A MIXED-METHODS INVESTIGATION OF ALCOHOL USE AMONG
IMMIGRANT SEXUAL AND GENDER MINORITY LATINOS IN NORTH CAROLINA


Paul A. Gilbert, MSPH


A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill
in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the
Department of Health Behavior at the Gillings School of Global Public Health.

Chapel Hill
2013

Approved by:

Eugenia Eng

Scott D. Rhodes

Clare Barrington

Krista Perreira

Ted Mouw

# ABSTRACT

PAUL A. GILBERT: A Mixed-Methods Investigation of Alcohol Use
among Immigrant Sexual and Gender Minority Latinos in North Carolina
(Under the direction of Eugenia Eng, DrPH, MPH, and Scott D. Rhodes, PhD, MPH)

**Background:** Heavy alcohol use has the potential for multiple direct and indirect harmful effects; however, little is known about drinking patterns among immigrant sexual and gender minority Latinos. I conducted a mixed qualitative-quantitative study to investigate alcohol use among this population in North Carolina.

**Qualitative Study:** I sought to identify and describe salient social stressors, coping strategies, and the role of alcohol use through 15 semi-structured interviews with foreign-born sexual and gender minority Latinos. Following Grounded Theory methods, I produced an inductive model of alcohol use. Drinking was fundamentally a social behavior, embedded in cultural, social, and individual contexts. Nearly half of participants reported at least one binges episode per month. Among stressors, being a sexual minority was indirectly linked to alcohol use through drinking venues (e.g., gay bars) and companions, and being an undocumented immigrant dissuaded drinking for that sub-set of participants. I confirmed inferences in four member-check interviews and three key informant interviews.

**Quantitative Study:** Using cross-sectional survey data obtained in a study of HIV risk and protective factors among foreign-born sexual and gender minority Latinos (n=190), I tested theoretically derived hypotheses about the association of select stressors and social support with alcohol use (any drinking; drinking frequency; binges). Although 55% of participants reported no alcohol use, the majority of current drinkers reported at least one binge episode in the past 30 days. Ethnic discrimination was associated with any drinking

iii

and binges, consistent with a stress-reactive drinking. Social support moderated two relationships, consistent with the stress buffering hypothesis.

       **Conclusion:** Because current drinkers in both qualitative and quantitative studies reported high levels of binges, sexual and gender minority Latinos should be a priority population for alcohol risk-reduction interventions.  There was some support for drinking as a coping behavior; however, drinking as a social behavior emerged as a second key dimension.  Interventions that fail to account for drinking as a social behavior as well as a coping response are likely to have limited effectiveness. Further research is necessary to refine the conceptual model and better understand the relationships between social stressors, social contexts, and risky drinking among this population.

To my partner, Rodney, whose unwavering support and generous

personal sacrifices allowed me to complete this dissertation. I love you.

# ACKNOWLEDGMENTS

# TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

## CHAPTER ONE: INTRODUCTION

**Problem Statement**

Heavy alcohol use has long been an important public health concern in the United States (US). Although there is evidence of some health benefits from moderate alcohol consumption, such as protection against heart disease (Di Castelnuovo, Costanzo, Donati, Iacoviello, & de Gaetano, 2010; Gronbaek, 2009; Reynolds et al., 2003), frequent and/or heavy alcohol use has been associated with increased risk of a range of morbidities, including gastrointestinal disease, cancers, stroke, and cognitive decline (Boffetta & Hashibe, 2006; Meyerhoff et al., 2005; Thakker, 1998).  Alcohol use may also exert indirectly harmful effects through its associations with inter-personal violence (Caetano, Schafer, & Cunradi, 2001; Lipsky, Caetano, Field, & Larkin, 2005; Testa, Quigley, & Leonard, 2003), motor-vehicle crashes (Blomberg, Peck, Moskowitz, Burns, & Fiorentino, 2009; Hingson & Winter, 2003; Peck, Gebers, Voas, & Romano, 2008; Zador, Krawchuk, & Voas, 2000), and risky sexual behaviors (Bimbi et al., 2006; Diaz, Stall, Hoff, Daigle, & Coates, 1996; Poppen, Reisen, Zea, Bianchi, & Echeverry, 2004). Accordingly, *Healthy People 2020*, which serves as the agenda for the nation's health, has called for reductions in heavy drinking, binge drinking, and average annual alcohol consumption among adults (US Department of Health and Human Services, 2011). Although no Healthy People 2020 objectives specifically target alcohol use by racial/ethnic minorities, risky drinking has been

identified as a concern within the US Latino[1] community in at least two national health

assessments (Aguirre-Molina & Caetano, 1994; Caetano & Galvan, 2001).

While some immigrant Latino men abstain from or consume little alcohol, recent

research suggests that a sizeable proportion engages in heavy weekly or occasional

drinking (Worby & Organista, 2007). In their review of alcohol use among US racial/ethnic

minorities, Galvan and Caetano (2003) found that a greater proportion of Latino men

abstained from alcohol than their non-Latino White peers (35% vs. 26%); however, they also

found that greater proportions reported frequent heavy drinking than non-Latino Black or

White men (18% versus 15% and 12%, respectively) and that the proportion of Latino men

who reported three or more alcohol-related problems (e.g., driving while intoxicated)

increased from 9% to 16% from 1984 to 1995. Over the same period, however, the

proportions reporting three or more alcohol-related problems decreased among White men

(from 12% to 11%) and among African-American men (from 16% to 13%). It has been

suggested that some Latino men may consume alcohol as a way to cope with the

psychological distress associated with their minority status (Laureano & Poliandro, 1991;

Neff, 1986). Furthermore, some Latino men may use episodes of heavy drinking to

circumvent cultural constraints that otherwise prevent expressions of some emotions, such

as anger, frustration, or loss (Perez, 2000).

In this study, I investigated alcohol use among immigrant sexual and gender minority

Latinos, a sub-group that includes gay- and bisexually-identified men, men who have sex

with men (MSM) who do not self-identify as gay or bisexual, and gender variant or

---

[1] The terms Hispanic and Latino are often used interchangeably, but this practice is problematic. The use of Hispanic has been politically motivated, promulgated by an Act of Congress, and is largely based on linguistic grouping (Office of Management and Budget, 1997). In contrast, Latino appears to have emerged within ethnic communities to reflect shared cultural characteristics. Both terms have limitations and neither enjoys predominance since most immigrants prefer to self-identify by country of origin (Passel & Taylor, 2009). I use Latino to refer to Spanish-speaking individual and their shared cultural characteristics originating in Central and South America. For a detailed discussion of the issue, please see *Latino Terminology: Conceptual Bases for Standardized Terminology* (Hayes-Bautista & Chapa, 2002).

transgender individuals.  Sexual minority Latinos constitute a particularly vulnerable subgroup because they may be marginalized along multiple dimensions, including immigration status, language use, ethnic minority status, or sexual orientation. Compared to other populations, our knowledge about sexual minority Latinos is under developed. To date, much of the literature on alcohol use among racial/ethnic minorities has failed to assess sexual orientation.  Such findings presume heterosexuality and may not be generalizable to sexual minority men and gender variant or transgender persons.  Similarly, the small but growing body of research on alcohol use among gay-identified men, other MSM, and transgender persons has rarely disaggregated findings by race/ethnicity. Findings based on predominately White or Black population samples may not be representative of other groups, despite a shared sexual orientation.

**Specific Aims**

   I sought to address an overarching public health problem—risky drinking among immigrant sexual and gender minority Latinos—by developing a comprehensive understanding of social stressors and coping strategies.  The central hypothesis was that alcohol use would be associated with social stressors because of its role as a possible coping behavior, but that social support might attenuate such a relationship.  Research questions, specific aims, and hypotheses are described below.

> **Aim 1:** To explore the social stressors experienced by immigrant sexual and gender minority Latinos and identify the coping strategies adopted in response, with particular attention to the role of alcohol use;
>
> **Aim 2:** To quantify the association of select social stressors with alcohol use; and
>
> **Aim 3:** To test whether social support moderates the relationship between social stressors and alcohol use.

**Design and Methods**

In this study, I adopted a mixed-methods approach which combined qualitative and quantitative methods in a two-part project. The qualitative arm consisted of semi-structured interviews with 15 immigrant sexual and gender minority Latinos to address Aim 1. Using Grounded Theory methods, I developed a conceptual model of alcohol use. The quantitative arm addressed Aim 2 and Aim 3 through secondary analysis of cross-sectional behavioral data obtained in the study *HIV Among Rural Latino Gay Men and MSM in the Southeast* (PI: Scott D. Rhodes, PhD; R21 HD 049282). Although the goal of the parent study was to examine HIV-related behaviors, data were available to test theoretically derived hypotheses about social stressors and alcohol use. Both qualitative and quantitative studies addressed the same overarching research goal using distinct but complementary approaches, including different samples, data, analytic strategies, and epistemological orientations. Both analyses occurred simultaneously, received equal priority, and were linked to each other at multiple points. For example, the quantitative study's literature review provided initial topics, such as migration-related stressors, that were explored in the qualitative interviews. In return, emergent qualitative findings generated a new hypothesis that was tested in the quantitative study, namely that migration as an adult would be positively associated with alcohol use.

**Significance of the Research**

The study addressed two important gaps in the scientific literature. First, it examined alcohol use as a behavioral outcome among immigrant sexual and gender minority Latinos. To date, most research on sexual minority Latino men has focused on sexual behaviors and HIV risk. There has been relatively little investigation of alcohol use as a behavioral outcome. Given the aforementioned direct and indirect health-damaging effects of heavy alcohol use, research is needed to understand drinking patterns in this vulnerable population. Second, the study focused on immigrant sexual and gender minority Latinos in

4

the Southeast US. The majority of public health research on sexual minority Latinos has been conducted in states with long-established Latino communities (e.g., California, Texas, and New York). Recent changes in migration patterns, however, have resulted in rapid growth of Latino populations in non-traditional migration destinations, including exponential growth in North Carolina (Kochlar, Suro, & Tafoya, 2005). Given the vastly different community characteristics, social contexts, and migration experiences for Latino immigrants in the US South, the generalizability of previous research findings from established Latino communities to newly emerging communities cannot be assumed (Farley, 2006).

In terms of potential impact, findings from the proposed research may advance the field of alcohol abuse prevention research by providing new information about alcohol use behaviors among an understudied sub-group of Latinos. The study may identify leverage points that can be used to inform innovative and culturally congruent risk reduction interventions. Findings will also be relevant to other states experiencing rapid growth of newly emergent Latino populations.

**Organization of the Dissertation**

The dissertation consists of seven chapters. Chapter One provides a brief overview of the problem, specific aims, and research design. Chapter Two synthesizes relevant literature in order to understand the context and rationale for the study. Chapter Three describes the theoretical foundations of this research, presenting an overall conceptual model of the mixed-methods approach, elaborating a theoretically derived conceptual model for the quantitative study, and detailing the specific aims and hypotheses. Chapter Four explains the methodologies for this mixed-methods research, including potential limitations and strengths. Chapter Five reports findings from the qualitative study, and Chapter Six reports findings from the quantitative study. Both Chapters Five and Six are presented in manuscript format. Finally, Chapter Seven synthesizes the qualitative and quantitative

findings, identifies potential limitations and significance of the research, and discusses

implications for public health research and practice.

**CHAPTER TWO: BACKGROUND AND LITERATURE REVIEW**

**Recent Changes in the Latino Population**

In 1990, Latinos represented 9% of the US population. Twenty years later the proportion had increased to 16%, making Latinos the largest racial/ethnic minority group (Census Bureau, 2011b). While the greatest numbers continue to be found in states with long-established Latino communities, such as California, Texas, New York, and Florida, recent population changes have been most pronounced in states with little or no historical Latino presence, particularly in the Southeast and Midwest US (Dockterman & Velasco, 2010; Ennis, Rios-Vargas, & Albert, 2011; Griffith, 2005; Kochlar, et al., 2005). Latino migrants have increasingly chosen non-traditional settlement states, where they may take advantage of greater labor opportunities in agriculture, construction, and livestock processing (Kochlar, et al., 2005; Parrado & Kandel, 2008). While most Latino immigrants have been integrated into the US economy (i.e., found employment), social and cultural integration has often remained challenging and incomplete (Cornelius, 2002; Sizemore, 2004; Smith & Winders, 2008).

In North Carolina, Latinos accounted for only 1% of the state's population in 1990, but that proportion had increased to 9% by 2011, making it the state with the 11th largest Latino population (Census Bureau, 2013; Motel & Patten, 2013). The rapid growth can be attributed to migration to North Carolina from other US states, an increase in the number Latinos immigrating directly to North Carolina from their country of origin, and high fertility among Latina residents of North Carolina (Frey, 2006; Perreira, 2011; Suro & Singer, 2002). For the period 2007-2009 in North Carolina, on average, 54% of Latino males age 18 and

older were foreign-born, with the largest proportion from Mexico (63%), followed by El Salvador (5%), Honduras (4%), and Guatemala (3%) (Census Bureau, 2011a). Forty-two percent of these men were unmarried. Their self-reported English language ability varied widely, from speaking English very well (39%) or well (23%) to not well (26%) or not at all (12%). Most foreign-born Latino residents of North Carolina have low educational attainment, and many reside in communities that lack experience with Latino immigrants and infrastructures to meet their needs (Griffith, 2005; Kasarda & Johnson, 2006; Rhodes, Eng, et al., 2007; Rhodes, Hergenrather, Bloom, Leichliter, & Montano, 2009).

Receptivity to Latino immigrants in North Carolina has been mixed over time and across different communities (Perreira, 2011). While there have been some initiatives to integrate Latinos, such as church-based supportive programs for immigrants and the emergence of secular ethnic community-based organizations (e.g., El Futuro, Durham, Carrboro, and Siler City NC; El Centro Hispano, Durham NC; El Pueblo, Raleigh NC; El Centro de Acción Latino, Greensboro NC; El Vínculo Hispano, Siler City), these positive efforts have often seemed outweighed by negative reactions from native North Carolinians (Bailey, 2005). For example, the growing Latino presence in North Carolina has been accompanied by increasing social tensions, including ethnic discrimination, residential segregation, and racial profiling (Bauer et al., 2009; Gill, 2010; North Carolina Institute of Medicine, 2003).

**Stress and Health**

There is a long-standing and voluminous literature on stress and health. It is generally acknowledged that Hans Selye published the first observations of systematic physiological responses to stress in 1936, thereby launching a field of research that has sought to understand its causes and effects, particularly on health outcomes (Neylan, 1998). In his seminal paper, Selye noted a constellation of stereotypical reactions to adverse

events that he called General Adaptation Syndrome. He went on to lay important groundwork for the field, most importantly by conceptualizing a distinction between stressors, defined as unique and specific events that place a demand on an organism, and stress, defined as a non-specific state of physiological disregulation that occurs as a response to stressors (Selye, 1973). In this study, I retained Selye's distinction between stressors and stress. In a prescient step, Selye also proposed that the key mechanism responsible for harm is the effort required by an organism to adapt to stressors, to resolve any disequilibrium, and to return to a state of balance. Although he focused largely on physiological processes, the proposed mechanism has been extended over time to include cognitive processes and coping behaviors that are used to resolve the stressed state.

By the mid-20th century, links between stressors and both physical and mental health outcomes had been well established (Selye, 1955; Wolff, 1953). This coincided with the epidemiologic transition, in which the burden of diseases in the US shifted from acute, largely infectious diseases to chronic conditions that were attributed to demographic and lifestyle changes (Omran, 1971). Accordingly, the nature of stress research also changed. Notably, the conceptualization of stressors expanded from discrete stimuli to prolonged demands, such as workplace stress and control, and the coping processes adopted in response. Stress research also crossed disciplines, moving from the field of biomedical research to the social sciences.

Of particular relevance to this study was the sociological perspective, which sees stress as one result of the process of social stratification, while also recognizing wide variation in exposure to stressors and possible outcomes. Aneshensel (1992) succinctly articulated the prevailing view, saying she "understands stress both as a consequence of location in the social system and as a determinant of some outcome, most typically psychological distress" (p. 18). Further development of the sociological perspective suggested that failure to fully participate in social roles, including deviations from prescribed

9

roles, may act as a stressor. This was instructive for the present study, in which multiple disadvantaged minority statuses, including immigrant status, minority ethnicity, deviation from traditional gender norms, and minority sexual orientation, presented potential stressors in the study population.

**Acculturation and Health**

Similar to the concept of stress, acculturation has a substantial history. It was first conceptualized and studied in anthropology in the early 20th century, and later incorporated into other social sciences. The classic definition, proposed in 1936 and still cited today, holds that "acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups" (Redfield, Linton, & Herskovits, 1936). This definition makes explicit that cultural influences may be bi-directional. What is not stated, but has been widely understood, is that cultural change also occurs at both individual and group levels.

Over time, a variety of individual-level conceptual models of acculturation have emerged (Cabassa, 2003; Clark & Hafsess, 1998). Some are uni-dimensional, disregarding the bi-directional nature of the classic definition and showing instead a linear progression from unacculturated to bicultural to acculturated status (Figure 2.1). They have been criticized for failing to distinguish any variability in culture, for little attention to the meanings of minority and majority cultures, and for an ethno-centric presumption of a continuous progression towards adoption of a new culture and abandonment of the culture of origin. Later models, often referred to as matrix models, recognize that the culture of origin may be retained or lost in varying degrees just as the new culture may be adopted or resisted. Matrix models have been most useful for deriving a four-level system to classify individual acculturation level: assimilation (culture of origin lost and new culture adopted); bi-cultural

adaptation (culture of origin retained and new culture adopted); separation (culture of origin retained and little adoption of new culture); and marginalization (culture of origin lost and little adoption of new culture) (Berry, 1997). The main weakness of matrix models, similar to linear models, is a presumption that cultures are homogeneous entities.  In contrast, more recent models take a multidimensional and bi-directional approach.  These models assume that culture has many relevant aspects, that different aspects may vary in importance, and that change may proceed at different rates (if at all) across the different traits related to these cultural aspects.  For example, adoption of a new language may occur quickly but changes in values and beliefs may not change much among first generation immigrants.

Linear model

Unacculturated          Bicultural          Acculturated

Matrix model

Culture of origin

high

*Separation*

*Bi-cultural adaptation*

low          high

low

*Marginalization*          *Assimilation*

New culture

Multi-dimensional model

Culture of origin          Trait A          New culture

Culture of origin          Trait B          New culture

Culture of origin          Trait C          New culture
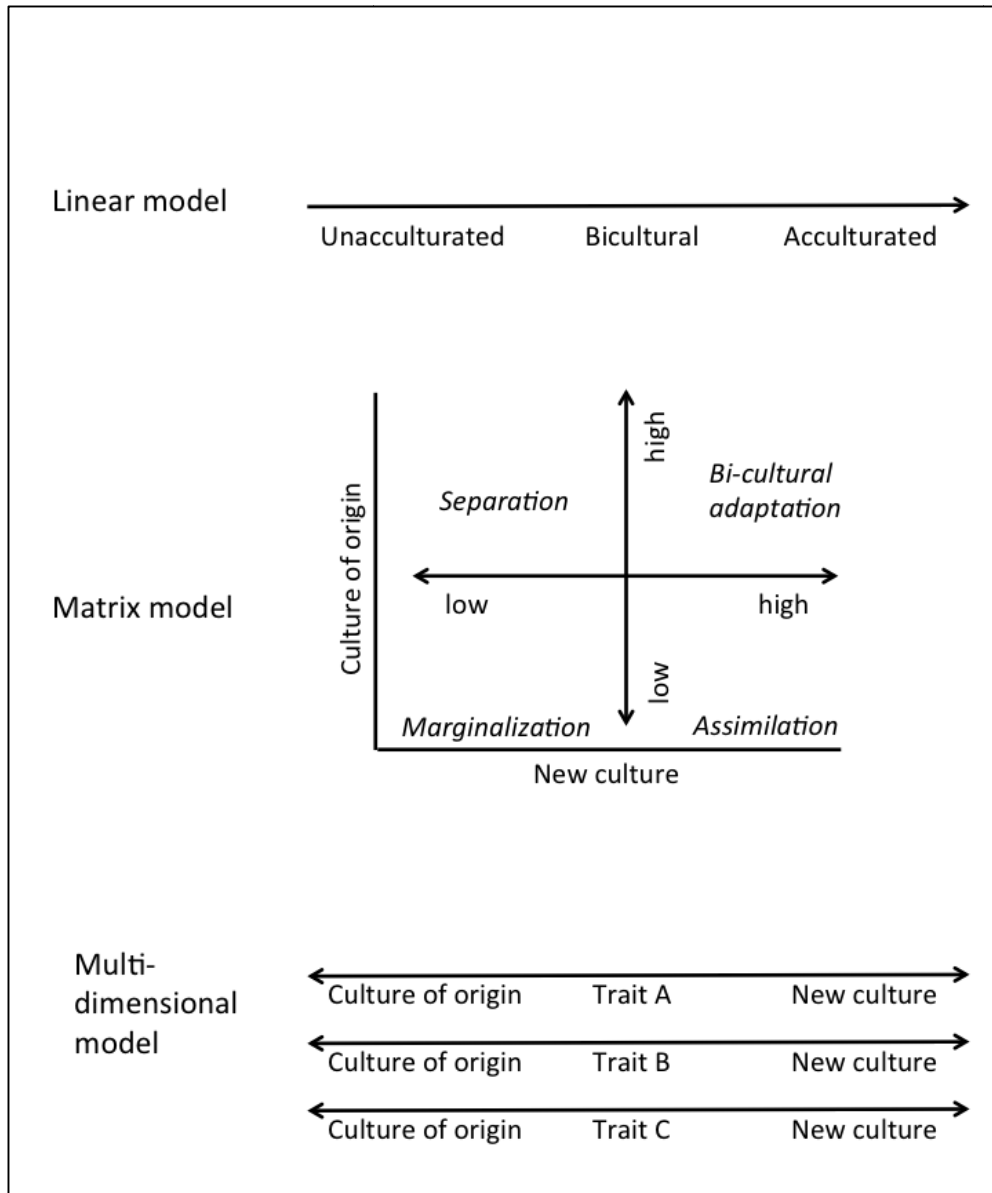
Figure 2.1. Conceptual Models of Acculturation (adapted from Clark & Hafsess, 1998)

Since the 1960s, the relationship between acculturation and health has received considerable attention.  Generally speaking, greater acculturation to US society has been associated with poorer health outcomes among Latinos, including greater illicit drug use, greater tobacco use, greater depression and anxiety disorders, decreased quality of diet, and poorer pregnancy outcomes (Ayala, Baquero, & Klinger, 2008; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005; Lara, Gamboa, Kahramanian, Morales, &

Bautista, 2005; Myers et al., 2009).  This has been described as the Latino Health Paradox, a puzzling pattern of deteriorating health outcomes that appears associated with greater assimilation into the dominant Anglo-American culture.  In other words, less acculturated Latinos appear to enjoy better health than either their more acculturated Latino peers or other disadvantaged racial/ethnic minorities, which goes against the expected socio-economic gradient (Markides & Coreil, 1986).  While there is no consensus on the underlying mechanism responsible for this pattern, proposed explanations have included selection bias, whereby only the most fit Latino immigrants leave their home countries for the US (Crimmins, Soldo, Kim, & Alley, 2005; Palloni & Arias, 2004; Palloni & Morenoff, 2001), methodological artifacts caused by poor conceptualization and measurement of ethnicity, including misclassification of Latino ethnicity as White (Franzini, Ribble, & Keddie, 2001), or enculturation, in which certain aspects of the culture of origin (e.g., *familismo*, or the importance of family relationships) are retained and offer protection against social disadvantage (Gallo, Penedo, de los Monteros, & Arguelles, 2009).

