the years 2005, 2006, and 2008 were unavailable. Thus, the analysis is representative only of the 27, 153 individuals who took the survey in 2005, 2006, and 2008.

Another limitation is the sampling methodology employed. In survey years 2002-2008, only households with a landline telephone were included in the survey. According to Lavrakas, Shuttles, Steeth, and Fienberg (2007), it has been hypothesized that 40% of the population under 30 years of age has adopted a “cell phone only” lifestyle and thus, samples that do not include cell phones may not be representative of the population, particularly younger adults. Adults undergoing inpatient treatment, living in college dormitories or other group settings, and who were homeless were not included as well. The data are self-reported and thus may not fully capture all individuals with NPD.

Estimates included in this analysis were based solely on sexual identity, rather than behavior or a combined measure of sexual identity and sexual behavior. Respondents were limited to choosing heterosexual, lesbian/gay, or bisexual as their sexual identity. Some respondents may not identify with any of these terms. Other respondents may engage in sexual behavior that is associated with these terms, but may not identify themselves as being part of a particular group. Thus, the actual number of lesbian, gay, and bisexual individuals in residing in New York City may be different than reported estimates.



### ***Future Directions***

The results demonstrate a need for further research in this area. Findings show that LGB racial/ethnic minorities in poverty are at greater risk for experiencing nonspecific psychological distress compared to their heterosexual counterparts. Further research should explore this association not only in large urban areas like New York City, but in national samples as well.

Further research can also identify the background of those identifying as Other as well as risks that may be associated with this identity. Further research is warranted to investigate why these racial/ethnic differences exist among LGB individuals in poverty. Additionally, it is necessary to ensure culturally appropriate intervention and treatment opportunities are available for these at-risk populations.

It is also important to further investigate differences among each sexual minority group. While lesbian, gay, and bisexual individuals may face similar health challenges and risks as sexual minorities, there are also health issues that are unique to each sexual identity. It is important to explore health topics for each sexual minority to ensure equitable paradigms of health for all individuals.

It is also important to evaluate the existence and performance of prevention and intervention programs targeting at-risk groups such as those mentioned above. Stigma regarding status as a sexual and racial/ethnic minority as well as lower economic status may negatively impact an individual's health and may lead to greater health risks based on this intersectionality.

***Conclusion***

While there has been little research into the risk of poverty for mental health outcomes among lesbian, gay, and bisexual individuals, results from the New York City Community Health Survey indicate a need to further explore this association. Rates of nonspecific psychological distress are elevated in LGB individuals in poverty who identify as racial/ethnic minorities in New York City. Further research is needed to determine the extent to which these elevated risks are found in other areas of the country and appropriate intervention and treatment programs.

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**Table 1. Sample Characteristics of 27,153 Adults Participating in the New York City Community Health Survey in 2005, 2006, and 2008**

	Overall	NPD*	Without NPD*
	n(%)	n(%)	n(%)
<b>Sexual Identity</b>			
Heterosexual	23529 (91.1)	1457 (6.2)	2196 (93.8)
Lesbian, Gay, Bisexual	2312 (8.9)	214 (9.4)	2067 (90.6)
<b>Poverty Status</b>			
Above 200%	15485 (62.5)	640 (4.2)	14780 (95.8)
Below 200%	9312 (37.5)	1075 (11.6)	8162 (88.4)
<b>Nativity</b>			
US Born	16575 (61.2)	1016 (6.2)	15458 (95.8)
Foreign Born	10491 (38.8)	777 (7.5)	9624 (92.5)
<b>Race</b>			
White	10937 (40.3)	521 (4.8)	10331 (95.2)
Black/African-American	6817 (25.1)	397 (5.9)	6381 (94.1)
Asian/Pacific Islander	1961 (7.2)	97 (5.0)	1856 (95.0)
Hispanic	6624 (24.4)	714 (10.9)	5863 (89.1)
Other	814 (3.0)	70 (8.8)	729 (91.2)
<b>Sex</b>			
Male	10560 (38.9)	568 (5.4)	9914 (94.6)
Female	16593 (61.1)	1231 (7.5)	15246 (92.5)
<b>Age Group</b>			
18-24	1684 (6.2)	89 (5.3)	1587 (94.7)
25-44	9489 (35.1)	556 (5.9)	8881 (94.1)
45-64	9917 (36.6)	808 (8.2)	9036 (91.8)
65 +	5994 (22.1)	344 (5.8)	5597 (94.2)
<b>Education</b>			
Less than high school	4632 (17.3)	595 (13.0)	3999 (87.0)
High School	6536 (24.3)	493 (7.6)	5999 (92.4)
Some College	5575 (20.8)	329 (5.9)	5211 (94.1)
College	10085 (37.6)	362 (3.6)	9657 (96.4)
<b>Year</b>			
2005	9916 (36.5)	659 (6.7)	9176 (93.3)
2006	9683 (35.7)	695 (7.2)	8937 (92.8)
2008	7554 (27.8)	445 (5.9)	7047 (94.1)