Recently, the use of acculturation in public health research has come under heavy criticism.  It has been faulted for focusing on measurement and modeling without adequately defining the underlying construct, making unsupported claims about the nature of minority cultures, obscuring cultural and historical differences between Latino groups in the US (e.g., Mexicans vs. Puerto Ricans vs. Cubans), and failing to disentangle potential confounding factors, such as socio-economic position (Hunt, Schneider, & Comer, 2004; Viruell-Fuentes, 2007; Zambrana & Carter-Pokras, 2010).  With few exceptions, its use as an explanatory variable has been based on simplistic uni-dimensional models and measured by a limited range of proxy variables, such as nativity, time in the US, or language use (Abraído-Lanza, Armbrister, Flórez, & Aguirre, 2006; Lopez-Class, Castro, & Ramirez, 2011; Miranda, González, & Tarraf, 2011; Thomson & Hoffman-Goetz, 2009).  As Clark and Hafsess have noted (p. 52), "language and generation, although easy to elicit from a patient or research

subject, fail to satisfy the criteria of multidimensional acculturation measurement.  Both are

proxies with questionable relationships to the concept of acculturation" (Clark & Hafsess,

1998). Some social scientists have called for researchers to abandon use of acculturation

until the aforementioned conceptual and methodological issues have been resolved (Hunt,

et al., 2004; Viruell-Fuentes, Miranda, & Abdulrahim, 2012). Nevertheless, this has not

curtailed its widespread adoption as a key explanatory variable by many Latino health

researchers. In fact, a recent review of the literature found widespread use of measures with

questionable construct validity and poor psychometric performance (Rudmin, 2009).

       Due to its limited conceptualization and constrained operationalization, public health

as a discipline has failed to arrive at a full understanding of the relationships between

migration, enculturation, assimilation and health outcomes. In particular, the role that

migration and cultural factors play in Latinos' alcohol use is poorly understood, and the

following studies are emblematic of the mixed findings that have emerged over the past

several decades. In a study that used a probability sample drawn from the 48 continental

states (n=1453), Caetano (1987) found that acculturation to the dominant American society,

measured largely by language preference, was positively associated with any drinking in the

past 12 months among Latino men.  There were also a number of inconsistent relationships

suggesting moderation by age, place of birth, or education.  For example, low acculturation

was associated with frequent heavy drinking among men age 18-39, but was associated

with abstaining from any drinking among older men age 40 and greater.  Focusing on Latino

men in the Southwest, and benefiting from a large sample drawn as part of the *Hispanic*

*Health and Nutrition Examination Survey* (n=1313),  Markides and colleagues (1990) found

no associations between acculturation to Anglo-American society, measured via a multi-item

scale of language use, ethnic identification, and nativity, and five alcohol use outcomes,

including abstention, frequency and volume of drinking, total number of drinks and binge

drinking episodes in a four week period. Using multi-stage probability sampling to recruit

Non-Latino Whites, Blacks, and Latinos in San Antonio, Texas (of whom 324 were Latino men), other researchers found that low English use and foreign birth were associated with greater frequency of drinking and volume consumed (Neff & Hoppe, 1992). When they entered demographic and psychological covariates (e.g., *familismo*, religiosity), however, nearly all main effects disappeared. Finally, examining the sub-group of Latino men included in the 2005 *National Alcohol Survey* (n=784), Karriker-Jaffe and Zemore (2009) found a possible protective effect of moderate acculturation, measured by language use. Relative to both low and high English use, mid-levels of English use was associated with decreased frequency of drinking, volume consumed, drinking to intoxication, and dependence. The researchers also found that high English use was associated with greater odds of any drinking, but only when income was above average.

In light of the critiques of acculturation as an overly simplistic explanatory variable, I chose not use it as a construct in this study; however, I could not ignore the accumulation of empirical evidence suggesting that some cross-cultural phenomenon affects alcohol use among US Latinos. Rather than making any claims about loss or maintenance of culture, I restricted my conceptualization of the process to transnational migration, the act of moving from one's country of origin to the US. Taking a pragmatic approach, I believed that certain factors related to migration, such as age at migration, English language use, and length of time in the US (i.e., exposure to the dominant American culture) would be salient because they indicated the degree of functional participation that would be possible in the dominant US society. In other words, greater English use might facilitate daily life in the US while the converse, low English use, might restrict potential job opportunities. However, I rejected the notion that I could draw any conclusions about cultural-orientation based solely on these migration-related variables. English use may be unrelated to culturally driven values and attitudes. Further details of my conceptualization and operationalization of migration-related

factors are provided in Chapter Three (Theoretical Frameworks, Conceptual Models, Research Questions, and Hypotheses) and Chapter Four (Research Methods).

**Alcohol Use as a Public Health Concern**

Alcohol use plays an important role in human societies, fulfilling a number of social, religious, and cultural functions (Babor et al., 2003).  It is a complex behavior that has the potential for direct and indirect harmful effects.  For example, frequent and/or heavy alcohol consumption has been associated with increased risk gastrointestinal disease, cancers, stroke, and cognitive decline (Boffetta & Hashibe, 2006; Meyerhoff, et al., 2005; Thakker, 1998).  Alcohol use has also been associated with other risky behaviors such as violence (Caetano, et al., 2001; Lipsky, et al., 2005; Testa, et al., 2003), motor-vehicle crashes (Blomberg, et al., 2009; Hingson & Winter, 2003; Peck, et al., 2008; Zador, et al., 2000), and sexual risks (Bimbi, et al., 2006; Diaz, et al., 1996; Poppen, et al., 2004).

In the US, alcohol is legal, widely available, and socially condoned.  It is also the object of long-standing concern due to its toxicity at high levels, potential for dependence, and associations with morbidity and mortality through risky behaviors.  Of 21 substance use objectives developed for *Healthy People 2020*, which serves as the guiding document for US health interventions, three objectives call for decreasing alcohol use among adults, including reductions in heavy drinking, binge drinking, and average annual alcohol consumption (US Department of Health and Human Services, 2011).  Two additional objectives seek to decrease cirrhosis deaths and other deaths attributable to alcohol. Although there are no Healthy People 2020 objectives specifically regarding alcohol use by racial/ethnic minorities, risky drinking has been identified as a health concern within the US Latino population (Aguirre-Molina & Caetano, 1994; Caetano & Galvan, 2001).

**Understanding Alcohol Use among Latinos**

National prevalence surveys often show that alcohol use among US Latinos largely mirrors that of the non-Latino White population (Substance Abuse and Mental Health Services Administration, 2010). Such aggregate reporting, however, obscures important differences within and across racial/ethnic minority groups (Alvarez, Jason, Olson, Ferrari, & Davis, 2007; Alvarez, Olson, Jason, Davis, & Ferrari, 2004). In addition, data on Latinos may suffer from measurement limitations. Recent alcohol research has emphasized the need to understand patterns of risky drinking, but the longstanding predominant use of quantity-frequency measures may fail to capture risky drinking among Latinos because of substantially different patterns of use (Sobell & Sobell, 1995). Quantity-frequency measures may fail to capture risky drinking, particularly when individuals drink rarely but consume large amounts when they do drink (Room, 1990, 2000).

Recent research suggests that some immigrant Latino men abstain from or consume little alcohol while a sizeable proportion engages in heavy weekly drinking (Worby & Organista, 2007). In their review of alcohol use among US racial/ethnic minorities, Galvan and Caetano (2003 ) found that a greater proportion of Latino men abstained from alcohol than their non-Latino White peers (35% vs. 26%) ; however, they also found that greater proportions reported frequent heavy drinking than non-Latino Black or White men (18% versus 15% and 12%, respectively) and that the proportion of Latino men who reported three or more alcohol-related problems (e.g., driving while intoxicated) increased from 9% to 16% from 1984 to 1995. Over the same period, the proportions reporting three or more alcohol-related problems decreased among White men (from 12% to 11%) and African-American men (from 16% to 13%).

Comparing different Latino sub-groups, Mexican-Americans report more heavy drinking, more episodes of drunkenness, and more alcohol-related problems than Puerto Ricans, Cubans, and other Latinos in the US (Caetano, 2003; Lee, Markides, & Ray, 1997;

Nielsen, 2000; Randolph, Stroup-Benham, Black, & Markides, 1998; Vaeth, Caetano,

Ramisetty-Mikler, & Rodriguez, 2009). Such variation in racial/ethnic minority drinking

patterns may be partially explained by social and cultural factors, including different norms

about alcohol use retained from the home culture or conditions in the US related to drinking

(Galvan & Caetano, 2003). Contrasting cultural differences, it has been suggested that

Anglo-American culture is more disposed to active coping in response to stressors while

Mexican culture favors passive coping. For example, Díaz-Guerrero (1967) identified a

range of culturally specific coping strategies among Mexicans, observing that,

> …self-sacrifice in all, submission, dependence, politeness, courtesy, *el aguante* (the
> ability to hold up well even in the face of abuse), and *la concha* (a thick hard shell
> that will not budge, no matter how much effort is made to get through it to the
> person), are either Mexican sociocultural virtues, or realistic ways of coping, or else,
> and at least, approved ways of defending oneself from the stresses of life (p. 129).

Other researchers have identified "utilitarian" uses of alcohol, particularly by men. Namely,

Latino men may consume alcohol as a way to deal with psychological distress or socio-

economic disadvantage due to minority status (Laureano & Poliandro, 1991; Neff, 1986).

Aguirre-Molina and Caetano (1994) have noted that "…alcohol serves as a time-honored

remedy among adult Latino men for coping with chronic anxiety" (p. 410). Situational

factors, such as employment conditions, residency status, and disruption of social ties, have

been associated with binge drinking among Mexican migrant farmworkers (Garcia, 2008).

Furthermore, Pérez found that Mexican men frequently engaged in binge drinking during

festivals (Perez, 2000). Known as "fiesta drinking," it may not only be a joyful indulgence

but may also serve as a means to vent anger, frustration, or loss that would not otherwise

be possible to express.

The last two decades of alcohol research have seen growing interest in social

disadvantage as an explanatory factor among racial/ethnic minorities (Caetano, 1990; Herd,

1987). In particular, experiences of discrimination have been proposed as unique stressors

that partially explain higher levels of drinking problems observed in racial/ethnic minorities compared to Whites (Caetano, Clark, & Tam, 1998).  Empirical findings from national data sets have supported the theoretical link.  Among Latinos, Mulia and colleagues (2008) found that perceived unfair treatment increased odds of alcohol dependence and that racial/ethnic stigma increased odds of problem drinking and negative consequences of alcohol use. Similarly, McLaughlin and colleagues (2010) showed that experiences of discrimination increased odds of Latinos meeting the diagnostic criteria for an alcohol use disorder.  Borrell and colleagues (2010) found that experiences of discrimination increased odds of binge drinking.  More recently, Zemore and colleagues (2011) found positive associations between perceived unfair treatment and negative consequences of drinking and between perceived unfair treatment and symptoms of alcohol dependence, and that these relationships were exacerbated by poverty and being foreign born, respectively.

The relationship between social disadvantage and alcohol use among Latinos in North Carolina has received only limited attention. Loury and Kulbok (2007) found a negative relationship between occupational/economic stress and number of alcoholic drinks consumed in the past month, perhaps reflecting fewer resources available to purchase alcohol among their low-income respondents.  Consistent with national findings, however, they found positive (but marginally significant) associations between family/cultural stress and marital stress and number of drinks consumed. In addition, preliminary research by Rhodes and colleagues has further elaborated the conceptual relationships (Rhodes et al., 2009b).  In particular, a number of social stressors were identified as determinants of risky behaviors among immigrant Latino men in North Carolina, including experiences of discrimination, deviations from traditional gender role norms, sub-standard housing, separation from family, friends, and possessions, and harsh working conditions, as well as deviations from traditional gender role norms.  Although the focus of the study was risky sexual behavior, some participants reported turning to alcohol use as a coping strategy.

**Understanding Alcohol Use among Sexual Minority Men**

High levels of alcohol consumption and alcohol-related problems have been reported for gays and lesbians, often exceeding those found among their heterosexual peers (Drabble, Midanik, & Trocki, 2005; Hughes, 2005; McKirnan & Peterson, 1989a; Stall et al., 2001; Stall & Wiley, 1988).  Proposed explanations for the observed disparities have frequently focused on the greater experiences of stigma and discrimination due to minority sexual orientation or internalized negative attitudes (Cabaj, 1996; DiPlacido, 1998; McKirnan & Peterson, 1989b; Meyer, 2003a).  In other words, gays and lesbians experience social stressors as a result of their minority sexual orientation and may turn to alcohol or drugs to cope (Hatzenbuehler, 2009).  Although sexual orientation has received far less attention than other types of social stressors, there is increasing support for the proposed association of gay-related stressors with alcohol use (Bux, 1996; Hamilton & Mahalik, 2009; McDermott, Roen, & Scourfield, 2008). Similar to the literature on drinking among Latinos, however, the findings are mixed and are based on a small number of studies that have explicitly tested such relationships.

McCabe and colleagues examined the association between experiences of discrimination due to race, gender, and sexual orientation and substance abuse or dependence in a sub-sample of 577 lesbian, gay, and bisexual adults in Wave II of the *National Epidemiologic Survey on Alcohol and Related Conditions.*  They failed to find an effect for sexual orientation discrimination alone, but in combination the three forms of discrimination (i.e., race, gender, and sexual orientation) led to four times the odds of substance abuse or dependence (McCabe, Bostwick, Hughes, West, & Boyd, 2010). Unfortunately, the researchers did not differentiate alcohol abuse and dependence from other licit and illicit drug use.  In contrast, McKirnan and Peterson (1988) conducted a purposive community survey of gay men in Chicago (n=2603) to examine the relationship

20

between gay-related stressors, intra-personal and contextual factors, and alcohol or marijuana use.  They found not only that discrimination due to sexual orientation was associated with alcohol abuse, but also that the anticipated tension-reduction properties of alcohol exacerbated the relationship between discrimination and alcohol abuse.  Finally, Amadio (2006) examined the relationship between internalized negative attitudes and alcohol use and alcohol-related problems.  Using a convenience sample of 151 lesbians and 184 gay men, he found support for an association with binge drinking among lesbians but no associations with drinking behavior among gay men.  There was, however, an association between internalized negative attitudes and adverse drinking outcomes for both lesbians and gay men.

Compounding the problem, sexual minority men who are also racial/ethnic minorities may face multiple, intersecting disadvantages.  To date, there have been very few studies that examined social stressors and alcohol use among sexual and racial/ethnic minorities. Nevertheless, a small body of literature has emerged.  In one of the earliest reports, Tori (1989) found that Mexican immigrant MSM in the US consumed alcohol at higher levels than their heterosexual Mexican immigrant peers.  Extending these findings, Bruce and colleagues (2008) found that internalized homosexual stigma was positively associated with amount of alcohol consumed among gay, bisexual, and transgender Latino men in Chicago and San Francisco.

**Addressing a Gap in the Literature**

This study sought to bridge two disconnected bodies of scientific literature.  One line of research has investigated alcohol use among gay men and other men who have sex with men; however, findings have rarely been disaggregated by race/ethnicity, even when diverse samples were available (Grov, 2012; Hirshfield, Remien, Humberstone, Walavalkar, & Chiasson, 2004; McCabe, West, Hughes, & Boyd, 2013; Russell, Ryan, Toomey, Diaz, &

Sanchez, 2011). Results obtained in predominately White or Black population samples may not be representative of other groups, despite a common sexual orientation. A second line of research has looked at alcohol use among racial/ethnic minorities; however, much of the literature on Latino men has failed to assess sexual orientation (Grzywacz, Quandt, Isom, & Arcury, 2007; Loury, Jesse, & Wu, 2011). Such findings presume heterosexuality and may not be generalizable to sexual minority men. The limited available evidence on sexual minority Latinos, a sub-group that spans these identity categories, suggests high levels of risky drinking.

Using Respondent-Driven Sampling (RDS), a recent study estimated the prevalence of heavy drinking (≥6 drinks per occasion within the past 6 months) among self-identified gay Latinos at 15% in San Francisco and 37% in Chicago (Ramirez-Valles, Garcia, Campbell, Diaz, & Heckathorn, 2008). Another study of young MSM in Los Angeles found that within the past month 18% of respondents reported drinking <3 days per week but consuming ≥5 drinks per occasion, and 7% reported drinking ≥3 days per week and ≥5 drinks per occasion (Wong, Kipke, & Weiss, 2008). However, findings are not consistent. A national survey of Latino and Asian Americans found no association between minority sexuality and alcohol abuse or dependence, although because of sample size concerns results were not disaggregated by race/ethnicity (Cochran, Mays, Alegria, Ortega, & Takeuchi, 2007).

These results must be interpreted cautiously when considering sexual minority Latinos in non-traditional migration destination states, such as North Carolina. Given the vastly different community characteristics and social contexts, the generalizability of research findings obtained in established Latino communities, particularly those that also have visible gay male communities, to newly emerging Latino communities cannot be assumed (Farley, 2006).

**Problem Statement**

Alcohol use is an important public health concern because of its potential for multiple direct and indirect harmful effects. Despite limited research to date, there are indications that some sexual minority Latinos engage in high levels of risky drinking, and that alcohol use may be a coping strategy adopted in response to social stressors. Further research is needed to fully understand the patterns of alcohol use in this vulnerable sub-group of Latinos.

**CHAPTER THREE: THEORETICAL FRAMEWORKS, CONCEPTUAL MODEL, RESEARCH QUESTIONS, AND HYPOTHESES**

In this chapter, I introduce a mixed-methods approach to research, present an overarching conceptual model for the dissertation, and describe the theories that have guided each study. The chapter concludes by presenting the research questions, specific aims, and hypotheses that were addressed by the dissertation.

## Emergence of Mixed-Methods Research

Rejecting the strict dualism that produced the "paradigm wars" of the late 20th century, mixed-methods research has emerged as a third scientific tradition that overlaps quantitative and qualitative inquiry (Creswell, 2010; Teddlie & Tashakkori, 2003). In a bridging position, graphically shown in Figure 3.1, mixed-methods research draws on the established characteristics of the both quantitative and qualitative traditions; however, the term mixed-methods is deceptive since it suggests that only the research activities are combined. Like all science, mixed-methods research is nested within an ontology (i.e., an understanding of the nature of the world and what is knowable) and an epistemology (i.e., the means of producing knowledge and the relationship of the researcher to the knowledge that is produced). Mixed-methods studies may combine elements of quantitative and qualitative paradigms at all levels of the research process, drawing on each tradition to varying degrees from the formulation of research questions to collecting, analyzing, and interpreting data.

```
                  Quantitative           Mixed Methods          Qualitative
                   Paradigm               Paradigm               Paradigm




  •  Assumes objectivity                                •  Assumes subjectivity
  •  Follows deductive reasoning    Draws on contrasting •  Follows inductive reasoning
  •  Tests hypotheses                  paradigms with    •  Creates meaning
  •  Data are numbers                  varying degrees   •  Data are words
  •  Uses statistical methods &      of mixing, timing,  •  Uses interpretive methods &
     standardized procedures           and emphasis.        individualized procedures
  •  Seeks assurances of validity                       •  Seeks assurances of authenticity
  •  Findings may be generalizable                      •  Findings may be transferable
```

Figure 3.1 Characteristics of Three Research Paradigms


The past 20 years have seen growing interest in mixed-methods research, with the

development of widely varying approaches.  There have also been significant critiques of

mixed-methods (Johnson, Onwuegbuzie, & Turner, 2007).  Some scientists have advocated

mixed-methods as a practical strategy to off-set the limitations inherent in quantitative and

qualitative methods when used alone and to provide more complete information on complex

phenomena (Feilzer, 2009; Morgan, 1998).  Others have criticized such a pragmatic

approach for failing to consider essential higher-level concerns, such as the underlying and

often unstated ontological and epistemological assumptions, neglect of which may result in

logically incoherent conclusions (Lipscomb, 2008; Niaz, 2008).

**Rationale for Mixed-Methods Design**

My own motivations for pursuing a mixed-methods study were largely practical.

Social stressors and coping behaviors, including alcohol use, are inherently complex and

highly variable phenomena. I believed that no single research approach would be able to

fully describe them. Thus, relying on one type of study, whether qualitative or quantitative,

would provide only limited knowledge of the stressors experienced by immigrant sexual and

gender minority Latinos, the coping strategies adopted in response, and the role of alcohol

use as a coping behavior. Since my over-arching goal was to achieve as complete an

understanding as possible, I felt compelled to use more than one mode of inquiry. In her

definition of mixed-methods research, Jennifer Green (quoted in Johnson et al., 2007)

described just such a motivation:

> Mixed method inquiry is an approach to investigating the social world that ideally
> involves more than one methodological tradition and thus more than one way of
> knowing, along with more than one kind of technique for gathering, analyzing, and
> representing human phenomena, all for the purpose of better understanding.

In addition, Green's statement reflects an underlying assumption of subjectivity, one that I

also share. As a researcher, I have been strongly influenced by post-modern philosophy,

particularly Kuhnian critiques of the received notions of objectivism in positivist science

(Kuhn, 1996, 2000). Accordingly, I used a relativist ontology and a constructivist

epistemology. In other words, I believed there was no single truth to be discovered; rather,

there were many possible truths. Furthermore, I believe that knowledge is produced

through interaction (e.g., between researchers and participants or an analyst and the data),

and that the content and characteristics of such knowledge is dependent on the people

engaged in its production. Finally, I would like to note my underlying personal values of

equity and social justice, which have driven the research. I am interested in exploring—and

ultimately eliminating—health disparities, particularly those that are based on socially

constructed categories such as gender, race/ethnicity, and sexual identity. A mixed-

methods design aligned well with the public health problem, my own ontological and

epistemological perspectives, and the personal values that motivated this research.

**Mixed-Methods Study Design**

       This dissertation was conceptualized as a two-part study, which utilized both

qualitative and quantitative approaches to address the overarching research question: what

is the relationship between social stressors and alcohol use among immigrant sexual and

gender minority Latinos?  Using Leech and Onwuegbuzie's typology (2009), I classified the

study as a partially mixed, concurrent, equal status design. The data were collected from

two independent samples at different times using different sampling strategies; however, the

respective qualitative and quantitative analyses took place simultaneously. Each analysis

was conducted according to the established methods of its tradition, but several points of

linkage were established so that each study informed the other over the course of the

research (Figure 3.2). Thus, the level of mixing was partial. Furthermore, neither approach

was given priority.  Both qualitative and quantitative methods were weighted equally as valid

and valuable sources of information.  In a final step, I drew upon findings from each study to

make inferences about alcohol use in the study population.
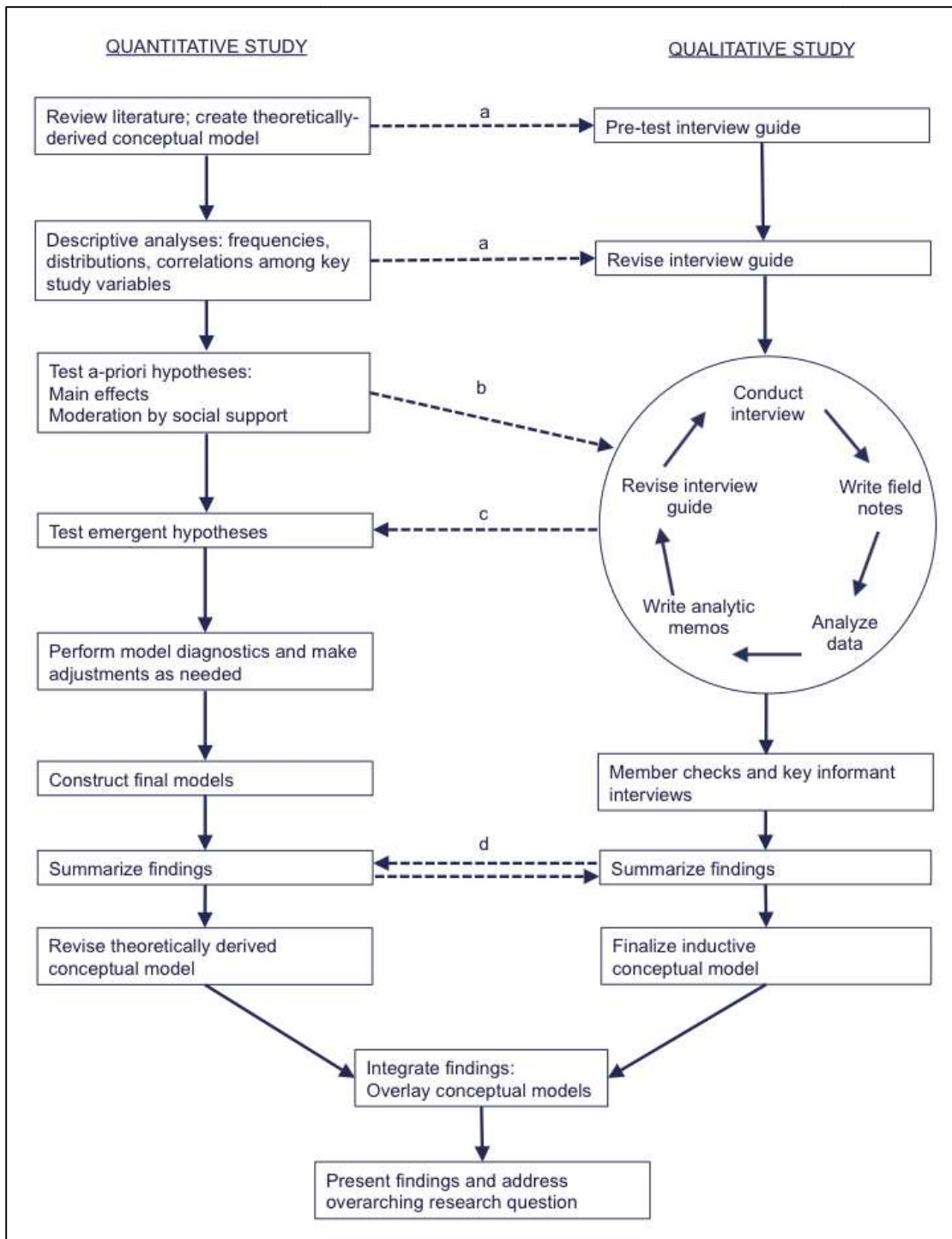
Figure 3.2 Mixed-Methods Study Design

Integration pathways
a: Quantitative literature review and descriptive statistics provide sensitizing concepts
b: Preliminary quantitative results suggest additional interview questions
c: Emergent qualitative findings generate testable hypotheses
d: Results are juxtaposed against those in the other study

**Theoretical Framework for Qualitative Study**

In the qualitative arm, I used Grounded Theory methods to develop a comprehensive understanding of social stressors and coping strategies among immigrant sexual and gender minority Latinos in North Carolina. The main outcome of the study was an inductively derived conceptual model of alcohol use among study participants. Grounded Theory does not constitute a formal theory. Rather, it produces theory. It is a set of qualitative methods used to generate and validate theoretical explanations of social phenomena and provided the underlying framework for the interview study. Grounded Theory was first proposed in the mid-1960s in response to a perceived decline in the methodological rigor of qualitative research (Glaser & Strauss, 1967). Drawing on the Chicago tradition of sociology, in particular its roots in Symbolic Interactionism, as well as the contrasting tradition of positivist empiricism, Grounded Theory allowed researchers to derive abstract theoretical propositions from empirical data. Since its inception, Grounded Theory has developed multiple, divergent variations, with a key distinction occurring between objectivist and constructivist orientations (Corbin & Strauss, 2008; Morse et al., 2009). As stated above, I used a constructivist approach in this research.

Regardless of the sub-type, all Grounded Theory studies share several common characteristics, including: simultaneous data collection and analysis; focus of basic social processes during analysis; inductive construction of abstract categories during analysis; theoretical sampling (i.e., data collection to refine categories based on accumulated knowledge); and integration of categories into a coherent theoretical framework that "specifies causes, conditions, and consequences of the studied processes" (Charmaz, 2002). In my judgment, Grounded Theory was particularly valuable for the interview study because it could give voice to participants' experiences, which otherwise might not be expressed or recognized. For example, there was no extant theory to explain the social stressors encountered by immigrant sexual and gender minority Latinos in the Southeast US

or their attendant coping behaviors, including alcohol use. Grounded Theory provided the tools to develop of a conceptual model specific to this population, time, and place to explain the phenomena.

**Theoretical Frameworks for Quantitative Study**

Three theoretical frameworks informed and guided the quantitative study. First, the Transactional Model of Stress and Coping provided a heuristic for understanding the processes involved in coping with social stressors.  According to the model, stressors occur as interactions between an individual and the environment (Lazarus & Folkman, 1984). Stressors are first identified through a primary appraisal process, in which an individual judges the severity of a potential stressor and his susceptibility to it.  If the interaction is determined to be benign, no response is necessary; it is not a stressor.  However, if the interaction is perceived as a threat, a demand, or a challenge, coping action is required.  In a secondary appraisal process, the individual judges the extent to which the stressor is modifiable and gauges the coping resources at his disposal.  Coping strategies are then selected, with the choice partially influenced by individual personality and cognitive style. Both primary and secondary appraisal processes may occur without conscious awareness, and they are often repeated in an iterative re-appraisal process when the stressor is ongoing.  Unfortunately, the Transactional Model of Stress and Coping fails to include the full range of factors that affect coping, such as social conditions that limit availability of some strategies.

Building upon the Transactional Model, a number of typologies of coping have been developed, the simplest of which organizes coping responses as active or passive (Cassidy, 1999).  Active coping largely consists of problem management, such as attempts to reduce the stressor by changing the situation, or emotional regulation, such as efforts to manage reactions to the stressor.  Although a complex behavior with multiple motivations, alcohol

use may be seen as an active coping response to stress. The Tension Reduction

Hypothesis, and its extension the Stress-Response Dampening Model, holds that alcohol

alleviates the physiological and psychological symptoms of stress and that individuals are

motivated to consume alcohol under conditions of stress. (Greeley & Oei, 1999; Jung, 2010;

Rivers, 1994; Sayette, 1999). In contrast, passive coping, as the term suggests, may

actually result in no action. Examples include learned helplessness and fatalism.

Regardless of the type of strategy, outcomes of the coping process may include changes in

cognitions, emotional states, physiological responses, and health-related behaviors (Cohen,

Evans, Stokols, & Krantz, 1986; Glanz & Schwartz, 2008).

     In the quantitative study, I conceptualized alcohol consumption among immigrant

sexual and gender minority Latinos as an active coping behavior—more precisely an

avoidant emotional regulation strategy—used to minimize psychological distress when they

were powerless to change the circumstances in which particular social stressors occur.

Among potential stressors, the strain caused by migration to a foreign country and

adaptation to a different cultural context were important psychological demands (Berry,

1980; Goebert, 2009). Broadly labeled "acculturative stress," research among Latino

immigrants has found consistent negative associations between such stress and physical

and mental health outcomes (Arbona et al., 2010; Caplan, 2007; Hovey & Magana, 2000).

Acculturative stress was not measured in the parent study, and for reasons described in

Chapter Two I avoided using the term; however, three relevant migration-related stressors

were examined as potential sources of stress: migration as an adult (versus as a child less

than 18 years old), English language use (a proxy for functional participation in the dominant

American society), and duration of cultural contact (operationalized as length of time in the

US).

     Second, the Minority Stress Model served as an adjunct to the Transactional Model

to identify other salient social stressors for immigrant sexual and gender minority Latinos.

This model is an extension of earlier work that conceptualized unique race-related stressors, particularly for African-Americans, and their effects on mental and physical health outcomes (Clark, Anderson, Clark, & Williams, 1999; Harrell, 2000). It relies on the basic premise of stress and coping presented by Lazarus and Folkman.  In brief, the model posits that experiences of racially motivated discrimination constitute stressful interactions that people of color face as minority members of society.  These events contribute excess stress (i.e., above and beyond expected daily stressors) that is attributable to membership in a racial minority group.  More recent work has further elaborated the nature of these stressors, finding that repeated and subtle acts of discrimination, such as being treated with less courtesy than others or being mistaken for a restaurant worker rather than a patron, are as important as explicit and overt experiences of discrimination (Essed, 1991; Williams & Williams-Morris, 2000).  Labeled "everyday racism," such pervasive and repeated acts are thought to have an additive effect over time (Williams & Williams-Morris, 2000), and have been associated with cardiovascular disease, poorer mental health, and decreased health care utilization, among other outcomes (Ajrouch, Reisine, Lim, Sohn, & Ismail, 2010; Banks, Kohn-Wood, & Spencer, 2006; Burgess, Ding, Hargreaves, van Ryn, & Phelan, 2008; Friedman, Williams, Singer, & Ryff, 2009; Gee, Spencer, Chen, & Takeuchi, 2007; Mouton et al., 2010; Tomfohr, Cooper, Mills, Nelesen, & Dimsdale, 2010).

Building upon the theoretical framework of race-based minority stressors, Meyer has elaborated a model for sexual minorities (Meyer, 1995, 2003a).  In this model, three domains related to sexual orientation are conceptualized as distinct sources of psychological stress for gays and lesbians.  The first is internalized homophobia, which has often been described as a gay person's individual acceptance of negative societal attitudes and beliefs about gays and lesbians.  Second is stigma, which reflects disapproving social attitudes about the minority group, construed as deviance from the dominant heterosexual norm, and attendant devaluation of members of the minority group.  Third, experiences of

discrimination due to sexual orientation, like racially motivated discrimination, include both interpersonal and systemic discrimination, such as judgment, intolerance, or unfair treatment due to minority sexual orientation. Each of these specific social stressors for gays and lesbians has shown associations with mental health outcomes, substance use behaviors, and suicide (Gilman et al., 2001; Mays & Cochran, 2001; Wong, Weiss, Ayala, & Kipke, 2010). I used both formulations of the Minority Stress Model (i.e., relating to racial/ethnic minorities and to sexual orientation minorities) in this study to operationalize discrimination as a social stressor. For example, immigrant sexual and gender minority Latinos in North Carolina may have experienced discrimination due to their ethnicity as well as their sexual orientation. Additionally, Meyer's model proposes that internalized homophobia will be a source of stress for gays and lesbians. Discrimination due to sexual orientation and internalized negative attitudes were included in the study as unique stressors; however stigma associated with minority sexuality, the second source of stress identified by Meyer's Minority Stress Model, was not measured in the parent study and therefore was not included in these analyses.

Third, Social Support Theory provided complementary mechanisms to explain the association of social stressors with health outcomes. Social support is not a single theory; rather, it is a theoretical concept with a set of coherent propositions that has emerged from several decades of empirical evidence (Gottlieb & Bergen, 2010; Heaney & Israel, 2008). The field of public health now recognizes that social support is an important determinant of health, particularly as it may interact with other social characteristics associated with health outcomes, such as socio-economic position and social integration (Grundy & Sloggett, 2003; Stansfeld, 2006; Weyers et al., 2008).

In a seminal paper, House and colleagues (1988) identified four categories of support—emotional, instrumental, appraisal, and informational—that explain the functional benefits of interpersonal ties. According to this typology, emotional support refers to

expressions of empathy, love, and caring; instrumental support consists of the provision of necessary tangible goods or services; appraisal support is a form of constructive feedback that supports self-evaluation; and informational support encompasses advice, suggestions, and knowledge (Heaney & Israel, 2008).   In contrast to other products of social relationships, such as social norms, social support is always intended to be helpful, is a conscious act, and is directed toward a specific problem.  There is a substantial body of evidence showing that social support conveys a protective effect for a wide variety of health outcomes, including cardiovascular disease, stroke, infectious disease, and all-cause mortality (Berkman, Glass, Brissette, & Seeman, 2000; Cassel, 1976; Lebowitz, 1975; Lindheim & Syme, 1983; Syme, 1987; Yen & Syme, 1999).  Further elaboration of the observed protective effects has resulted in the stress-buffering hypothesis, which proposed that social support may reduce exposure to stressors or bolster coping responses (Cohen & Wills, 1985; Ganster & Victor, 1988; Thoits, 1986).  Specifically, social support should impact secondary appraisal, or judgment about the repertoire of coping responses, particularly the process of emotional regulation.

The limited research on social support among sexual minority Latinos has largely been restricted to HIV-related topics. Social support has been found to be positively associated with condom use and disclosure of HIV status (Carlos et al., 2010; M. C. Zea, Reisen, Poppen, Bianchi, & Echeverry, 2005).  It has also been found to moderate associations between disclosure of HIV status to parents and disease status (Fekete et al., 2009).  One study found that, compared to other African-Americans and Latinas with HIV, Latino men who have sex with men (MSM) were more likely to obtain social support from friends and healthcare providers than family members (Wohl et al., 2010).

**Quantitative Study Conceptual Model**

  Drawing upon the theories and empirical evidence described above, I derived a conceptual model for the quantitative study (Figure 3.3). The Transactional Model of Stress and Coping provided the basic structure of the model, which focused on alcohol use as a coping behavior in response to social stressors. Empirical evidence and the Minority Stress Model served to identify three potential sources of stress for immigrant sexual and gender minority Latinos. In addition, Social Support Theory suggested a moderated relationship in which social support could attenuate the association between social stressors and alcohol consumption.
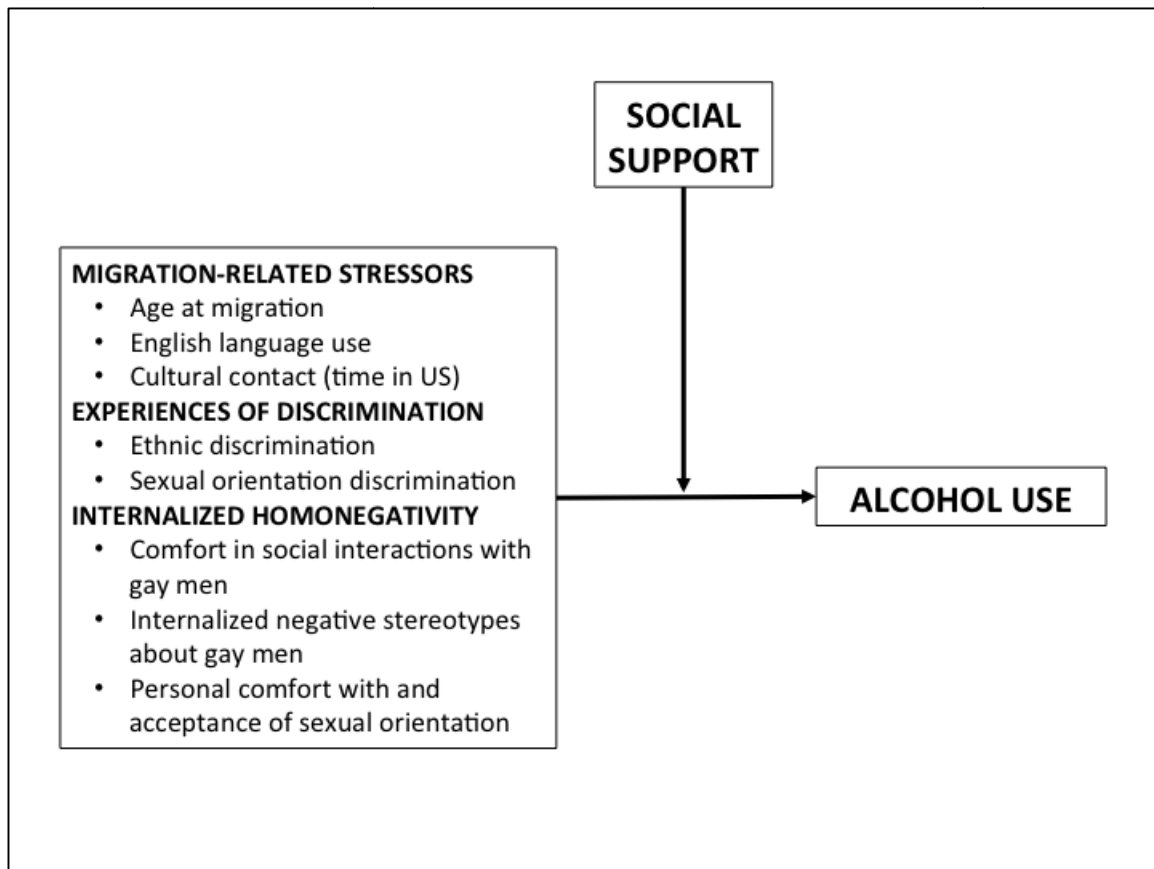


Figure 3.3 Quantitative Study Conceptual Model

As shown in the figure above, each social stressor was operationalized by two or more variables. Three types of migration-related stressors were identified as possible correlates of drinking. For example, migrating as a child could be less stressful than migrating as an adult because of the greater cognitive flexibility at younger ages. In other words, children might acquire the new language and learn cultural patterns quicker than adults, resulting in less stress. Conversely, limited English language use could increase the difficulty associated with navigating daily life, thereby producing stress. Greater cultural contact (i.e., length of time in US) may result in better knowledge and skills in dealing with US society, thereby producing less stress. As described previously, two types of discrimination were examined as stressors. Experiences of discrimination due to Latino ethnicity and experiences of discrimination due to minority sexual orientation are each assumed to produce stress, above and beyond average daily stressors. Finally, three aspects of internalized homonegativity were modeled. Although an internal attitude, the effect of internalized homonegativity was dependent on social interactions. Specifically, less comfort in social interactions with gay men, greater internalized negative stereotypes about gay men, and lower personal comfort with and acceptance of same-sex sexual orientation were each assumed to produce stress. The effect of the above named stressors, however, was assumed to depend on the level of social support available to an individual. Concordant with the Stress Buffering Hypothesis, social support was anticipated to increase perceived coping resources in the secondary appraisal process by providing emotional support that improves coping efforts (i.e., emotional regulation).

Although strongly grounded in theory and evidence, this conceptual model was not without limitations. Specifically, primary and secondary appraisal processes of the Transactional Model were not measured by the parent study; hence, they did not appear in this study's conceptual model. This has been a common omission. I searched the peer-reviewed literature and found numerous studies of stress and coping in which appraisal

processes were omitted or inconsistently measured (Cassidy, O'Connor, Howe, & Warden, 2004; Harzke et al., 2004; Hocking & Lochman, 2005; Rao, 2009). In addition, this study's operationalization of migration-related stressors was limited in its scope, only examining current stressors experienced in North Carolina.  There could be other stressors, such as pre-migration poverty in country of origin and trauma during migration (e.g., unauthorized entry into the US), that exerted an ongoing influence on alcohol consumption.  Furthermore, one of the stressors posited by Meyer's Minority Stress Model, gay-related stigma, was not measured in the parent study and was excluded from the study as a possible social stressor. Because this constituted preliminary research on stress and coping in a sub-group about whom we know very little, such an omission should be acceptable.  Finally, social support was measured with the Index of Sojourner Social Support (ISSS), a recently developed instrument to assess two categories of social support among adults living outside their country of origin: instrumental and social-emotional support (Ong & Ward, 2005).  In preliminary analyses, I performed a confirmatory factor analysis in which I found that the scale's original two-factor structure was not supported by the data for this analysis (Gilbert & Rhodes, 2012b).  Thus, social support was modeled as a single-factor measure of some latent construct, presumed to be general social support.

**Research Question, Specific Aims, and Hypotheses**

This dissertation sought to address an overarching public health problem—risky drinking among immigrant sexual and gender minority Latinos—by developing a comprehensive understanding of social stressors and coping strategies.  The central hypothesis was that alcohol consumption would be associated with social stressors because of its role as a possible coping behavior, but that social support might attenuate such a relationship.  Research questions, specific aims, and hypotheses are described below.  The

qualitative study addressed Research Question 1; the quantitative study addressed Research Questions 2 and 3.

**Research Question 1:** What are the social stressors faced by immigrant sexual and gender minority Latinos in North Carolina?

**Specific Aim 1:** To explore the social stressors experienced by immigrant sexual and gender minority Latinos and the coping strategies adopted in response, with particular attention to the role of alcohol consumption. As an exploratory aim, no hypotheses have been proposed. Rather, six focused questions guide the qualitative investigation.

> **Question 1a:** What are the most salient social stressors for immigrant sexual and gender minority Latinos?
>
> **Question 1b:** How does migration fit into the set of stressors experienced by immigrant sexual and gender minority Latinos?
>
> **Question 1c:** How does discrimination fit into the set of stressors experienced by immigrant sexual and gender minority Latinos?
>
> **Question 1c:** How does sexual orientation fit into the set of stressors experienced by immigrant sexual and gender minority Latinos?
>
> **Question 1d:** What strategies are used by immigrant sexual and gender minority Latinos to cope with social stressors?
>
> **Question 1e**: How does alcohol consumption fit into the set of coping strategies?

**Research Question 2:** What is the relationship between social stressors and alcohol consumption among immigrant sexual and gender minority Latinos in North Carolina?