\*Nonspecific psychological distress

**Table 2. Bivariate Analysis for Variables Related to Nonspecific Psychological Distress among Adults in the New York City Community Health Survey**

	$\chi^2$	p-value
Lesbian, gay, bisexual (LGB)	33.89	<.0001
Poverty	500.42	<.0001
<b>Race/Ethnicity</b>		
White	102.22	<.0001
Black	9.68	0.0019
Asian	9.84	0.0017
Hispanic	244.4	<.0001
Other	5.76	0.0164
Sex	43.32	<.0001
Nativity	17.39	<.0001
<b>Age</b>		
18-24	5.34	0.0208
25-44	14.29	0.0002
45-64	58.52	<.0001
65+	9.57	0.002
<b>Education</b>		
Less than High School	349.69	<.0001
High school	11.44	0.0007
Some college	6.19	0.0129
College	241.84	<.0001
<b>Survey Year</b>		
2005	0.02	0.8901
2006	7.08	0.0078
2008	8.96	0.0028



**Table 3. Potential Predictors of Nonspecific Psychological Distress among Adult New Yorkers**

	<b>Adjusted Odds Ratio</b>	<b>95% Wald Confidence Limits</b>	<b>p-value</b>
LGB*Poverty	0.71	0.51-0.98	0.04
Poverty	2.89	2.57-3.246	<.0001
Lesbian, Gay, Bisexual (LGB)	1.6	1.24-2.07	0.0004
<b>Race</b>			
White (ref)	–	–	–
Black/African-American	0.92	0.79-1.06	0.25
Hispanic	1.59	1.39-1.82	<.0001
Asian/Pacific Islander	0.75	0.59-0.96	0.02
Other	1.55	1.17-2.05	0.0023
<b>Sex</b>			
Male (ref)	–	–	–
Female	1.31	1.17-1.46	<.0001
<b>Age</b>			
18-24 (ref)	–	–	–
25-44	1.1	0.87-1.40	0.43
45-64	1.71	1.35-2.16	<.0001
65+	1.08	0.83-1.39	0.57
<b>Year</b>			
2005 (ref)	–	–	–
2006	1.1	0.97-1.24	0.15
2008	0.89	0.77-1.02	0.08

**Table 4. Multivariate Associations between Key Covariates and Nonspecific Psychological Distress**

	<b>AOR</b>	<b>Standard Error</b>	<b>95% Confidence Intervals</b>
LGB in poverty compared to LGB not in poverty	2.04	0.32	1.5-2.78
Heterosexual in poverty compared to heterosexual not in poverty	2.89	0.17	2.57-3.25
LGB in poverty compared to heterosexual in poverty	1.13	0.12	0.92-1.39
LGB not in poverty compared to heterosexual not in poverty	1.6	0.21	1.24-2.07
LGB in poverty compared to heterosexual not in poverty	3.26	0.36	2.63-4.05
Hispanic LGB in poverty compared to non-Hispanic White heterosexual in poverty	5.19	0.60	4.13-6.51
Asian LGB in poverty compared to non-Hispanic White heterosexual in poverty	2.44	0.39	1.78-3.33
'Other' LGB in poverty compared to non-Hispanic White heterosexual in poverty	5.04	0.89	3.57-7.13
Black LGB in poverty compared to non-Hispanic White heterosexual in poverty	2.99	0.39	2.32-3.86