**Specific Aim 2:** To quantify the association of specific social stressors with alcohol consumption.

**Hypothesis 2a:** Migration as an adult (i.e., age 18 years or older) will be positively associated with alcohol consumption.

**Hypothesis 2b:** English language use will be negatively associated with alcohol consumption.

**Hypothesis 2c:** Cultural contact (i.e., time in US) level will be negatively associated with alcohol consumption.

**Hypothesis 2d:** Experiences of discrimination due to ethnicity will be positively associated with alcohol consumption.

**Hypothesis 2e:** Experiences of discrimination due to sexual orientation will be positively associated with alcohol consumption.

**Hypothesis 2f:** Comfort with social interactions with gay men and other MSM will be negatively associated with alcohol consumption.

**Hypothesis 2g:** Adherence to negative stereotypes about gay men and other MSM will be positively associated with alcohol consumption.

**Hypothesis 2h:** Personal comfort and acceptance of same-sex sexual orientation will be negatively associated with alcohol consumption.

**Research Question 3:** How does social support affect alcohol consumption among immigrant sexual and gender minority Latinos in North Carolina?

**Specific Aim 3:** To test whether social support moderates the relationship between social stressors and alcohol consumption.

**Hypothesis 3a:** Social support will buffer the positive relationship between migration as an adult and alcohol consumption, such that the relationship will be weaker among men reporting higher social support.

**Hypothesis 3b:** Social support will buffer the negative relationship between English

language use and alcohol consumption, such that the relationship will be weaker

among men reporting higher social support.

**Hypothesis 3c:** Social support will buffer the negative relationship between cultural

contact and alcohol consumption, such that the relationship will be weaker among

men reporting higher social support.

**Hypothesis 3d:** Social support will buffer the positive relationship between

discrimination due to ethnicity and alcohol consumption, such that the relationship

will be weaker among men reporting higher social support.

**Hypothesis 3e:** Social support will buffer the positive relationship between

discrimination due to sexual orientation and alcohol consumption, such that the

relationship will be weaker among men reporting higher social support.

**Hypothesis 3f:** Social support will buffer the negative relationship between comfort

with social interactions with gay men and other MSM and alcohol consumption, such

that the relationship will be weaker among men reporting higher social support.

**Hypothesis 3g:** Social support will buffer the positive relationship between

adherence to negative stereotypes about gay men and other MSM and alcohol

consumption, such that the relationship will be weaker among men reporting higher

social support.

**Hypothesis 3h:** Social support will buffer the negative relationship between personal

comfort and acceptance of same-sex sexual orientation and alcohol consumption,

such that the relationship will be weaker among men reporting higher social support.

**CHAPTER FOUR: RESEARCH METHODS**

As a mixed-methods investigation, this study combined complementary qualitative and quantitative methods to address the overarching research question: what explains alcohol use among immigrant sexual and gender minority Latinos?  As explained in Chapter Three, a mixed qualitative-quantitative design was adopted because it was particularly well suited to exploring the complex phenomena under investigation: social stressors, coping strategies, and drinking behaviors.  This chapter describes the qualitative and quantitative arms' methods, including their respective sampling strategies, measures, data collection and management procedures, and analysis plans. It concludes by discussing how findings were integrated.

**Qualitative Study**

*Advisory Committee*

Recognizing that I had limited experience conducting research among Latino populations, and mindful of my position as an outsider to the study population, I convened a five-person Advisory Committee of academics, community members (including sexual minority Latinos), and a representative of a social service organization that serves Latinos (Advisory Committee Roster, Appendix A). As a panel of experts, the Advisory Committee provided advice on recruitment, reviewed and revised the initial interview guide, assisted with some analytic decisions (e.g., determination of theoretical saturation), and helped interpret findings.  The Advisory Committee met four times over the course of the study

(October 2011, June 2012, October 2012, and February 2013). Service on the Advisory

Committee was voluntary; no members received any remuneration.

*Sampling Strategy*

Immigrant sexual and gender minority Latinos are often considered a hidden and

hard-to-reach population, particularly from the point of view of researchers who are

outsiders (M. Zea, Reisen, & Diaz, 2003). No population-based sampling frame can be

developed, and their potentially stigmatizing characteristics (e.g., migration status, sexual

orientation) may inhibit recruitment for research studies. Therefore, I relied on referrals by

the Advisory Committee members, Latino community leaders, and study participants

themselves to introduce me to sexual minority Latino individuals, whom I invited to

participate in the study. Given that I am a non-Latino White male academic, I believed such

personal referrals were the best strategy to overcome differences of ethnicity, language, and

socio-economic position. The referrals also had the advantage of drawing on *personalismo*,

a Latino cultural characteristic that stresses the importance of personal relationships

(Marsiglia & Kulis, 2009).  The referrals facilitated my entrée into the Latino community and

may have reassured potential participants that I was trustworthy.

All interview participants met four eligibility criteria. They were 18 years or older, had

been born outside the US, self-identified as Latino, and reported having had sex with

another man since age 18.  Self-identifying as gay was not an eligibility requirement;

however, all but one participant did so. Participants received a $20 gift card to a department

store or grocery store, their choice, as remuneration for each interview.  There was no

incentive for referring other potential participants to the study.

The study was designed to recruit up to 25 participants. After coding the fifteenth

interview, I determined that I had achieved theoretical saturation of drinking, the behavior of

interest.  In other words, repeating and recurring themes about alcohol use suggested that I

had exhausted all the information I could obtain from this population and that further data collection would not yield additional insights.  This claim of saturation was reviewed and supported by the Advisory Committee. Although there is widespread agreement among qualitative methodologists that theoretical saturation be used as the criterion for terminating sampling, there are few explicit guidelines. Recommendations for Grounded Theory studies have ranged from 20-35 interviews (Cresswell, 1998; J. Morse, 1994), although fewer participants may be needed when the sample is homogeneous. A recent investigation of communication about prostate cancer among Latino men achieved theoretical saturation in 16 interviews (Maliski, Connor, & Litwin, 2012), and an earlier methodological study found that 90% of qualitative codes had been elaborated within 12 interviews and that the thematic structure changed little with subsequent data collection (Guest, Bunce, & Johnson, 2006). These studies demonstrated that relatively small samples can produce sufficiently rich data.

Based on a participant's suggestion, I modified the study design in January 2013 so that I could conduct up to five interviews with representatives of faith-based and community-based organizations serving immigrant sexual and gender minority Latinos.  As key informants, these participants provided complementary data to contextualize the findings and confirm my interpretations. I identified three key informants through relationships that I had developed over the course of the study and approached them directly to request their participation.  All key informants met two eligibility criteria: (1) they were 18 years or older; and (2) they had worked for one year or more in a faith-based or community-based organization that serves immigrant sexual and gender minority Latinos. It was not required that they be a sexual minority or Latino; however, two key informants did self-identify as gay men and all self-identified as Latino. Key informants received a $20 gift card to a department store or grocery store, their choice, as remuneration for an interview.

*Measures and Data Collection Procedures*

I conducted the 15 semi-structured interviews in Spanish or English, according to the participant's preference, between May 2012 and January 2013. Eight interviews (53%) took place entirely in Spanish, five (33%) entirely in English, and two (13%) in a mix of both languages. A research assistant (Spanish-speaking non-Latino white female) assisted with the first Spanish language interview; however, she was not included in subsequent interviews as I decided that the language assistance did not justify the added burden of two interviewers. In addition, participants responded warmly when I identified myself as a gay male, acknowledged my differences (e.g., US-born Anglo-American), and expressed a sincere desire to understand their experiences.

Interviews took place in private offices of the University of North Carolina (both on-campus and off-campus locations), at two community-based organizations serving Latinos, or in the participants' own homes according to the participant's preference. Two participants who were friends wanted to be interviewed together. All other interviews were conducted individually. One participant declined to allow audio recording of the interview. All other interviews were digitally recorded then transcribed verbatim (i.e., word for word, exactly as spoken) by a bilingual, bicultural professional transcriptionist. The transcripts included notations of audible non-verbal sounds (e.g., laughter) and background noises (e.g., barking dogs). Upon receipt of each transcript, I reviewed it for accuracy against the recording, making corrections as necessary and removing all potentially identifying details from transcripts. For interviews done in Spanish, the transcriptionist also provided an English translation, which I reviewed against the original Spanish transcript, making corrections as necessary. Consistent with a constructivist approach that focuses on how meaning is made in interactions (Charmaz, 2006), I met quarterly with the transcriptionist to discuss our respective roles in creating the data and its meaning (i.e., transforming spoken language

into written documents).  Such meetings also provided an opportunity to obtain feedback on my conduct of the interviews.

Interviews lasted on average 55 minutes (range 34-76 minutes). Based on content identified in the quantitative study's literature review and feedback from the qualitative study Advisory Committee, the interview guide included general questions about stressors, the participant's migration history, social support, coping behaviors, and alcohol use (Qualitative Study Interview Guides, Appendix B). I had anticipated that migration status might be an impediment to recruitment or inhibit disclosure during interviews because of its sensitive nature.  Thus, I purposively excluded it from the interview guide.  In the eligibility screening, I explained to potential participants that I would not ask about their migration status but that they were free to discuss it if they chose.  Because interviews were semi-structured, I did not adhere strictly the guide. Rather, I had the flexibility to pursue relevant data as it emerged. In addition, participants were free to decline to answer any question or to introduce new topics as they wished. When necessary, I used open-ended probes to elicit further details about a topic, such as "tell me more," or "what does that mean to you?" Reflecting the principle of theoretical sampling (Corbin & Strauss, 2008), I revised the guide after each interview. Such continuous revisions responded to both the interview process (i.e., problematic questions were revised or deleted) and emerging themes (i.e., accumulating data prompted the addition of new questions).  In contrast to positivist research that seeks to deliver the same question in the same way to each participant, ongoing revision of the data collection instrument is a hallmark of Grounded Theory methods.  As Corbin stated, "a researcher cannot possibly know all the questions to ask when beginning a study.  It is only through interaction with data that relevant questions emerge" (Corbin & Strauss, 2008, p. 216).

In addition to the discussion of drinking, each participant completed a paper version the AUDIT-C, a three-item screener designed to categorize drinking (Bradley et al., 2007;

Frank et al., 2008), at the conclusion of the interview. This supplemented the qualitative data and allowed me to make general classifications of participants' drinking patterns (e.g., abstainer; current drinker within safe levels; or current drinker with indications of potentially hazardous drinking). Because some participants age 18 to 20 might report drinking alcohol, an illegal behavior at their age, or the interviews might elicit information about migration status, a potentially sensitive topic, I obtained a Certificate of Confidentiality from the National Institutes of Health to safeguard participant data (Human Subjects Protections, Appendix C). In addition to audio recordings, I wrote field notes immediately upon completion of each interview. The field notes documented the interview process and provided an opportunity for me to remark on the content, noting what stood out as noteworthy and identifying new questions might be pursued in future interviews. Field notes also supplemented transcripts as data sources for analysis. Within 24 hours of each interview, I listened to the interview recordings and added any additional observations to the field notes.

Between October 2012 and January 2013, I invited six participants whose initial interviews had been especially rich and productive to participate in individual member-check interviews; four of these participants completed a second interview. These interviews were an opportunity for me to present emergent findings and preliminary interpretations for feedback and elaboration. As before, participants received a $20 gift card to a department store or grocery store, their choice, as remuneration for a second interview.

All participants provided informed consent. The University of North Carolina Public Health-Nursing IRB reviewed and approved all study procedures and materials (Human Subjects Protections, Appendix B)

*Data Management*

To protect the confidentiality of data, I transferred the digital recordings of interviews from the recorders to a secure computer server (i.e., password protected) at the Gillings School of Global Public Health, where they have been maintained for reference until analysis is completed. Electronic transcripts of interviews were also stored on the same secure server. Written records generated during the recruitment process, such as completed eligibility screening forms that included names and phone numbers, signed informed consent forms, AUDIT-C questionnaires, and hard copies of transcripts have been kept in a locked filing cabinet in a locked office suite in the Department of Health Behavior. Upon satisfactory defense of this study, all electronic files will be removed from the secure server and placed on discs for storage. Discs and hard copies of data will be locked in secure university storage for reference (if needed) for five years after which time they will be destroyed using a confidential shredding company. Only Dr. Eng and I have access to the electronic files and hard copies of data.

*Analysis*

I used Grounded Theory methods, a set of qualitative techniques designed to inductively produce theoretical explanations of social phenomena, to address Aim 1. Over 40 years have elapsed since Anselm Strauss and Barney Glaser published *The Discovery of Grounded Theory* (Glaser & Strauss, 1967), and various interpretations of the method have developed. I largely adhered to the tradition espoused by Strauss, and later Corbin and Strauss (Corbin & Strauss, 2008; Strauss & Corbin, 1998). In my opinion, they struck an ideal balance between prescriptive guidelines and flexibility of application. Hallmarks of their approach included simultaneous data collection and analysis, constant comparison of data, inductive development of abstract categories, insight through memo-writing, and production of an explanatory theory. In contrast, the Glaser tradition, which may be considered the

most orthodox of Grounded Theory interpretations, provided fewer guidelines, retained some positivist assumptions, and made unrealistic demands of the analyst (e.g., approaching the data with no preconceptions).

I also drew upon a constructivist interpretation of Grounded Theory (Charmaz, 2006). As one of the variations to emerge in the "second generation" of Grounded Theory research (JM Morse, et al., 2009), I saw it as an extension of earlier interpretations. In fact, some scholars believe that Strauss and Corbin had been evolving towards a constructivist orientation but had not explicitly named it as such (Mills, Bonner, & Francis, 2006a, 2006b). The constructivist approach rejects the notion that there is any discovery to make. In contrast, it emphasizes process and recognizes that both data and their meaning are made through interactions (e.g., interviewer-participant). I found it particularly appealing for this study's focus on complex social processes (e.g., social stressors, coping strategies, drinking behaviors).

I deviated from traditional Grounded Theory, particularly as espoused by Glaser (Glaser, 1992), by conducting a literature review for the quantitative study, which also informed the qualitative study, before beginning any interviews and analysis. Strict interpretations of Grounded Theory methods require the analyst to avoid all preconceptions about the phenomenon under study. The goal of this injunction is to maximize receptivity to concepts, which should emerge freely from the data. Pragmatically, this has often been interpreted as delaying any literature review until after analysis has been completed. While idealistic, I believe it is an unrealistic proposition as some degree of preconception is necessary to formulate a research question. Among the refinements proposed by second wave Grounded Theory practitioners, the prohibition has often been relaxed. It has been suggested that the necessary characteristic is simply an open, inquisitive mind. As Dey (2007) stated, "The point is not to avoid preconceptions, but to ensure that they are well-grounded in arguments and evidence, and always subject to further investigation, revision,

and refutation" (p. 176).  In this study, the early literature review provided several sensitizing concepts, such as experiences of discrimination and use of social support, which I used as points of departure for the qualitative study (Bowen, 2006).  In other words, I developed a basic understanding of alcohol use among immigrant Latino men and among sexual minorities before beginning data collection.

I began the analysis with line-by-line open coding, which served to decontextualize the data and identify actions and processes (Holton, 2007). I applied structural codes, such as drinking behavior or social stressors, in a second round of coding to categorize text segments that corresponded to interview topics.  Structural codes are a common data reduction technique and served as preliminary conceptual categories (Namey, Guest, Thairu, & Johnson, 2007; Saldaña, 2013). I also employed process codes to examine the mechanics of each interview, such as when I asked a closed-ended question or when participants switched languages (Saldaña, 2013). Process codes helped me evaluate the quality of the interview and identify poorly worded questions.

Data collection and initial analysis occurred simultaneously. After completing initial coding of all transcripts, I developed a reduced set of focused codes, grouping them into families that represented emergent concepts. Following the principle of constant comparison, in which data are continually examined within and across participants to build conceptual categories, I re-analyzed the transcripts using the reduced set of focused codes and identified key concepts. All coding was an iterative process; I revised and reapplied the codes several times (Final Code Book, Appendix D).

In addition, I drew on other qualitative analytical techniques.  I wrote narrative summaries, recreating participants' stories in order to look for patterns across individuals (G. Gibbs, 2007). Once conceptual categories had been elaborated through focused coding, I used matrix displays to identify relationships and spur development of a conceptual model (Miles & Huberman, 1994).  Key matrices included participants by stressors, participants by

coping strategies, and stressors by coping strategies. Throughout the analysis, I wrote analytic memos to document decisions, capture insights, and identify new ideas.  These were supplemented by a personal response journal, in which I wrote reflexively on my position relative to the study population and documented emotional responses to the study (Rodgers & Cowles, 1993). Such personal documentation maximized self-awareness of my role in the research process and was consistent with a constructivist orientation.  I used ATLAS.ti v7 (Scientific Software Development, Berlin, Germany) to perform the coding and maintain analytic memos and Microsoft Word to compose the narrative summaries, matrices, and the personal response journal.

Because of a desire to stay close to the data, I conducted all analyses in the original language of the interviews. I have used English translations of Spanish-language interviews only in final reports of the study's findings.  Recognizing the challenge of performing the analysis outside my native language, I completed two intermediate Spanish courses at the University of North Carolina at Chapel Hill (SPAN 203 and SPAN 204) and attended four weeks of Spanish immersion courses in Mexico prior to beginning the study. In May 2012, I sat for the *Diploma de Español como Lengua Extranjera* (DELE), a proficiency exam administered by the Instituto Cervantes and recognized by the Ministry of Education, Culture and Sport of Spain (www.dele.org).  I was awarded the high-intermediate level B2 (fourth of six levels). Thus, I believed I had obtained sufficient skills to conduct interviews and perform the analysis in Spanish.

*Protections Against Risks*

Prior to data collection, I identified several potential risks to interview participants, including: (1) discomfort or emotional distress due to discussing and verbalizing stressors, or perceiving one's minority status from another perspective during the interview; (2) potential loss of privacy via face-to-face interviews; and (3) threats to the confidentiality of data

obtained during the interviews.  To protect against emotional distress resulting from the interview topics and process, I began each interview with an explanation that participants were free to refuse to answer any question and could terminate the interview at any time without ramification. As stated previously, I explained in the eligibility screening that I would not ask participants about their immigration status but that they were free to discuss it if they chose. To protect against potential loss of privacy, interviews were conducted in private offices at community-based organizations serving the Latino community (e.g., Chatham Social Health Council, Siler City, NC) or at the University of North Carolina at Chapel Hill.  I collected minimal identifying information during recruitment, eligibility screening, and interviews; identifying information included potential participants' first names and telephone numbers and participants' first and last names via the informed consent form. At the outset of each interview, I assigned a study pseudonym to the participants and asked that he use fictional names when talking about other people.  In that way, only pseudonyms would appear in the transcripts. To protect against forced disclosure of potentially illegal activity, such as underage drinking or undocumented immigration status, I obtained a Certificate of Confidentiality from the National Institutes of Health (Human Subjects Protections, Appendix C). The Certificate was intended to protect against forced disclosure of participants' identifying information in any civil, criminal, administrative, legislative, or other proceeding, whether at the federal, state, or local level. Over the course of the study, there were no adverse events, breaches of confidentiality, or deviations from the approved protocol.

*Quality Assurance*

Although the question of rigor is a challenge in all research, it is particularly important in constructivist studies in which sampling strategies and interview questions are contingent and changeable (Sandelowski, 1986).  My overarching goal was to establish the credibility, transferability, and dependability of the research findings—which roughly correspond to the

positivist concepts of internal validity, external validity, and reliability (Koch, 1994; J. M. Morse et al., 2011).  Credibility provides confidence in the "truth" of the research findings. Transferability includes not only an assessment of the relevance of the findings to other situations, but also explicit recognition of how the context shaped the research. Dependability ensures that the researcher employed the research methods according to the currently accepted standards of the scientific community (Ulin, Robinson, & Tolley, 2005).  I sought to maximize the rigor of this study through audit techniques—procedures derived from financial audits in which an auditor examines and certifies the procedures and the resulting product (Lincoln & Guba, 1985). I followed the procedures suggested by Akkerman and colleagues (2008), which was based on their evaluation of earlier models, and used Rodgers and Cowles' (1993) typology of documentation to determine the materials that would constitute the audit trail.

First, Contextual Documentation gathers information about the data collection activities, including the primary data sources.  In this study it took the form of field notes, which I completed immediately after each interview to record observations and impressions. Second, I combined Methodological Documentation, which is intended to record decisions about the research strategies and to identify the rationale for these decisions, with Analytic Documentation, which captures the analyst's thought process and theoretical insights as the analysis unfolds.  Such documentation may include ideas about emerging categories or themes, new or refined questions to be pursued, and early formulations of the theoretical model.  As principal analyst, I wrote analytic memos in the Atlas.ti program. The analytic memos were often, but not always, synchronized with the transcripts, i.e., linked to specific quotations), providing empirical support for observations and decisions.  Third, Personal Response Documentation is intended as a reflexive document where the researcher's psychological and emotional responses to the research are recorded.  It is important because it promotes self-awareness, helps explicate the researcher's philosophical

orientation, and may facilitate identification of biases in the analysis.  I record notes about the research experience in a Personal Response Journal, which I kept as a Microsoft Word file on my personal password-protected laptop computer with a back-up copy on the secure computer server at the Gillings School of Global Public Health.

**Quantitative Study**

*Data Source*

Data for this study came from an investigation of HIV risk and protective factors among immigrant sexual and gender minority Latinos in North Carolina (R21HD049282). A community-based participatory research (CBPR) partnership guided the parent study and included representatives from public health departments, AIDS service organizations, universities, the local Latino community (including immigrant sexual and gender minority Latinos), and community-based organizations serving the Latino community.  The parent study used Respondent-Driven Sampling (RDS) to recruit participants. RDS is an extension of chain-referral methods that enables researchers to sample populations when no population-based sampling frame can be established (Heckathorn DD, 1997; Magnani, Sabin, Saidel, & Heckathorn, 2005; Ramirez-Valles, Heckathorn, Vazquez, Diaz, & Campbell, 2005). Initially, the CBPR partnership identified eight seeds, participants chosen to represent the diversity of the local sexual minority Latino community (e.g., by level of "outness" about their sexual orientation, country of origin, gender identity, and HIV status). Nine additional seeds were enrolled during data collection to expedite recruitment in accordance with standard RDS procedures, for a total of 17 seeds.  All participants met four eligibility criteria: they (1) self-identified as Latino; (2) were age 18 or older; (3) reported having had sex with a man since age 18; (3) and provided informed consent.  Each seed completed a psychosocial and behavioral assessment, received instruction on the study's recruitment protocol and eligibility criteria, and recruited up to three additional participants

from his social network.  Each subsequent participant completed an assessment, received instruction on the study's recruitment protocol and eligibility criteria, and recruited up to three new participants from his social network. Recruitment waves continued until the target sample size (n=190) was met. Recruitment chains are shown in Figure 4.1, with seeds indicated by solid black circles.  All participants were compensated for completing their own assessment ($50) and for each referral that also completed an assessment ($20), a dual incentive process that is a hallmark of RDS methods. The Institutional Review Board at Wake Forest University Health Sciences approved the parent study. The Public Health-Nursing IRB at the University of North Carolina at Chapel Hill reviewed this study's secondary analysis of the data and determined that it did not constitute research with human subjects because all data were de-identified and no further contact with participants was proposed (Human Subjects Protections, Appendix C).
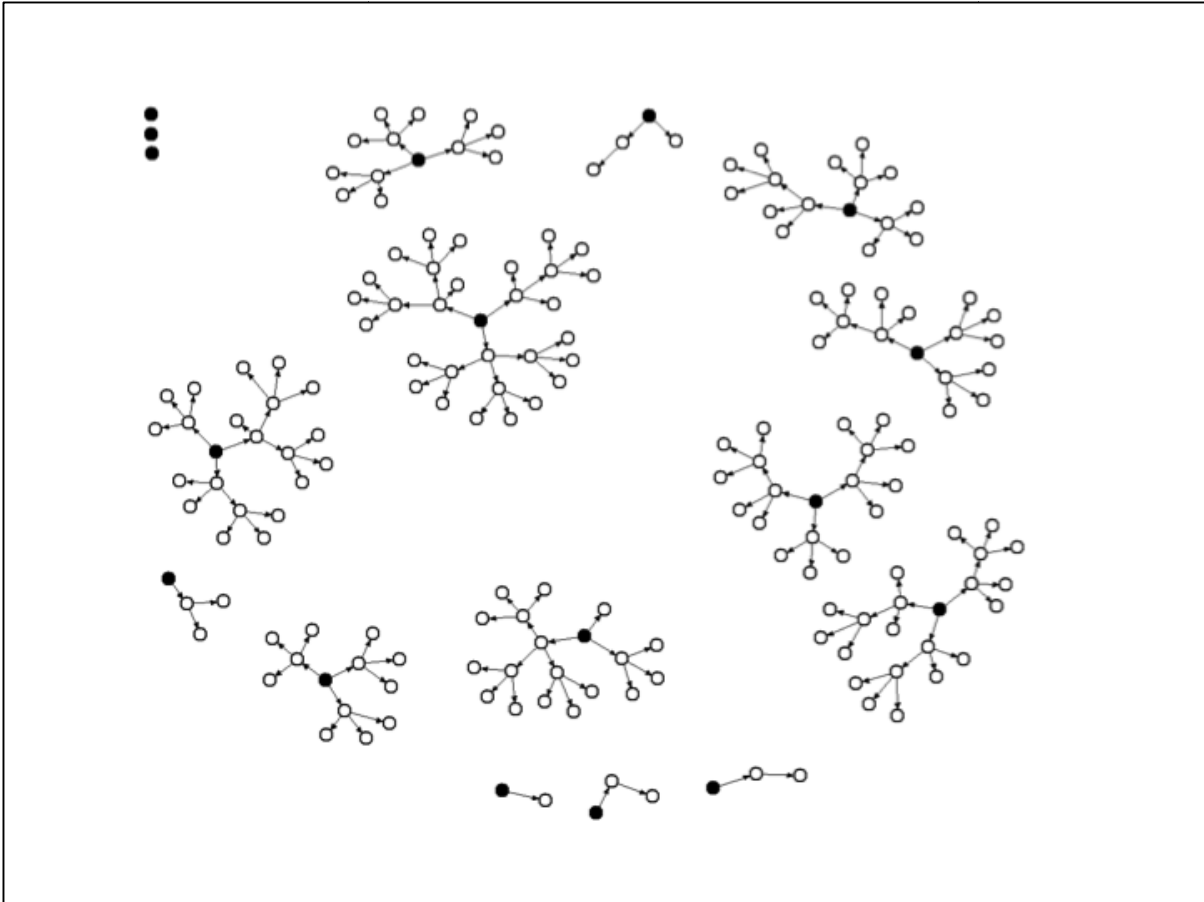
Figure 4.1 Respondent-Driven Sampling Chains

*Measures and Data Collection Procedures*

The parent study's CBPR partnership developed a comprehensive psychosocial and behavioral assessment, using established Spanish-language measures whenever possible and adapting established English measures or developing new measures when necessary. Following a committee approach, which is an increasingly preferred translation method (Behling & Law, 2000; Census Advisory Committees, 2004), a group of individuals with complementary skills was convened to translate the English items into Spanish. The group Included professional translators (including native Spanish speakers from Mexico and Central America), a translation reviewer, content specialists, and a questionnaire design expert. Multiple group members made independent translations of the assessment, and the

full committee met to discuss and reconcile the various versions.  The CBPR partnership, which included native Spanish speakers, reviewed and approved the final Spanish translation.

Although the parent study focused on HIV-related behaviors (e.g., condom use, HIV testing), data were available to investigate alcohol use, including current drinking status, frequency of drinking, and number of binge drinking episodes in the past 30 days (Quantitative Study Key Measures, Appendix E).  Current drinking status was assessed by a single item about any alcohol use in the past year (coded 0=none; 1=any).  To avoid the problem of small cell counts, I collapsed the original frequency variable from seven to four levels (coded 0=abstainer; 1=at least one drink per year but less than one per month; 2=at least one drink per month but less than one per week; 3=at least one drink per week).  Current drinkers (defined as those who had at least one drink in the past year) were asked to report the number of binge episodes in the past 30 days (defined as five or more drinks on a single occasion) and to select the most common reason for drinking from a list of seven options (1=enhance sex; 2=bored/for fun; 3=lose inhibitions; 4=lonely/depressed; 5=physical pain; 6=other; 7=don't know).

Among migration related stressors, language use was measured by the language sub-scale of the *Short Acculturation Scale for Hispanics* (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987). Five items assessed participants' language use in a variety of situations, such as "what language(s) do you usually speak with your friends?" Participants responded on a five-point bipolar scale (coded 1=exclusively Spanish to 5=exclusively English). Because a majority (59%) of participants spoke exclusively Spanish or more Spanish than English, I modeled language use in terms of English acquisition, with exclusive Spanish speakers serving as the referent group.  Participants also reported the number of years they lived in the US, which I used as a proxy for duration of cultural contact. I calculated age at migration by subtracting participants' self-reported years in the US from

self-reported age at time of interview, then created a dichotomous indicator for migration as an adult (i.e., age 18 years or older).

The parent study assessed ethnic discrimination by adapting the *Detroit Area Study Discrimination Questionnaire* (Williams, Yu, Jackson, & Anderson, 1997). Ten items presented examples of discrimination (e.g., "you were treated with less courtesy than others") and participants reported the frequency of each event (coded 1=never to 4=very frequently; $\alpha$=0.95). I created binary indicators for each type of discrimination (coded 0=none; 1=any) and summed them to create a count variable (range 0-10). Similarly, the parent study assessed sexual orientation discrimination by adapting a previously used scale of social discrimination and HIV risk among Latino gay men (Díaz & Ayala, 2001). The original instrument presented seven statements describing inter-personal harassment or internalized negative attitudes due to sexual orientation (e.g., "you had to pretend to be straight in order to be accepted") and respondents reported the frequency of each event (coded 1=never to 4=always). Before proceeding with this study, I conducted a confirmatory factor analysis, in which I discovered a two-factor structure to the sexual orientation discrimination scale. Five items loaded onto the first factor ($\lambda$=0.48 to $\lambda$=0.82); however, two items had unacceptable cross-loadings ($\lambda$s <0.40 on the first and second factors). As no items adequately captured the second factor, I deleted the two problematic items related to it. The remaining five items produced a single factor scale that had good internal consistency reliability ($\alpha$=0.75). As with racial discrimination, I created binary indicators for each type of sexual orientation discrimination and summed them to create a count variable (range=0-5).

Internalized homophobia was assessed using the *Reactions to Homosexuality Scale* (RHS), a measure of internalized negative attitudes towards same-sex sexual orientation (Ross & Rosser, 1996). Each RHS item presented a statement (e.g., "social situations with

gay men make me feel uncomfortable") and participants responded to each statement on a seven-point bipolar scale (coded 1=strongly disagree to 7=strongly agree). I performed a confirmatory factor analysis of the RHS in this sample and found that the four-factor structure of the original 26-item scale was not supported. Based on my results, I used a reduced set of 16 items that captured three dimensions of internalized homonegativity: (1) comfort in social interactions with gay men (five items, $\alpha$=0.86); (2) internalized negative stereotypes about gay men (four items, $\alpha$=0.82); (3) and personal comfort with and acceptance of same-sex sexual orientation (six items, $\alpha$=0.76).

A single item asked participants how many other immigrant sexual and gender minority Latinos they knew. This count variable was originally included as a means to understand the RDS sampling process; however, it also served as a measure of participants' social ties. The availability of social support, which is one of the benefits of connections to others, was measured using an adaptation of the *Index of Sojourner Social Support* (Ong & Ward, 2005). Originally an 18-item scale that measured socio-emotional and instrumental support, I used 11 items based on results of a preliminary validation study that found a reduced set of indicators was an excellent measure of a single latent construct, presumed to be generalized social support (Gilbert & Rhodes, 2012b). The adapted scale assessed the availability of other people for supportive functions relevant to adults living outside their country of origin (e.g., "Listen and talk with you whenever you feel lonely or depressed"; coded 0=no one would do this to 4=many would do this; $\alpha$=0.96).

The parent study also collected a number of demographic and health-related variables from each participant, including age, country of origin, self-rated health status, sexual identity, relationship status, educational attainment, employment status, and duration of residence in North Carolina.

Three native Spanish-speaking males conducted the quantitative interviews from March to December 2008.  The parent study chose face-to-face interviews, which took 45-90 minutes to complete, rather than other methods, such as audio computer assisted self-interview (ACASI), based on formative data (Rhodes, Eng, et al., 2007; Rhodes et al., 2010; Vissman et al., 2009) and feedback from CBPR partnership members suggesting that participants would be more likely to engage with a well-trained interviewer who could establish rapport and trust.  This approach was believed to be more culturally congruent given that some Latinos value *personalismo*, a cultural characteristic that stresses the importance of warm and friendly interactions and interpersonal engagement (F. F. Marsiglia & S. Kulis, 2009). Furthermore, utilizing an interviewer-administered assessment overcame potential limitations due to low literacy skills and reduced visual acuity resulting from lack of access to optical services.

*Data Management and Missing Data*

The data set for analysis, which had been stripped of individually identifying information, was stored as a SAS data file a secure computer server (i.e., password protected) at the Gillings School of Global Public Health. Before attempting the analyses, I reviewed the data set for out of range values and missing observations. Thirty-one participants (16%) had complete data on all variables; among the remaining 159 participants, data were missing on average for four variables (range 1-12 variables) per participant.  Two participants were missing values for the main outcome, any drinking versus none; I was able to derive values for drinking status based their responses to the other alcohol use items.  There was a small proportion of missing observations for frequency of drinking (4%) and binge episodes (4%).  Taking a conservative approach, I did not impute these missing values.

Among the 55 raw variables used in this study, the average level of missing observations was 2% (range 0-14%). Two variables exceeded 10% missing observations: years in US (14% missing); and one item of the ethnic discrimination scale (12% missing). Computing individual values for scales, I took the mean of all non-missing items. I imputed missing data for all other variables with SAS PROC MI using Markov Chain Monte Carlo methods, beginning with 500 iterations to establish stable estimates then taking every 100th estimated data set for a total of ten imputed data sets.  To enable multiple imputation of categorical variables, I created binary indicators for each response level except the referent group.

*Power Analysis*

Before beginning any study activities, I calculated bivariate power estimates for each of the eight explanatory variables proposed under Aim 2 using the Power procedure in SAS v9.3.  Assuming $\alpha=.05$, $\beta=.80$, and n=190, I determined that the proposed analyses were powered to detect the following minimum odds ratios for the main outcome (any drinking versus none) in a simple random sample (Table 4.1).  The original proposal included two variables, linguistic acculturation and social acculturation, that I subsequently excluded because of unacceptably high inter-item correlations. I replaced them with two new variables, English language use and Time in US, respectively.  As post-hoc power analyses are strongly discouraged (Hoenig & Heisey, 2001; Levine & Ensom, 2001), I did not repeat the power analyses once the study had begun.

Table 4.1. Power Estimates for Original Predictor Variables

| Explanatory variable | Minimum detectable odds ratio |
|---|---|
| Linguistic acculturation | 1.82 |
| Social acculturation | 2.15 |
| Time in US | 1.10 |
| Ethnic discrimination | 3.30 |
| Sexual orientation discrimination | 2.55 |
| Social comfort with gay men | 1.49 |
| Internalized negative stereotypes | 1.36 |
| Personal comfort and acceptance | 1.64 |

These estimates demonstrated a wide range of minimum detectable odds ratios and were only approximations of actual power. The analyses used individual sampling weights to adjust for the sampling design, thereby countering the diminution of effective sample size produced by non-equivalent probability of selection inherent in Respondent-Driven Sampling. The use of such weights, however, may increase or decrease actual statistical power and is difficult to estimate in advance. I maximized power for all tests through multiple imputation to replace missing data (described above), thereby ensuring use of the complete data set. Given the modest sample size (n=190), I recognize that the tests of moderation proposed under Aim 3 were likely underpowered (Aiken & West, 1991). Since this was an exploratory study, however, results that approach significance may still be useful in guiding further scientific inquiry.

*Analysis*

Under Aim 2, I hypothesized that migration as an adult, ethnic discrimination, sexual orientation discrimination, and internalized negative stereotypes about gay and bisexual men would be positively associated with alcohol use because they would exacerbate stress. Conversely, I hypothesized that English use, social comfort with gay and bisexual men, and personal acceptance of one's own sexuality would be negatively associated with alcohol use

because they would reduce stress. I began the analysis by calculating means and standard deviations or counts and proportions to describe the sample. I then performed bivariate tests of association with each hypothesized predictor, using logistic regression to model the dichotomous outcome (any drinking in past year vs. none). I used a multinomial logit model for the four-level frequency variable (yearly, monthly, or weekly drinking vs. none). Despite appearing as a rank ordering, I considered it a nominal descriptive variable. The four-level item characterized participants' pattern of drinking but could not distinguish risk because the frequency classification was unrelated to any definition of risky drinking. The only outcome that captured risky drinking was number of binge episodes (defined as five or more drinks on a single drinking occasion) in the past 30 days. As a count variable, I used a Poisson model that included a scale parameter to account for overdispersion of the outcome. As Aim 3 sought to determine whether social support would affect alcohol use, each hypothesized predictor was tested individually for moderation by social support, which was centered at the grand mean to facilitate interpretation of interactions. I followed procedures suggested by Hosmer and Lemeshow (2000), retaining all variables that had bivariate associations at $p<0.25$ for construction of multiple variable models. Preliminary multiple variable models were fit, then each variable was assessed in a backwards elimination process in which I constrained its effect to zero and performed a likelihood ratio test. I removed variables when their inclusion did not significantly improve model fit. To better understand interactions, I graphed simple slopes for each conditional effect at one standard deviation above and below the grand mean of social support and calculated the regions of significance for each interaction using an online utility (www.quantpsy.org/interact/mlr2.htm). Because traditional goodness-of-fit statistics are not available in multiple imputation, I used the COMBCHI macro (available at http://www.ssc.upenn.edu/~allison/#macros) to combine likelihood ratio chi-square statistics from analysis of each imputed data set, allowing me to test the overall null hypothesis that all coefficients equal zero. All statistical tests were

performed using SAS v9.2 (SAS Institute, Cary NC), were two-tailed, and used the critical alpha of 0.05.

*Adjustment for Sampling Strategy*

The quantitative data were obtained through Respondent-Driven Sampling (RDS), which violated the assumption of independence of observations required by standard regression modeling. Namely, the clustering of participants within recruitment chains resulted in dependence in the data. Without correction, standard errors may be under-estimated and risk of Type I error increased. Because RDS is a relatively recent methodological development, first appearing in the scientific literature 16 years ago (Heckathorn DD, 1997), there is no consensus at present on appropriate techniques for regression modeling (L. G. Johnston, Malekinejad, Kendall, Iuppa, & Rutherford, 2008; Spiller). Three general approaches have appeared in the literature: (1) making no adjustments; (2) adapting multi-level methods, and (3) using weighted regression.

In the first case, some researchers have justified their use of traditional regression modeling without corrections for the sampling strategy because recruitment procedures did not function as intended (Rispel, Metcalf, Cloete, Reddy, & Lombard, 2011), potential bias was judged to be minimal (Deiss et al., 2008), or their aim was not to make generalizable population estimates (Mizuno et al., 2012). Others give no explanation for neglecting the sampling strategy (Bobashev, Zule, Osilla, Kline, & Wechsberg, 2009; Lauby et al., 2008). This is generally considered an unacceptable approach.

Among possible corrections, some researchers have adapted multi-level methods to model within and between effects of recruitment chains, thereby capturing the dependence between participants who share a recruiter (Abramovitz et al., 2009; Volkmann et al.). Alternately, other researchers have calculated sampling weights to adjust for participants' different social network sizes (i.e., different numbers of potential recruits), and homophily

within recruitment dyads (i.e., the tendency of recruiters to recruit others similar to themselves) (Jenness et al., 2011; Johnston et al., 2010; Risser, Padgett, Wolverton, & Risser, 2009) . Both corrections reduce the bias associated with the RDS methods and permit more valid statistical inferences. When compared to multi-level methods, however, weighted regressions have produced no substantial differences in parameter estimates (Philbin et al., 2008; Pollini et al., 2008). I calculated the intra-class coefficient (ICC) for clustering by seed for the dichotomous outcome (any drinking versus none) and determined that it was non-zero but negligible (ICC=0.01). Only 1% of the variance in the log likelihood of drinking would be due to the effect of clustering within seeds, and the expected correlation among recruits of a single seed would be 0.01. As multi-level modeling techniques did not seem efficient, particularly given the modest sample size, I chose to use the RDS Analysis Tool v5.6 (RDS Incorporated, Ithaca NY) to derive sampling weights that I then entered into the bivariate and multivariate regressions. Sampling weights are an increasingly accepted approach for regression with RDS data (Carballo-Dieguez, Balan, Dolezal, & Mello, 2012; Garfein et al., 2009; Jenness, et al., 2011; Schneider, Michaels, & Bouris, 2012; Song et al., 2012; Townsend et al., 2010; Wayal et al., 2011).

**Integration of Findings**

Despite the increasing popularity of mixed-methods research, the synthesis of quantitative and qualitative findings is often neglected, and there is little guidance on appropriate strategies to integrate results (Alise & Teddlie, 2010; Bazeley, 2009; Bryman, 2007; Steckler, McLeroy, Goodman, Bird, & McCormick, 1992). Researchers often cite triangulation as a justification for adopting a mixed-methods approach; however, this metaphor has lost much of its precision in the social sciences and may risk a logical fallacy (Erzberger & Kelle, 2003). Triangulation originated in mathematics as a means of determining the position of an unknown point based on the location of two known points.

Thus, researchers who seek triangulation use two or more different data sources or research methods to generate knowledge about the object under study. However, triangulation depends on the positivist assumption of a single unknown reality that can be discovered through multiple forms of empirical data (Gibbs, 2007; Hammersley, 2008). One cannot achieve triangulation under a relativist ontology that admits multiple possible realities (such as the one used in this study). Indeed, some scholars have argued that qualitative and quantitative paradigms are fundamentally incompatible and cannot be mixed (Lincoln & Guba, 1985).

Adopting a pragmatic philosophy (Johnson, et al., 2007; Teddlie & Johnson, 2009), I sought a functional integration of the qualitative and quantitative findings that would address the overarching research question: what explains alcohol use by immigrant sexual and gender minority Latinos? Among the characteristics of pragmatism, it rejects strict dualism in favor of pluralism, seeks only provisional truths, and focuses on action and practical theory (Teddlie & Johnson, 2009). Following pragmatism, I acknowledged the different underlying epistemological assumptions of the qualitative and quantitative studies but believed I could draw on both to make meaningful inferences. I did not simply compare and contrast findings; rather, I sought supplementary findings, results that would extend empirical knowledge. Paraphrasing Erzberger and Kelle (2003), I used the mixed-methods findings like pieces of a jigsaw puzzle and believed I would arrive at a better understanding of the drinking patterns when I put the pieces together.

Although I did not seek validation per se, I drew on aspects of Campbell and Fiske's (1959) multitrait-multimethod matrix to guide my integration. I began by reviewing both studies for convergent findings and formulated abstract inferences based on them. Obtaining similar results through distinct methods provided more confidence in my conclusions. I also looked for divergent findings, incidents where results from one study were not mirrored in the other. I considered possible explanations for the lack of agreement

65

across different methods.  As divergent findings may indicate areas where further research

is needed, I also attempted to generate additional research questions.

**CHAPTER FIVE: UNDERSTANDING ALCOHOL USE AMONG IMMIGRANT SEXUAL AND GENDER MINORITY LATINOS IN NORTH CAROLINA**


**Background**

Since 1990, the Latino population of the United States has grown rapidly and is now the largest racial/ethnic minority group (Census Bureau, 2011c; Ennis, et al., 2011). While the greatest numbers of Latinos continue to be found in states with long-established communities (e.g., California, Texas, Florida, and New York), over the past 20 years migrants have increasingly chosen non-traditional settlement states. Nowhere have demographic changes been more pronounced than in the Southeast US (Dockterman & Velasco, 2010; Ennis, et al., 2011; Frey, 2006; Kochlar, et al., 2005). In North Carolina, Latinos accounted for only 1% of the state's population in 1990, but that proportion had increased to 9% by 2011, making it the state with the 11th largest Latino population (Census Bureau, 2013; Motel & Patten, 2013). Shifting migration patterns have created additional challenges, beyond those experienced by all migrants, for Latinos who have settled in non-traditional area. For example, many North Carolina communities lack experience with Latino immigrants and have under-developed infrastructures to meet their needs, such as educational programs for English language learners or bilingual staff and printed materials in public offices (Gill, 2010; North Carolina Institute of Medicine, 2003).

Sexual and gender minority Latinos—a sub-group that includes gay-identified men, men who have sex with men (MSM) who do not self-identify as gay, and gender variant or transgender persons—constitute a particularly vulnerable subgroup since they may be marginalized along multiple dimensions, including immigration status, language use, ethnic

minority status, sexual orientation, or gender identity. Compared to other populations, our knowledge about them is under developed. For example, much of the literature on alcohol use among racial/ethnic minorities has failed to assess sexual orientation. Previous research has presumed heterosexuality and may not be generalizable to sexual minority men. Similarly, the small but growing body of research on alcohol use among gay-identified men and other MSM has rarely disaggregated findings by race/ethnicity. Findings based on predominately White or Black population samples may not be representative of other groups, despite a common sexual orientation.

Sexual minority Latinos have been identified as a priority population for HIV prevention (Centers for Disease Control and Prevention, 2011; Henry J Kaiser Family Foundation, 2013; Office of National AIDS Policy, 2010). Accordingly, much of the research to date with this population has focused on sexual behaviors. When alcohol use has been included, it has often been modeled as a co-factor contributing to HIV risk (Balan, Carballo-Dieguez, Ventuneac, & Remien, 2009; Ramirez-Valles, Kuhns, Campbell, & Diaz, 2010; Smolenski, Ross, Risser, & Rosser, 2009; Zellner et al., 2009). Nevertheless, the limited current literature suggests that alcohol use warrants investigation as an outcome itself. In the *Brothers y Hermanos* study, which used Respondent-Driven Sampling (RDS) to recruit a large sample of Latino MSM from Los Angeles and New York (n=1081), 40% of respondents reported at least one binge drinking episode in past three months (Mizuno, et al., 2012). Another large sample of sexual minority Latinos recruited via RDS in San Francisco and Chicago (n=643) revealed that 23% of participants reported heavy drinking, defined as three or more drinks nearly every day or five or more drinks on at least two occasions per month (Bruce, Ramirez-Valles, & Campbell, 2008). In addition, the researchers found that alcohol consumption was positively associated with experiences of ethnic discrimination. Recruiting gay and bisexual Latinos via non-probability venue-based sampling in Miami (n=100), DeSantis and colleagues (2012) found that 18% of participants had CAGE Questionnaire

scores of 2 or higher, a threshold considered indicative of alcohol-related problems. Though

these studies indicated problematic alcohol use, the generalizability of research findings

obtained in established Latino communities, particularly those that also have visible gay

male communities, to newly emerging Latino communities cannot be assumed because of

vastly different community characteristics and social contexts (Farley, 2006).  Additionally,

the explanatory power of these findings may be limited as they have been largely

atheoretical epidemiological studies.

The purpose of this qualitative study was to develop a comprehensive understanding

of the factors shaping alcohol use by immigrant sexual and gender minority Latinos in North

Carolina. Because of its exploratory nature, no a priori hypotheses were tested; instead,

several initial research questions were developed based on the premise that some Latinos

might turn to alcohol as a coping response when faced with social stressors.  Initial research

questions included, "What are the most salient social stressors faced by the study

population?," "What strategies are used to cope with social stressors?," and "How does

alcohol use fit into the set of coping strategies?" The study's main outcome was an

inductively derived conceptual model of alcohol use, which provided a more robust

description of drinking patterns than that obtained in quantitative studies.

**Methods**

*Study Design*

This study was part of a larger mixed-methods investigation of alcohol use among

sexual minority Latinos in North Carolina.  Although the quantitative and qualitative arms

used independent samples and distinct analytic techniques, both analyses occurred

simultaneously, received equal priority, and were linked to each other at multiple points.  For

example, the quantitative study's literature review provided sensitizing concepts (Bowen,

2006), such as migration-related stressors, that were explored in the qualitative interviews.

In return, emergent qualitative findings generated a new hypothesis that was tested in the quantitative study, namely that migration as an adult would be positively associated with alcohol use. Results from the quantitative study and the synthesis of findings from both studies have been reported separately (Chapter 6 and Chapter 7, respectively).

I used Grounded Theory methods, a set of qualitative techniques designed to inductively produce theoretical explanations of social phenomena, to design this study (Corbin & Strauss, 2008).  I also drew upon a constructivist interpretation of Grounded Theory (Charmaz, 2006). Traditional Grounded Theory provides a set of methods to discover truths about social phenomena; however, concordant with a relativist ontology I did not assume that any underlying truth existed. Instead, I saw both data and their meaning as contingent and the product of interactions, such as the interviewer-respondent conversation.

To guide the interview study, I convened a five-person Advisory Committee of academics, community members, including sexual minority Latinos, and a representative of a social service organization serving Latinos.  The Advisory Committee met quarterly during data collection and analysis, providing advice on recruitment, assisting with key analytic decisions, and helping to interpret findings. Service on the Advisory Committee was voluntary; no members received any remuneration.

*Sample*

Immigrant sexual and gender minority Latinos are often considered a hidden and hard-to-reach population, particularly from the point of view of researchers who are outsiders (M. Zea, et al., 2003). No population-based sampling frame can be developed, and their potentially stigmatizing characteristics (e.g., migration status, sexual orientation) may inhibit recruitment for research studies. Therefore, I relied on referrals by the Advisory Committee members, Latino community leaders, and study participants themselves to introduce me to sexual minority Latino individuals, whom I invited to participate in the study.

Given that I am a non-Latino White male researcher, I believed such personal referrals were the best strategy to overcome differences of ethnicity, language, and socio-economic position. The referrals also had the advantage of drawing on *personalismo*, a Latino cultural characteristic that stresses the importance of personal relationships (Marsiglia & Kulis, 2009). The referrals facilitated my entrée into the Latino community and may have reassured potential participants that I was trustworthy.

All participants were age 18 or older, had been born outside the US, and self-identified as Latino. I used a behavioral definition of sexual minority status; all participants reported having had sex with another man since age 18. Self-identifying as gay was not an eligibility requirement, however, all but one participant did so. Participants received a $20 gift card to a department store or grocery store, their choice, as remuneration for each interview. There was no incentive for referring other potential participants to the study.

*Data Collection*

I conducted 15 semi-structured interviews in Spanish or English, according to the participant's preference, between May 2012 and January 2013. Eight interviews (53%) took place entirely in Spanish, five (33%) entirely in English, and two (13%) in a mix of both languages. Interviews lasted on average 55 minutes (range 34-76 minutes). Most interviews were done individually; however, two participants who were friends were interviewed together. The interview guide included general questions about stressors, the participant's migration history, social support, coping behaviors, and alcohol use. Because interviews were semi-structured, I did not adhere strictly the guide. Following Grounded Theory principles, I had the flexibility to pursue relevant data as it emerged in conversations. In addition, participants were free to decline to answer any question or to introduce new topics as they wished. When necessary, I used open-ended probes to elicit further details about a topic (e.g., "tell me more," "what does that mean to you?"). Reflecting the principle of

theoretical sampling (Corbin & Strauss, 2008), I revised the guide after each interview so that future data collection would build upon accumulated knowledge, address gaps in the data, and explore new topics.

At the conclusion of each interview, participants completed a paper version the AUDIT-C, a three-item questionnaire about current alcohol use (Bradley, et al., 2007; Frank, et al., 2008). The AUDIT-C is not a diagnostic instrument. It was designed as a brief screener and permitted a three-level categorization of current drinking: (1) abstainer, or no alcohol consumption; (2) negative, or no hazardous drinking; or (3) positive, or potentially hazardous drinking. Because some participants age 18 to 20 might report drinking alcohol, an illegal behavior at their age, or the interviews might elicit information about migration status, a potentially sensitive topic, I obtained a Certificate of Confidentiality from the National Institutes of Health to safeguard participant data.

Between October 2012 and January 2013, I completed individual member-check interviews with four participants, to whom I presented emergent findings and preliminary interpretations for feedback and elaboration. As before, participants received a $20 gift card to a department store or grocery store, their choice, as remuneration for a second interview. Based on a participant's suggestion, I modified the study's protocol to conduct three key informant interviews during January and February 2013 with representatives of faith-based and community-based organizations serving the study population. These interviews provided complementary data to contextualize emergent findings and confirm interpretations. Key informants received a $20 gift card to a department store or grocery store, their choice, as remuneration for the interview.

Interviews took place in private offices of the University of North Carolina (both on-campus and off-campus locations), at community-based organizations serving Latinos, or in the participants' own homes according to each participant's preference. One participant declined to allow audio recording of the interview. All other interviews were digitally recorded

then transcribed verbatim (i.e., word for word, exactly as spoken) by a bilingual, bicultural professional transcriptionist.  The transcripts included notations of audible non-verbal sounds (e.g., laughter) and background noises (e.g., barking dogs).  Upon receipt of each transcript, I reviewed it for accuracy against the recording, making corrections as necessary. I assigned all participants a pseudonym and removed all potentially identifying details from transcripts. For interviews done in Spanish, the transcriptionist also provided an English translation, which I reviewed against the original Spanish transcript, making corrections as necessary. Consistent with a constructivist approach that focuses on how meaning is made (Charmaz, 2006), I met quarterly with the transcriptionist to discuss our respective roles in creating the data and its meaning (i.e., transforming spoken language into written documents).  Such meetings also provided an opportunity for feedback from the transcriptionist on my conduct of the interviews.

All participants provided informed consent. The University of North Carolina Public Health-Nursing IRB approved all study procedures and materials.


*Analysis*

I began the analysis with line-by-line open coding, which served to decontextualize the data and identify actions and processes (Holton, 2007).  The quantitative arm of the mixed methods study provided several sensitizing concepts, such as experiences of discrimination and use of social support, which I used as points of departure for the qualitative analysis (Bowen, 2006). I applied structural codes, such as drinking behavior or social stressors, in a second round of coding to categorize text segments that corresponded to interview topics.  Structural codes are a common data reduction technique and served as preliminary conceptual categories (Namey, et al., 2007; Saldaña, 2013). I also employed process codes to examine the mechanics of each interview, such as when I asked a closed-

ended question or when participants switched languages (Saldaña, 2013). Process codes helped me evaluate the quality of the interview and identify poorly worded questions.

Data collection and initial analysis occurred simultaneously, a hallmark of Grounded Theory methods. After completing initial coding of all transcripts, I developed a reduced set of focused codes, grouping them into families that represented emergent concepts. Following the principle of constant comparison, in which data are continually examined within and across participants to build conceptual categories, I re-analyzed the transcripts using the reduced set of focused codes and identified key concepts. After coding the fifteenth interview, I determined that I had achieved theoretical saturation of the drinking category, the behavior of interest (Corbin & Strauss, 2008). In other words, all relevant dimensions of alcohol use had been identified and further data collection was not necessary. This claim of saturation was reviewed and supported by the Advisory Committee. All coding was an iterative process; I revised and reapplied the codes several times.

In addition, I wrote narrative summaries, recreating participants' stories in order to look for patterns across individuals, to provide a more holistic understanding of their stories, and to complement the coding exercises (Gibbs, 2007). Once conceptual categories had been elaborated through focused coding, I used matrix displays to identify relationships and spur development of a conceptual model (Miles & Huberman, 1994). Key matrices included participants by stressors, participants by coping strategies, and stressors by coping strategies. Throughout the analysis, I wrote analytic memos to document decisions, capture insights, and identify new ideas. These were supplemented by a personal response journal, in which I wrote reflexively on my position relative to the study population and documented emotional responses to the study (Rodgers & Cowles, 1993). Such personal documentation maximized self-awareness of my role in the research process and was consistent with a constructivist orientation. I used ATLAS.ti v7 to perform the coding and maintain analytic

memos and Microsoft Word to compose the narrative summaries, analytic matrices, and the personal response journal.

**Results**

The study findings are presented in several sections. First, I describe select characteristics of the sample. Next, I explain the stressors and coping strategies that were identified in the analysis. Finally, I summarize participants' drinking behaviors and present a conceptual model of their alcohol use. To protect their privacy, I use pseudonyms when referring to or quoting participants.

*Sample Characteristics*

Participant characteristics are shown in Table 5.1. The average age of the sample was 30 years (range 18-42 years) and average time in the US was 12 years (range 0.5-27 years). Most participants were originally from Mexico and approximately half the sample (47%) had migrated to the US as a child or adolescent. Participants explained that migration before age 18 was often for family reunification (e.g., to join a parent who was already working in the US). Consistent with the literature on Latino migration to North Carolina (Griffith, 2005; Parrado & Kandel, 2008), migration as an adult was largely motivated by economic reasons, such as better job prospects. Occasionally participants had migrated to the US because of security concerns or violence in the country of origin.

Table 5.1 Qualitative Study Participant Characteristics

| Pseudonym | Age | Years in US | Migration as adult | Country of origin | AUDIT-C Score | Drinking classification | Language of interview |
|---|---|---|---|---|---|---|---|
| Benito | 27 | 8 | Yes | Mexico | 6 | Positive | English |
| Vicente | 20 | 7 | No | Mexico | 0 | Abstainer | Spanish |
| Nestor | 28 | 15 | No | Mexico | 4 | Positive | English |
| Gerardo | 35 | 7 | Yes | Mexico | 6 | Positive | Spanish |
| Fernando | 29 | 9 | Yes | Mexico | 0 | Abstainer | Spanish |
| Alfonso | 40 | ½ | Yes | El Salvador | 6 | Positive | Spanish |
| Rafael | 18 | 4 | No | Mexico | 3 | Negative | Spanish |
| Manny | 31 | 4 | Yes | Puerto Rico | 5 | Positive | English |
| David | 32 | 10 | Yes | Mexico | 0 | Abstainer | Spanish |
| Martín | 36 | 27 | No | Mexico | 3 | Negative | English/ Spanish |
| Luis | 35 | 12 | Yes | Mexico | 2 | Negative | Spanish/ English |
| Carlos | 26 | 20 | No | Mexico | 3 | Negative | English |
| Mateo | 20 | 13 | No | Mexico | 8 | Positive | English |
| Julio | 42 | 11 | Yes | Mexico | 3 | Negative | Spanish |
| Gabriel | 28 | 25 | No | Mexico | 6 | Positive | Spanish |

Note: AUDIT-C scores ≥4 may be indiciative of hazardous drinking.

*Social Stressors*

As the mixed-methods study's central hypothesis posited that some immigrant sexual and gender minority Latinos would turn to alcohol in response to social stressors, a preliminary step was to identify the most salient stressors and their characteristics (Table 5.2). All participants described stress due to being an immigrant, being a sexual minority, and the challenges of daily living; sub-sets of participants experienced two additional stressors due to being undocumented immigrants or not being Mexican.

Table 5.2 Stressors Faced by Immigrant sexual and gender minority Latinos in North Carolina

Being an immigrant:
- Leaving family in country of origin
- Missing foods and customs of country of origin (e.g., being homesick)
- Learning and using English
- Being an ethnic minority in the US
- Feeling caught between two countries/cultures

Being a sexual minority:
- Coming out to family
- Experiencing sexual orientation discrimination

Challenges of daily living:
- Working physically demanding jobs
- Paying bills and saving money
- Enduring the boredom of limited routines
- Worrying about health

Being undocumented:
- Fearing deportation
- Not having a social security number
- Facing exploitation on the job
- Not having a driver's license

Not being Mexican:
- Being a minority within the Latino minority
- Making efforts to retain national identity
- Being mistaken for Mexican by Anglo-Americans

*Being an Immigrant*

Migration to the US was one of the key turning points in participants' lives. Although they often described it as an acute stressor, i.e., a period of emotional (and occasionally physical) strain, it became clear during interviews that for many participants it exerted an ongoing strain and permeated their lives.  As might be expected, participants talked about the difficulty of being far from family and friends in their country of origin.  Many felt homesick, missing the foods and customs of home. A few explicitly stated their dislike of certain aspects of US culture, such as American food. Many contrasted the work culture in their countries of origin with that in the US; they perceived an over-emphasis on work in the US that left little time for relaxation.  Nearly all participants felt they were outsiders to the dominant Anglo-American society, and a frequent barrier to integration was the difficulty learning and using English.

Several participants insightfully noted that their ethnic minority status as Latino was a product of migration to the US. In other words, Latino was an identity that only had meaning once they had crossed the US border. Initially, few participants identified ethnic discrimination as a problem. None reported being the victim of violence due to being Latino, and many denied experiencing discrimination at all. When I probed, however, participants gave accounts of frequent, subtle mistreatment, such as being treated rudely in restaurants and stores, being perceived as less intelligent than others, and hearing disparaging remarks in English by people who presumed that they would not understand. Participants were reluctant to identify these experiences as discrimination, but they were aware of being treated differently due to their Latino ethnicity. As Vicente (age 20, from Mexico) said, "When people see that we are Latino, they think that we are less than them."

Migration to the US presented an unexpected challenge to some participants who had been in the US for an extended period. Several long-term residents felt they had reached a "point of no return." They could no longer go back to their country of origin because they had lost contact with key friends and acquaintances. As Martín (age 36, from Mexico) explained, finding a good job, particularly when one was older, depended on such contacts:

> I honestly wouldn't know where to start because in Mexico being 30 or 35 years [old], it's difficult to get a job. It's very difficult. Especially where I come from, which is rural. I don't think I could survive in Mexico. Only by an act of God!"

Ironically for long-term residents, the economic advantages of migration to the US were offset by unanticipated constraints on their future options. It appeared to me that remaining in the US might produce greater migration-related stress because over time it precluded the possibility of returning home.

*Being a Sexual Minority*

All participants except one self-identified as gay, and sexual identity was responsible for considerable stress at two levels—in the family and in community contexts.  Like migration to the US, coming out to family members was a key turning point in participants' lives. There was widespread anxiety about rejection, particularly by parents. Rafael (age 20, from Mexico) described the general sentiment and the risks entailed in coming out, saying:

> When there is a gay person in a Latino family, it's like a sin. Many times Latino families do not accept gay people. Often, the gay guys suffer from domestic violence, they are kicked out of their homes, they are beaten up. It's hard....very, very hard.

In one extreme case, a participant admitted to being beaten by his father and chased from the family home when his sexuality was discovered.  The negative attitudes toward sexual minorities, both in families and in the community, were often attributed to *machismo* (traditional hyper-masculine behavior and attitudes of dominance and control by males) and the conservative influence of religion. Nestor (age 28, from Mexico) had just begun coming out to his family at the time of the interview and illustrated the influence of religion:

> My family is very conservative, traditional Mexican, very influenced by Catholicism… Whenever a conversation about homosexuality comes up in my family, it's always derogatory, pretty much saying that all gays are going to go to hell.

All but one participant self-identified as gay, and most had already successfully negotiated their disclosure to family. They had found acceptance with the passage of time. For them, coming out was a past stressor. In contrast, all gay-identified participants described ongoing stress due to their sexuality in relation to the local Latino community. Vicente (age 20, from Mexico) explained simply that "Latinos right now are not very open to the topic of homosexuality." Given their perception of a homophobic climate, many were selective about when, where, and to whom they disclosed their sexuality, leading several participants to declare that sexual minority Latinos in North Carolina were overwhelmingly closeted. As a consequence, it reinforced a sense of isolation.  Although venues existed where they could meet other sexual and gender minority Latinos, such as one community-based Latino

organization and several gay bars and dance clubs catering to Latinos, many participants said they did not believe that any Latino gay community existed.

*Challenges of Daily Living*

An additional stressor shared by all participants, which was distinct from being an immigrant or being a sexual minority, concerned the challenges of daily living. Many participants worked long hours in physically demanding jobs, such as washing dishes or working on a farm. They experienced frequent muscle aches, fatigue, and exhaustion, which limited their ability to relax and engage in social activities. Alfonso (age 40, from El Salvador) explained the effect:

> One thing that stresses me out is being on my feet for 12 hours because I work as a dishwasher. I get muscle pain in my back. At night, my hand goes numb and my feet cramp up. Sometimes I wish I could go out on the weekends to have a good time, but the last thing I want to do is to go out...I want to sleep more.

Despite working hard, nearly all participants expressed concerns about paying bills and saving money.  It was particularly frustrating when they were unable to help their families in the country of origin by sending remittances.  Some participants recognized that they were stuck in low paying jobs and felt little hope of improving their situation.

Finally, a minority of participants talked about health concerns, particularly diagnoses of diabetes or hypertension among those who had received such a diagnosis. Among other health issues, sexual health was rarely discussed.  Only one participant expressed concern that he had encountered few Latino sex partners who consistently used condoms.

*Being Undocumented*

Although the interview guide did not include any question about migration status, a sub-set of participants brought it up as an important stressor.[2] In fact, many undocumented participants voluntarily disclosed their status early in the interview and seemed to find relief in talking about the difficulties they faced related to it. Above all, they described a pervasive fear of deportation. Rafael (age 18, from Mexico) emphatically stated:

> Being an [undocumented] immigrant is horrendous because you are always scared that the police are going to send you [back] to your country or that they are going to arrest you…I'm not embarrassed to be Latino, but I would like to be legal in this country.

In addition to a general sense of insecurity, being undocumented limited their activities. Participants talked about the difficulty of finding a job when they did not have a social security number and being forced to work under the table. Undocumented participants recognized that they were often exploited in the workplace because of their migration status, being paid less than other employees or not being compensated for overtime work. At the time of the study, undocumented Latinos were not able to obtain a North Carolina driver's license. Some undocumented participants had to rely on others for rides. Those undocumented who chose to drive without a license took great care to avoid attracting unwanted attention, often restricting their movements to jobs and back home again. As Carlos (age 26, from Mexico) explained, it also affected family relationships:

> What's stressing me out is the license. I am not worried about getting to work because it's not that far, but visiting my parents [who live about an hour away]. I have friends that have licenses, and every now and then we go and see my parents.

Thus, lack of a valid driver's license contributed to social isolation. In addition, it operated as a stressor in other ways. Some participants found that store clerks and local bureaucrats

---

[2] As a sensitive topic, I anticipated that migration status might be an impediment to recruitment or inhibit disclosure during interviews. Thus, I purposively excluded it from the interview guide. In the eligibility screening, I explained to potential participants that I would not ask about their migration status but that they were free to discuss it if they chose.

refused to accept alternate forms of identification, such as the *matrícula consular* (an identity card issued to Mexican citizens living outside Mexico) or a foreign passport.

*Not Being Mexican*

The majority of Latinos in North Carolina are of Mexican origin (Census Bureau, 2013). For a sub-set of study participants, not being from Mexico added to their sense of marginalization; they felt like a minority within a minority. Although several Mexican origin participants claimed that a shared language was the unifying characteristic of Latinos, variations in Spanish, such as the difference between a Mexico City accent and a regional accent, often marked social divisions. This linguistic division was especially apparent for non-Mexican participants. Manny (age 31, from Puerto Rico) expressed frustration and felt objectified when he was singled out because of his accent: "I don't hate them, but I just don't want to feel like…For once, don't look at me like the big Puerto Rican and just look at me as Manny." Recognizing the composition of the local Latino community, Alfonso (age 40, from El Salvador) described making efforts not to lose his national identity:

> I try to maintain my own Salvadoran accent...I try to not speak strangely, like in a Mexican accent. I want to maintain myself the way I am, from El Salvador, and not lose my Salvadoran identity.

In addition, it was particularly frustrating for non-Mexican participants that few Americans recognized the diversity of the Latino community and presumed that all Latinos were of Mexican origin.

*Coping Strategies*

Concordant with identifying stressors, I sought to describe the coping responses

used by participants, with particular attention to the role of alcohol use (Table 5.3). There

was considerable variation in coping responses within and across participants, and no

person employed a single coping strategy.

Table 5.3 Coping Strategies Adopted by Immigrant sexual and gender minority Latinos in North
Carolina

Passive coping:
- Not reacting to insults or mistreatment
- Staying focused on survival/long-term goals

Changing the conditions:
- Living and socializing in Latino enclaves
- Moving away from family
- Passing as straight

Seeking support:
- Socializing with friends
- Maintaining contact with family in country of origin
- Turning to spirituality/God

Seeking distractions from stressor:
- Seeking solace in nature
- Maintaining isolation at home
- Losing oneself in work
- Pursuing hobbies
- Exercising
- Drinking alcohol

*Passive Coping*

As the name suggests, passive coping involved no visible reaction to a stressor. It

was most commonly adopted in response to ethnic or sexual orientation discrimination.

Participants strove to avoid reacting when faced with name-calling or insults by co-workers

Above all, they did not want to be drawn into conflicts or physical fights.  Vicente (age 20,

from Mexico) typified the attitude when he said, "I am not the type of person that likes

problems. I prefer to cover my ears and keep on going." It appeared that many participants

began using passive coping in adolescence, often in response to anti-gay bullying in school.

Another key feature of passive coping was a focus on long-term goals. Participants were able to overlook insults or mistreatment when they kept their attention on higher goals. They often described their attitudes using the phrases *seguir caminando* (to keep going on) or *salir adelante* (to move forward or get ahead). Probing to understand better, I discovered a concurrent sense of fatalism. Participants often felt that nothing could change the current situation. Discrimination was inevitable, and it was better to accept it and focus on the future, which held the promise of different and better conditions.

*Changing the Conditions*

A minority of participants took active approaches and sought to change the conditions associated with a stressor. This took a number of forms. To avoid ethnic discrimination or to reduce the need to use English, some chose to limit their interactions with American society. They preferred to live, work, shop, and socialize among fellow Latinos. This coping strategy was reported to be most easily accomplished in cities, such as Greensboro or Durham, but less easily executed in small towns and rural areas. When a participant's sexuality was responsible for the stress, particularly in the family, some participants chose to move away. Nestor (age 28, from Mexico) relocated to North Carolina from another US state in order to live openly as a gay man:

> If I had stayed in the city where my mom lived or very close proximity to her house, I probably wouldn't have become more accepting of myself…It has a lot to do with the distance because...I mean...I could never be out to them.

Interestingly, sexuality did not motivate transnational migration. No participant reported moving to the US in order to come out or live openly. All moves away from family occurred in late adolescence or early adulthood, either in the country of origin or after having migrated as a child. Despite seeking physical separation, all participants who had moved away strove to maintain emotional ties to family members through frequent phone calls, emails, and social media.

Some participants were able to deflect sexual orientation discrimination in the Latino community by being perceived as straight. Gerardo (age 35, from Mexico) had few problems: "[Sexual orientation discrimination] is rare. Let's say only two percent of the time. Maybe it's because of my appearance and that I look more manly." Similarly, Alfonso (age 40, from El Salvador) said, "I never felt discriminated against. But the thing is that my friends say I act too manly and that I do not seem gay." It was unclear, however, whether Gerardo and Alfonso were intentionally acting more masculine. Rather than an active choice, they might have simply benefited from others' perceptions of them. Passing unnoticed might not be an option for all Latinos, especially as transgender or gender variant persons.

*Seeking Distractions*

A more frequently used active coping strategy was to seek distraction from a stressor. Participants found solace in nature; they reported that walking in parks and green spaces was calming. Some sought peace at home by withdrawing and avoiding contact with the sources of stress outside the home. Still others diverted their attention to other activities, including work, hobbies, or exercise. Some participants employed several strategies concurrently to distract themselves from stressors.

Participants discussed drinking as a way to distract oneself from stressors, but support for it as a coping strategy was largely indirect. Nearly all participants affirmed that some Latinos might turn to drinking when faced with stressors; however, few identified it as one of their personal coping strategies. Drinking as a coping response was largely seen as a response typical of older men. Many participants recounted stories of male relatives, including fathers, uncles, and grandfathers, who drank to excess. Manny (age 31, from Puerto Rico) provided a typical anecdote, "My dad has a little bit of an alcohol problem…He drinks a lot. He is not an aggressive drinker, but he is out of it a lot. I think that is his primary way of coping with stress." Fernando (age 29, from Mexico) was a recovering alcoholic and

the only participant to admit to drinking in response to stressors:

> Yes. I drank because I felt lonely, I missed my family...when I lived with Alexandra [American ex-girlfriend] I didn't hang out much with Latinos. I had more American friends than Latino friends. I felt very lonely...It was harder for me with that culture...her culture. I didn't want to speak English. I still don't know why, but someday I have to figure that out. But that's what led me to drinking, feeling alone.

Fernando's explanation of his drinking focused on isolation and cultural differences, but not sexuality. As he was the only participant not to self-identify as gay, it remained unknown whether his alcohol use was also in response to strain over his sexual orientation. Curiously, while the majority of participants did not identify drinking as a personal coping strategy, many mentioned its benefits, particularly its disinhibitory effects in social situations.

*Seeking Support*

Another coping strategy that participants reported using frequently was seeking social support. In some instances, seeking support overlapped with seeking distractions, as exchanges of support occurred while socializing with peers at house parties and in gay bars or dance clubs. All participants sought to maintain close emotional contact with family members, even when they had not come out or when their disclosure experience had been negative. Among family members, mothers were the most important sources of support. They played a key role in the family, often setting an example for others. As Martín (age 36, from Mexico) explained, "Coming out of the closet, many people start with their mom because they know the support they'll find. The unconditional love is from mom." In addition, many participants also reported having a favorite sister with whom they enjoyed an especially close and supportive relationship. After being thrown out of the family home, David (age 32, from Mexico) found crucial support from an older sister: "My sister, the one that lived in Texas, said I love you a lot. If you need something or you're not feeling well or you're sick, you come to my house. In other words, you are not alone." No participant turned to a brother for support, and fathers rarely served in supportive roles.

In addition to friends and family, religion was a key source of support. Although it was widely seen as the underlying source of anti-gay sentiment in families and in the Latino community, many participants continued to turn to religion for support. However, they made a distinction between organized religion and personal spirituality. Nearly all participants had been raised in the Catholic church and subsequently left it because of its condemnation of sexual minorities. Nevertheless, most continued to invoke God, but in a more personal and direct way. They reported asking God for favors, thanking God when things went well, and relying on God to take care of things. Spirituality was a key aspect of Fernando's recovery from alcoholism, perhaps reflecting the emphasis on a higher power and a spiritual awakening in Alcoholics Anonymous. A small number of participants still participated in organized religion or saw it as a resource. Gerardo (age 35, from Mexico) explained the ongoing role of religion as a source of support:

> Well I don't go to the Catholic church much. That is the religion I was raised with. But I could talk to someone or [go to] a confession or to the priest to talk, to give me advice or something.

In discussions of religion and support, Alfonso was the sole participant who expressed a desire to join a church. He was motivated by the community it could provide but frustrated because he worked weekends and was unable to attend one. He was aware that his sexuality would likely be a problem, but he felt confident that he would be able to handle any negative reactions. For him, the benefits of a church community would outweigh the cost of hiding his sexuality.

*Alcohol Use*

The aim of this study was to develop a comprehensive understanding of the factors shaping alcohol use, with particular attention to social stressors and coping responses. Interviews elicited rich details about participants' drinking, which was one of several possible strategies available to distract one's self from stressors. Although it was an individual behavior with much variation, I found several patterns.

First, participants nearly always drank in the company of other people, particularly with boyfriends and other gay friends. Few participants drank alone, although having a drink alone at home was an acceptable way to relax at the end of a difficult day. Fernando (age 29, from Mexico) was a recovering alcoholic and the sole participant to express a preference for drinking alone:

> Many times I liked drinking by myself because in groups or parties I would get out of control. I didn't know what was going on with me but I didn't want to be violent, I didn't want to fight with anyone.

Thus, drinking alone may have been Fernando's strategy to avoid further alcohol-related problems.

Second, participants consumed a variety of alcoholic beverages but beer was the most frequent choice in nearly all drinking occasions. Even those who wanted to reduce their alcohol consumption chose non-alcoholic versions of beer, such as O'Douls. Some participants enjoyed mixed drinks at bars and dance clubs, but liquors were generally reserved for special occasions. Among Mexicans, tequila was served at celebrations or in intimate settings at home, and *rompope* (Mexican eggnog) was a favorite drink at Christmas.

Third, alcohol was an integral component of many social interactions. Participants frequently stated that among Latinos drinking was an essential part of holidays, celebrations, and parties. Rafael (age 18, from Mexico) said simply, "at every party, if there are no drinks, there's no party." I presented this phrase ("*si no hay bebidas, no hay fiesta*") to subsequent participants and key informants as a discussion trigger, and it was universally

endorsed. According to Martín (36 years old, from Mexico), "Well, I've never gone to a party that had non-alcoholic drinks." A number of participants elaborated on the essential components of celebrations.  In addition to drinking, dancing was necessary. Manny (age 31, from Puerto Rico) described it succinctly: "We drink a lot at parties and we dance a lot. Those are two things that we do." According to participants, without both dancing and drinking a celebration was incomplete. A few participants clarified that drinking was not obligatory.  A person could decline alcoholic drinks if they chose; however, it appeared that doing so made socializing difficult.  David and Fernando, who had given up drinking, and Gerardo and Luis, who had reduced their consumption but still drank, tended to avoid celebrations because their refusal to drink might not be received well.  Hosts would insist that they take a drink, and if they refused it might be misunderstood as unsocial or discourteous behavior.  Thus, limiting their alcohol consumption also reduced their socializing, thereby diminishing one possible source of social support.

In addition to narrative descriptions of their drinking, participants also provided quantitative assessments via the AUDIT-C questionnaire at the conclusion of each interview. Overall, participants were infrequent drinkers.  Among the 12 current drinkers, three-quarters reported one to four drinking occasions per month, and only two participants indicated frequent drinking, i.e., two or more times per week. On drinking occasions, however, participants appeared to drink heavily. Two-thirds of current drinkers exceeded the recommended daily limit of no more than two drinks per day, and nearly half reported at least one binge drinking episode each month.

*Conceptual Model*

As a Grounded Theory study, the main outcome was a conceptual model to explain alcohol use.  Although I had assumed a link between social stressors and drinking as a coping behavior, interviews revealed limited support for such a relationship. As noted

previously, all participants agreed that some immigrant Latinos might turn to alcohol in response to stressors, but most offered indirect evidence, such as examples of family members' or friends' drinking. Alfonso (age 40, from El Salvador) typified the responses:

> Well, I know that my brother in Los Angeles does that. For example, when he has a day off he goes and gets a six pack and drinks it because he is by himself, abandoned...in other words to avoid stress. But really, for me, no. That is not how I face loneliness or stress. I don't deal with it by drinking.

Over the course of the analysis, however, multiple contexts emerged within which drinking was embedded. Drawing on social-ecological models (Bronfenbrenner, 1977; McLeroy, Bibeau, Steckler, & Glanz, 1988), I organized them as three nested levels of influence on alcohol use: cultural, social, and individual contexts (Figure 5.1). Drinking as a social behavior became the core concept. It reflected the two main findings about alcohol use—that drinking predominantly took place in the company of other people and that alcohol was a key component of social events—and provided an explanatory mechanism for the greatest number of variables across levels of the conceptual model.
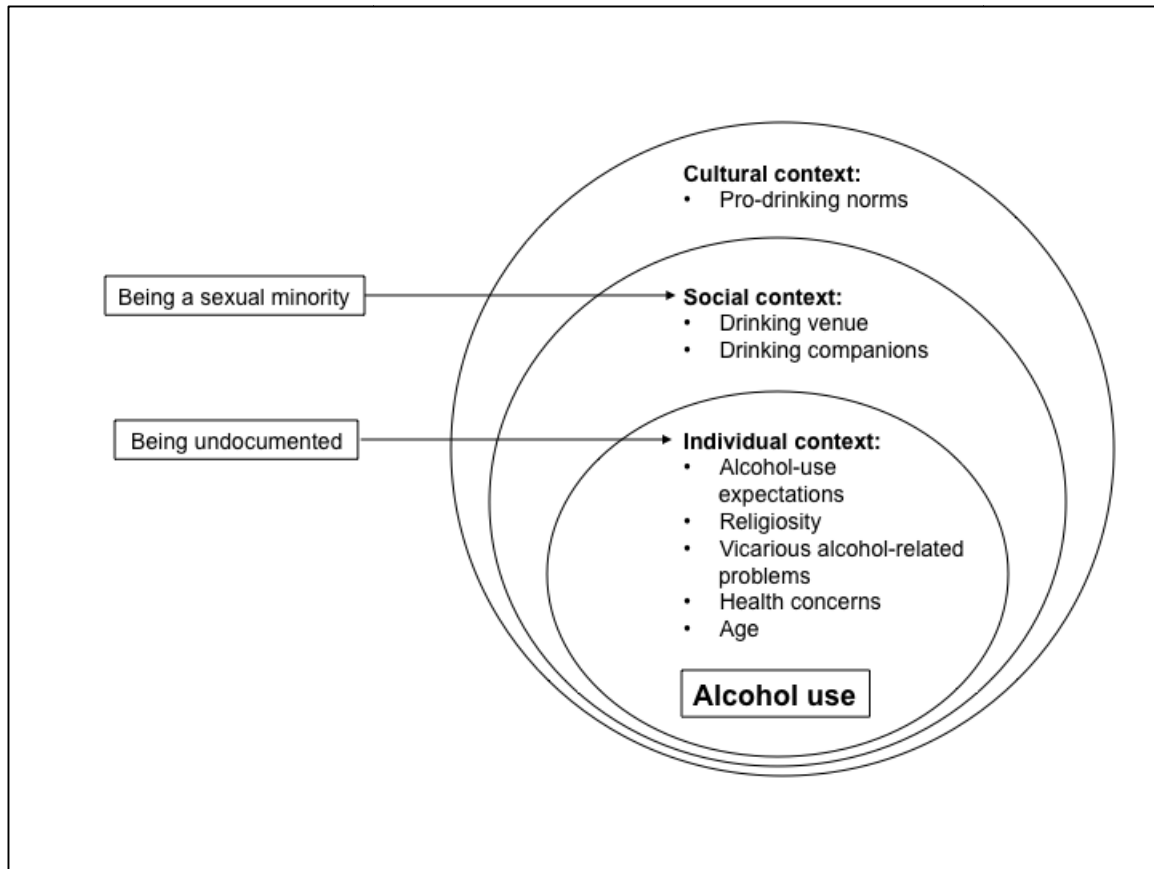
Figure 5.1 Conceptual Model of Alcohol Use among Immigrant Sexual and Gender Minority Latinos in North Carolina

At the highest level of ecological influence were Latino cultural norms that promoted drinking among men.  Participants described widespread alcohol use in their countries of origin, which was often linked to traditional masculine behavior. As Nestor (age 28, from Mexico) explained:

> Drinking is very common in Mexico. I mean, men drink. What do you do at the end of a weekend? You go to a bar and drink.  Barbecue? You drink. What do you do when you are trying to enjoy a soccer game? You drink. So, it's very instilled in the culture that drinking is okay.

The pro-drinking norms were encountered early in life.  A number of participants described how alcohol had been easily available in their youth, particularly in the family home where some reported drinking as early as 12 years old.  Gerardo (age 35, from Mexico) explained his family's attitude: "In my home, you were never yelled at if you were young and drinking a

beer or smoking a cigarette as long as you did not do it all the time, every day." While pro-drinking norms were widespread, they were not universally permissive.  Drinking as a child or adolescent was restricted to certain locations, such as the family home, and certain events, such as Christmas or national holidays.

Within the social context, place shaped alcohol use. Participants differentiated their drinking behavior at bars and nightclubs, which focused on partying, from other social venues.  For example, dinners at home and dates in restaurants often included alcohol, but participants reported drinking less on those occasions. In addition, drinking companions, the people with whom one drank, had an influence.  Many participants were less likely to drink heavily when in the company of heterosexuals. Martín (age 36, from Mexico) explained the distinction:

> There is always going to be alcohol, especially if it is a party just for gay men. Alcohol is going to be there. But at a straight party, where a few gay men are invited, they know that if they start drinking, they are going to start acting more and more feminine or they are just going to let loose. They are very cautious about that. They prefer to let loose with their group of friends.

In response to perceived homophobia in the Latino community, many participants were selective in disclosing their sexual orientation.  Recognizing the disinhibitory effect of alcohol, they were afraid of inadvertently outing themselves.  In contrast, among gay friends they felt free to indulge.

At the individual level, individuals' expectations of alcohol-use were an important determinant. The anticipated relaxation provided by alcohol was a strong motivator of drinking, particularly as it facilitated social interactions.  As Mateo (age 20, from Mexico) said, "I think that's a way to have more of a good time. If you drink, it loosens you up. You dance more, you talk more with other people, and all that stuff."

For a minority of participants, religiosity had an inverse relationship with drinking. Participants who had grown up with strong religious feelings, or whose families were very religious, often saw drinking as sinful and delayed their first drink—sometimes until

adulthood.  Manny (age 31, from Puerto Rico) exemplified this, "My religion plays a role in how I relate to alcohol. I've had beer in my fridge for a month and that's like a sin. It's just a sin for me to have alcohol at home." Some participants clarified, however, that such an effect was primarily true for Protestant Christian denominations; they felt that Catholicism neither encouraged nor discouraged alcohol use.

Two aspects of age affected drinking but in distinct ways.  Chronological age appeared to have an inverse relationship with alcohol use.  Participants described being less inclined to drink heavily as they grew older, primarily because they were less likely to go to bars and dance clubs.  The five participants age 35 and older reported feeling increasingly uncomfortable and out of place in such venues as they perceived them as overwhelmingly youth-oriented. However, older age at migration appeared to interrupt the age-related trend of declining drinking. Participants who came to the US as adults (age ≥18) appeared more likely to drink heavily. Among participants who had migrated as an adult, half had positive AUDIT-C screens, whereas 43% of those who migrated as children or adolescents had positive AUDIT-C screens. In addition, a number of participants who had arrived in the US as children or teenagers contrasted their drinking and that of their peers against *los señores*, men of their father's generation or older.  The older men were believed to drink more heavily, and some participants suggested it was because older men had more difficulty adapting to life in the US.

Perhaps related to generational differences in drinking, many participants described how older relatives' alcohol use had led to greater awareness of they own drinking. They had witnessed alcohol-related problems among fathers, uncles, and grandfathers, which ranged from getting sick and passing out to losing a job or becoming estranged from family. They concluded that they needed to limit their own alcohol intake to avoid similar problems, a process that reflected vicarious learning, a central process of Social Cognitive Theory (Baranowski, Perry, & Parcel, 2002).  It remained unclear, however, if any participants

actually changed their behavior based on male relatives' alcohol-related problems or if it simply heighted awareness of potential problems.

Finally, I discovered two ways that social stressors influenced drinking apart from coping. First, being a sexual minority was a nearly universal source of stress due to homophobia and intolerance within the local Latino community. To combat isolation and to obtain social support, many participants socialized in gay bars and dance clubs. These venues served as a physical nexus, a safe social place that connected members of an otherwise dispersed and hidden population. For some, it might be the only safe space. Such venues also promoted drinking as a normative behavior. Thus, sexual minority status was indirectly related to alcohol use through attendance at gay bars and nightclubs.

Second, among undocumented immigrants there was pervasive fear of deportation, and many conscientiously strove to minimize any such risk. This extended to alcohol use, in particular drinking and driving, as it might lead to police involvement and possible deportation.[3] Undocumented participants described restricting their movements, such as limiting driving to work and home again. Those who continued to drive, which was often necessary because of insufficient public transit, often avoided drinking, drank less, or restricted their drinking to home. Luis (35 years old, from Mexico) had previously received a citation for driving while intoxicated and described a recent experience:

> Last week, I went with some friends to the disco and I had one beer. They told me to
> drink more and I said that I was fine…Only one beer, and I didn't even have to drive

---

[3] Known colloquially as the 287(g) program, the *Immigration and Nationality Act* permits local law enforcement agencies to serve as immigration officers when the agency enters into an agreement with US Immigration and Customs Enforcement. Originally intended to address violent crimes, drug offences, and human trafficking, the program has been widely perceived as a method to harass and remove undesirable Latino immigrants (American Civil Liberties Union of North Carolina Legal Foundation & Immigration and Human Rights Policy Clinic, 2009; Lacayo, 2010). During the study period, eight North Carolina counties participated in the 287(g) program and the US Justice Department filed suit against one county due to allegations of discriminatory racial profiling (Blythe, 2012).

that night, but one beer…More than anything, I am aware of the mistakes I made, and especially with the situation that I am in, I have to be very careful that I don't break the law.

Thus, migration status sometimes served to discourage drinking. It remains unclear, however, if the absence of police involvement (i.e., when deportation remained only an abstract threat) affected behavior as much as actual police involvement, and whether fear of police involvement extended to legal residents as well.

**Discussion**

In this qualitative study, I sought to develop a comprehensive understanding of the factors shaping alcohol use by immigrant sexual and gender minority Latinos in North Carolina. Based on the premise that some Latinos might turn to alcohol in response to social stressors, I began by elaborating the range of stressors faced by the study population and the repertoire of coping strategies used by them. Following Grounded Theory methods, I then developed a conceptual model to explain alcohol use, the behavioral outcome of interest.  To my knowledge, this represents the first attempt to develop an explanatory model of drinking among sexual minority Latinos. As there has been limited research to date on substance use outcomes among sexual minority Latinos, especially in non-traditional migration destinations, the study's findings address an important gap in the public health literature.

As noted above, I began the study with the premise that some sexual minority Latinos would turn to alcohol in response to stressors.  This phenomenon, sometimes labelled stress-reactive drinking, was first proposed in the 1950s and has remained a persistently popular explanation of drinking behavior (Cappell & Herman, 1972; Conger, 1956; Greeley & Oei, 1999; Pohorecky, 1991). Although cross-sectional study designs precluded causal inferences, recent research among sexual minority Latinos in traditional migration destinations has been consistent with stress-reactive drinking.  For example, a

95

study of Latino MSM in Chicago and San Francisco found that experiences of ethnic discrimination were positively associated with quantity and frequency of alcohol consumption (Bruce, Ramirez-Valles, & Campell, 2008). Another investigation of Latino MSM in Los Angeles and New York found higher odds of binge drinking among men who experienced both racism and homophobia (Mizuno, et al., 2012). In addition, contemporaneous qualitative research among heterosexual Latino men in North Carolina produced a conceptual model in which alcohol use was a potential coping reaction to migration-related strain (Rhodes et al., 2009a).

Although participants included drinking among possible coping strategies, there was limited support for its relationship with stressors. Most participants agreed with the assertion that drinking may be a coping behavior but denied doing so themselves. Instead, they offered indirect evidence, such as anecdotes about male friends' and relatives' drinking that they perceived to be in response to stressors. It was striking that the sole participant who characterized his drinking as a coping reaction was a recovering alcoholic. His insight may have been driven by participation in Alcoholics Anonymous (AA). In other words, he might have been socialized to see his problem drinking as an inappropriate response to stressors; however, neither the Twelve Steps nor the Twelve Traditions of AA explicitly discusses any motivations for drinking (Alcoholics Anonymous World Services Inc., 2009). Alternately, he might simply have been more reflective about his drinking than other participants.

A number of participants cited motivations for drinking that seemed very similar to coping reactions, such as drinking to relax or to feel more comfortable in social situations, but failed to identify it as coping. It is possible that active drinkers are unable to recognize their drinking as a coping behavior. Among the known effects of alcohol consumption is a narrowing of perceptions and diminishing of cognitive processes (M. Sayette, 1999; Steele & Josephs, 1990). Alcohol might reduce a person's perception of stressors or inhibit the abstract reasoning that permits seeing a connection between one's drinking and any

stressors. If so, it may account for participants' failure to identify it as a personal coping response.

Another potential explanation is that the relationship between social stressors and alcohol use may be less direct than presumed. The conceptual model includes one such indirect pathway—stress attributed to being a sexual minority was linked to alcohol use through socializing in bars and night clubs. Participants may have identified the proximal coping response, i.e., seeking companionship and a sense of community, but been less aware of the distal association with drinking.

The Transactional Model of Stress and Coping, which informed the parent study, is useful because it identifies two intermediary steps on the pathway between stressors and coping responses (Lazarus & Folkman, 1984). First, a stressor is identified through a primary appraisal process, in which an individual judges the severity of a potential stressor and his susceptibility to it. Next, in a secondary appraisal process an individual judges the extent to which the stressor is modifiable and gauges the coping resources at his disposal. A person selects coping strategies, with the choice partially influenced by individual personality and cognitive style. Both primary and secondary appraisal may occur without conscious awareness, and they are often repeated in iterative re-appraisals when the stressor is ongoing. If the stress appraisal processes took place sub-consciously, participants in this study may have been unable to identify a relationship with drinking.

Finally, there might have been disclosure bias. If drinking as a coping response carried any stigma or was perceived as shameful, participants may have been reluctant to admit that they drank to cope with stressors or might have downplayed their drinking.

A further insight about stressors and coping was that some variables appeared to function in both roles. For example, seeking social support was a widely used coping strategy, and all participants stated that families were an important source of support. They made great efforts to maintain close relationships with them, especially mothers; however,

families were also an important stressor regarding their sexuality. All 14 participants who adopted a gay identity described coming out to their families as a stressful experience. There was much apprehension about rejection, and on rare occasions, violence. Thus, families could be both a coping resource and a stressor. A similar, but less frequent, pattern was observed for religion. Participants reported ubiquitous negative religious attitudes toward sexual minorities in Latino cultures (e.g., being gay was often framed as a sin). All gay-identified participants attributed sexuality-related stress at the community level to pervasive, intolerant attitudes toward sexual minorities that were rooted in religion. Most participants had abandoned organized religion, but spirituality remained an important source of support. Thus, different aspects of religion served as both a stressor and a source of support. The dual nature of some variables must be taken into account. Public health interventions seeking to reduce stressors must take care not to also diminish coping resources, and further research is warranted to identify the conditions under which select variables may serve as a coping resource versus a stressor.

A strong and consistent finding was the social aspect of alcohol use. Participants' drinking primarily occurred in the company of other people, and alcohol use was an integral component of many social interactions among Latinos. Indeed, drinking as social behavior served as the core concept, linking variables across the embedded contexts (e.g., from pro-drinking cultural norms to individual behavior) and explaining an indirect connection between sexual minority stress and alcohol use. This is not unexpected as it has long been recognized that alcohol use fulfills key social functions in nearly all human societies (Douglas, 1987; Heath, 1995; Pittman & White, 1991). Recent research with sexual minority Latinos, however, suggests that the social environment could be leveraged for risk-reduction interventions. Ramirez-Valles and colleagues (2010) found that participation in HIV or LGBT organizations moderated the associations between ethnic and sexual orientation stigma (both experienced and internalized) and sex under the influence of alcohol or drugs.

*Future Research*

The conceptual model developed here deserves further revision to maximize its utility for risk-reduction interventions. Additional research is needed to ensure a dense and valid explanation of actual drinking behavior among immigrant sexual and gender minority Latinos. Gerson (1991) has proposed a systematic method to refine and extend Grounded Theories by differentiating and sorting categories, decomposing relationships, and integrating constructs from other theories. His supplementation heuristics may provide a useful approach to augment the current model. In addition, some specific adaptations should be considered. Foremost, it remains to be seen whether the current model also explains risky drinking, a sub-set of alcohol use. In addition, the model may benefit from a life course perspective. The cultural context of alcohol use appears to persist over time, and some stressors, such as migrating to the US, may exert an ongoing effect. Finally, quantitative methods could provide appropriate confirmatory data about the relationships among variables in the model. Testable hypotheses include whether migration status moderates the association between social context and alcohol use and how community characteristics (e.g., presence or absence of social organizations for sexual minority Latinos) may explain the relationship between strain due to sexual orientation and alcohol consumption.

*Potential Limitations*

Despite the study's contributions, several potential limitations must be considered. First, I conducted the face-to-face interviews but am neither Latino nor an immigrant. I acknowledged my outsider status with participants (as well as disclosed being a gay man), and they respond warmly. Most seemed eager for the opportunity to tell their stories, but our ethnic and socio-economic differences might have diminished what was disclosed or

affected how it was presented.  In addition, as a non-native Spanish speaker I might have misinterpreted some statements or failed to apprehend nuances of others.  While Spanish-speaking participants appreciated my effort to conduct interviews in their native language, and often paused to ensure that I understood specific words, a sexual or gender minority Latino interviewer—an insider—might have obtained better quality data. Nevertheless, there are benefits to having a discordant interviewer. An outsider may also elicit rich data because there is no presumption of shared cultural experiences or assumed knowledge. The outsider interviewer may probe more extensively for information, or the participant may offer greater detail in recognition of the dissimilar status (Ryen, 2002). Second, I conducted single interviews with each participant.[4] A series of interviews might have led to better rapport with participants and ultimately to richer data and deeper understanding.  Given time and funding constraints, however, I believe that single interviews were sufficient to achieve the aim of this study. Third, Grounded Theory methods produce particular, rather than general, results. These findings are intended only to explain alcohol use in this place, at this time, and in this sample; they may not be transferable to other sexual minority Latino populations.  The details provided in this manuscript, however, will allow readers to assess transferability to other populations for themselves.

*Conclusion*

This study sought to develop a comprehensive understanding of alcohol use by immigrant sexual and gender minority Latinos, a subgroup about whom we know relatively little.  It extends the literature by identifying the most salient social stressors encountered by participants and the range of coping strategies adopted in response.  There was limited support for an association between stressors and alcohol use.  The conceptual model,

---

[4] Member check interviews sought to confirm analytic insights rather than generate new data.

which reflects the core concept of drinking as a social behavior embedded within multiple

contexts, provides a basis for future research and development of risk-reduction

interventions.

**CHAPTER SIX: QUANTIFYING THE ASSOCIATION OF SOCIAL STRESSORS WITH ALCOHOL USE AMONG IMMIGRANT SEXUAL AND GENDER MINORITY LATINOS**

**Background**

Alcohol use has long been an important public health concern in the United States (US). Frequent or heavy alcohol consumption has been associated with increased risk of a range of morbidities, including gastrointestinal disease, cancers, stroke, and cognitive decline (Boffetta & Hashibe, 2006; Meyerhoff, et al., 2005; Thakker, 1998). Alcohol use has also been associated with other risky behaviors, such as violence (Caetano, et al., 2001; Lipsky, et al., 2005; Testa, et al., 2003), motor-vehicle crashes (Blomberg, et al., 2009; Hingson & Winter, 2003; Peck, et al., 2008; Zador, et al., 2000), and risky sexual behavior (Bimbi, et al., 2006; Diaz, et al., 1996; Poppen, et al., 2004). Accordingly, *Healthy People 2020*, which serves as the guide for improving the nation's health, has called for reductions in heavy drinking, binge drinking (defined as five or more drinks within a two-hour period), and average annual alcohol consumption among adults (US Department of Health and Human Services, 2011). Although no *Healthy People 2020* objectives specifically target alcohol consumption by racial/ethnic minorities, Latino community assessments have identified risky drinking as a concern (Aguirre-Molina & Caetano, 1994; Caetano & Galvan, 2001).

Since 1990, the Latino population of the US has grown rapidly and is now the largest racial/ethnic minority group (Census Bureau, 2011c; Ennis, et al., 2011). Despite its size, the health status and needs of Latinos are poorly understood due to gaps in national databases, the heterogeneity of immigrant populations, and the reluctance of some Latinos

to participate in epidemiologic studies because of their immigration status or perceived discrimination (Dovidio, Gluszek, John, Ditlmann, & Lagunes, 2010; North Carolina Institute of Medicine, 2003; Organista, 2007; Rhodes, Eng, et al., 2007). Even less is known about sexual minority Latinos, a sub-group that includes gay- and bisexually-identified men, men who have sex with men (MSM) who do not self-identify as gay or bisexual, and gender variant or transgender individuals. Sexual minority Latinos are often considered a hidden and hard-to-reach population, particularly from the point of view of researchers who are outsiders (M. Zea, et al., 2003); no population-based sampling frame can be elaborated and their potentially stigmatizing characteristics may inhibit recruitment for research studies.

While some immigrant Latino men abstain from or consume little alcohol, recent research suggests that a sizeable proportion engages in heavy weekly or heavy occasional drinking (Worby & Organista, 2007). In their review of alcohol use among US racial/ethnic minorities, Galvan and Caetano (2003) found that a greater proportion of Latino men abstained from alcohol than their non-Latino White peers (35% vs. 26%); however, they also found that a greater proportion of Latinos reported frequent heavy drinking than non-Latino Black or White men (18% versus 15% and 12%, respectively). From 1984 to 1995, the proportion of Latino men who reported three or more alcohol-related problems, such as driving while intoxicated, increased from 9% to 16%. Over the same period, the proportion reporting three or more alcohol-related problems decreased among White men (from 12% to 11%) and among African-American men (from 16% to 13%). It has been suggested that some Latino men may consume alcohol as a way to cope with the psychological strain associated with their minority status (Laureano & Poliandro, 1991; Neff, 1986). Additionally, some Latino men may use episodes of heavy drinking to circumvent cultural constraints that otherwise prevent some expressions of some emotions, such as anger, frustration, or loss (Perez, 2000).

High levels of alcohol consumption and alcohol-related problems have also been reported for gays and lesbians, often exceeding those found among their heterosexual peers (Drabble, et al., 2005; Hughes, 2005; McKirnan & Peterson, 1989a; Stall, et al., 2001; Stall & Wiley, 1988). Proposed explanations for the observed disparities have frequently focused on the greater experiences of stigma and discrimination due to minority sexual orientation or internalized negative attitudes (Cabaj, 1996; DiPlacido, 1998; McKirnan & Peterson, 1989b; Meyer, 2003a). In other words, gays and lesbians experience social stressors as a result of their minority sexual orientation and may turn to alcohol or drugs to cope (Hatzenbuehler, 2009). Although sexual orientation has received far less attention than other types of social stressors, there is increasing support for the proposed association of gay-related stressors with alcohol use (Bux, 1996; Hamilton & Mahalik, 2009; McDermott, et al., 2008). Similar to the literature on drinking among Latino men, however, the findings are mixed and are based on only a small number of studies that have explicitly tested such relationships.

To date, very few studies have examined social stressors and alcohol consumption under the joint conditions of Latino ethnicity and minority sexuality. Nevertheless, a small body of literature has emerged. In one of the earliest reports, Tori (1989) found that Mexican immigrant MSM in the US consumed alcohol at higher levels than their heterosexual Mexican immigrant peers. Extending these findings, Bruce and colleagues (2008) found that internalized homosexual stigma was positively associated with amount of alcohol consumed among gay and bisexual Latino men and transgender Latino individuals in Chicago and San Francisco. As a non-traditional migration destination, many North Carolina communities lack experience with Latino immigrants and have under-developed infrastructures to meet their needs, such as educational programs for English language learners (Gill, 2010; North Carolina Institute of Medicine, 2003). Given the vastly different community characteristics and social contexts, the generalizability of research findings

obtained in established Latino communities, particularly those that also have visible gay

male communities, to newly emerging Latino communities should not be assumed (Farley,

2006).

In this study, I sought to build upon the extant literature by quantifying the

association of select social stressors with alcohol use among immigrant sexual and gender

minority Latinos in North Carolina. Furthermore, given the substantial evidence of its

beneficial effects for a wide variety of health outcomes (Gottlieb & Bergen, 2010; Heaney &

Israel, 2008), I tested whether social support moderated any relationship between social

stressors and alcohol use.

**Methods**

*Study Design*

This study was part of a larger mixed-methods investigation of alcohol use among

immigrant sexual and gender minority Latinos in North Carolina.  Although the quantitative

and qualitative arms used independent samples and analytic techniques, both studies took

place simultaneously, received equal priority, and were linked to each other at multiple

points.  For example, this study's literature review suggested topics to be explored in the

companion qualitative interviews, such as migration-related stressors. In return, emergent

qualitative findings generated a new hypothesis that was tested using this study's

quantitative data—that migration as an adult would be positively associated with alcohol

use. Results from the interview study and the synthesis of qualitative and quantitative

findings have been reported separately (Chapter 5 and Chapter 7, respectively).

The Transactional Model of Stress and Coping (Lazarus & Folkman, 1984) provided

the basic structure of a conceptual model, which focused on alcohol use as an active,

avoidant coping behavior in response to social stressors.  I turned to empirical evidence and

the Minority Stress Model (R. Clark, et al., 1999; Harrell, 2000; Meyer, 1995, 2003b) to

identify three specific sources of stress for the study population: (1) migration-related stressors; (2) experiences of ethnic discrimination and sexual orientation discrimination; and (3) internalized homonegativity, i.e., internalized negative attitudes about same-sex sexuality.  Each social stressor was operationalized by two or more variables (described below). Furthermore, Social Support Theory provided a complementary mechanism to explain the proposed association of social stressors with health outcomes.  Based on the Stress Buffering hypothesis (Cohen & Wills, 1985; Ganster & Victor, 1988). I expected that social support would weaken any association between social stressors and alcohol use.

*Sample*

Data for this study came from an investigation of HIV risk and protective factors among immigrant sexual and gender minority Latinos in North Carolina (R21HD049282). A community-based participatory research (CBPR) partnership guided the parent study and included representatives from public health departments, AIDS service organizations, universities, the local Latino community (including immigrant sexual and gender minority Latinos), and community-based organizations serving the Latino community.  The parent study used Respondent-Driven Sampling (RDS) to recruit participants.  RDS is an extension of chain-referral methods that enables researchers to sample populations when no sampling frame can be established (Heckathorn, 1997; Magnani, et al., 2005; Ramirez-Valles, et al., 2005).  Initially, the CBPR partnership identified eight seeds, participants chosen to represent the diversity of the local sexual minority Latino community (e.g., by level of "outness" about their sexual orientation, country of origin, gender identity, and HIV status). Nine additional seeds were enrolled during data collection to expedite recruitment in accordance with standard RDS procedures, for a total of 17 seeds.  All participants met four eligibility criteria: they (1) self-identified as Latino; (2) were age 18 or older; (3) reported having had sex with a man since age 18; (3) and provided informed consent.  Each seed

completed a psychosocial and behavioral assessment, received instruction on the study's recruitment protocol and eligibility criteria, and recruited up to three additional participants from his social network. Each subsequent participant completed an assessment, received instruction on the study's recruitment protocol and eligibility criteria, and recruited up to three new participants from his social network. Recruitment waves continued until the target sample size (n=190) was met. All participants were compensated for completing their own assessment ($50) and for each referral that also completed an assessment ($20), a dual incentive process that is a hallmark of RDS methods. The Institutional Review Board at Wake Forest University Health Sciences approved the parent study. The Public Health-Nursing IRB at the University of North Carolina at Chapel Hill reviewed this study's secondary analysis of the data and determined that it did not constitute research with human subjects because all data were de-identified and no further contact with participants was proposed.

*Measures*

The parent study's CBPR partnership developed a comprehensive psychosocial and behavioral assessment, using established Spanish measures whenever possible and adapting established English measures or developing new measures when necessary. Following a committee approach, which is an increasingly preferred translation method (Behling & Law, 2000; Census Advisory Committees, 2004), a group of individuals with complementary skills was convened to translate the English items into Spanish. The group included professional translators (including native Spanish speakers from Mexico and Central America), a translation reviewer, content specialists, and a questionnaire design expert. Multiple group members made independent translations of the assessment, and the full committee met to discuss and reconcile the various versions. The CBPR partnership,

which included native Spanish speakers, reviewed and approved the final Spanish translation.

Although the parent study focused on HIV-related outcomes (e.g., condom use, HIV testing), data were available to investigate alcohol use, including current drinking status, frequency of drinking, and number of binge drinking episodes in the past 30 days. Current drinking status was assessed by a single item about any alcohol use in the past year (coded 0=none; 1=any). To avoid the problem of small cell counts, I collapsed the original drinking frequency variable from seven to four levels (coded 0=abstainer; 1=at least one drink per year but less than one per month; 2=at least one drink per month but less than one per week; 3=at least one drink per week). Despite appearing as a rank ordering, I considered it a nominal descriptive variable. The four-level item characterized participants' pattern of drinking (including abstaining from alcohol) but did not distinguish risk because the frequency classification was unrelated to any definition of risky drinking. Current drinkers were asked to report the number of binge episodes in the past 30 days, defined as five or more drinks on a single occasion, and to select the most common reason for drinking from a list of seven options (1=enhance sex; 2=bored/for fun; 3=lose inhibitions; 4=lonely/ depressed; 5=physical pain; 6=other; 7=don't know).

Among migration related stressors, language use was measured by the language sub-scale of the *Short Acculturation Scale for Hispanics* (Marin, et al., 1987). Five items assessed participants' language use in a variety of situations, such as "what language(s) do you usually speak with your friends?" Participants responded on a five-point bipolar scale (coded 1=exclusively Spanish to 5=exclusively English; $\alpha$=0.92). Because a majority (59%) of participants spoke exclusively Spanish or more Spanish than English, I modeled language use in terms of English acquisition, with exclusive Spanish speakers serving as the referent group. Participants also reported the number of years they lived in the US, which I used as a proxy for duration of cultural contact. I calculated age at migration by

subtracting participants' self-reported years in the US from self-reported age at time of interview, then created a dichotomous indicator for migration as an adult, i.e., age 18 years or older.

The parent study assessed ethnic discrimination by adapting the *Detroit Area Study Discrimination Questionnaire* (Williams, et al., 1997). Ten items presented examples of discrimination (e.g., "you were treated with less courtesy than others") and participants reported the frequency of each event (coded 1=never to 4=very frequently; $\alpha$=0.95). I created binary indicators for each type of discrimination (coded 0=none; 1=any) and summed them to create a count variable (range 0-10). The parent study assessed sexual orientation discrimination by adapting a previously used scale of social discrimination and HIV risk among Latino gay men (Díaz & Ayala, 2001). Five statements described inter-personal harassment or internalized negative attitudes due to sexual orientation (e.g., "you had to pretend to be straight in order to be accepted") and participants reported the frequency of each event (coded 1=never to 4=always; $\alpha$=0.75). As with racial discrimination, I created binary indicators for each type of homophobia and summed them to create a count variable (range 0-5).

Internalized homophobia was assessed using the *Reactions to Homosexuality Scale* (RHS), a measure of internalized negative attitudes towards same-sex sexual orientation (Ross & Rosser, 1996). Each RHS item presented a statement (e.g., "social situations with gay men make me feel uncomfortable") and participants responded to each statement on a seven-point bipolar scale (coded 1=strongly disagree to 7=strongly agree). Based on a confirmatory factor analysis, I used a reduced set of 16 items that captured three dimensions of internalized homonegativity: (1) comfort in social interactions with gay and bisexual men (five items, $\alpha$=0.86); (2) internalized negative stereotypes about gay men (four

items, $\alpha$=0.82); (3) and personal comfort with and acceptance of same-sex sexual orientation (six items, $\alpha$=0.76).

A single item asked participants how many other immigrant sexual and gender minority Latinos they knew. This count variable was originally included as a means to understand the RDS sampling process; however, it also served as a measure of participants' social ties. The availability of social support, which is one of the benefits of connections to others, was measured using an adaptation of the *Index of Sojourner Social Support* (Ong & Ward, 2005). Originally an 18-item scale, I used 11 items based on a preliminary validation study (Gilbert & Rhodes, 2012b). The adapted scale assessed the availability of other people for supportive functions relevant to adults living outside their country of origin (e.g., "Listen and talk with you whenever you feel lonely or depressed"; coded 0=no one would do this to 4=many would do this; $\alpha$=0.96).

*Data Collection*

Three native Spanish-speaking males conducted interviews from March to December 2008. The parent study chose face-to-face interviews, which took 45-90 minutes to complete, rather than other methods, such as audio computer assisted self-interview, based on formative data (Rhodes, Eng, et al., 2007; Rhodes, et al., 2010; Vissman, et al., 2009) and feedback from CBPR partnership members suggesting that participants would be more likely to engage with a well-trained interviewer who could establish rapport and trust. This approach was believed to be more culturally congruent given that some Latinos value *personalismo,* a cultural characteristic that stresses the importance of warm and friendly interactions and interpersonal engagement (F. F. Marsiglia & S. Kulis, 2009). Furthermore, utilizing an interviewer-administered assessment overcame other potential response

limitations due to low literacy skills and reduced visual acuity resulting from lack of access to optical services.

*Analysis*

I hypothesized that migration as an adult, ethnic discrimination, sexual orientation discrimination, and internalized negative stereotypes about gay and bisexual men would be positively associated with alcohol use because they would exacerbate stress. Conversely, I hypothesized that English use, social comfort with gay and bisexual men, and personal acceptance of one's own sexuality would be negatively associated with alcohol use because they would reduce stress. I began the analysis by calculating means and standard deviations or counts and proportions to describe the sample. Then, I performed bivariate tests of association with each hypothesized predictor, using logistic regression to model the dichotomous outcome (any drinking in past year vs. none), a multinomial logit model for the four-level frequency variable (yearly, monthly, or weekly drinking vs. none), and a Poisson model of the count of binge drinking episodes that included a scale parameter to account for overdispersion of the variable. Each hypothesized predictor was tested individually for moderation by social support, which was centered at the grand mean to facilitate interpretation of interactions. I followed procedures suggested by Hosmer and Lemeshow (2000), retaining all variables that had bivariate associations at $p<0.25$ for construction of multiple variable models. Preliminary multiple variable models were fit, then each variable was assessed in a backwards elimination process in which I constrained its effect to zero and performed a likelihood ratio test. I removed variables when their inclusion did not significantly improve model fit. To better understand interactions, I graphed simple slopes for each conditional effect at one standard deviation above and below the grand mean of social support. I calculated the regions of significance, threshold values of the moderator below or

above which the interaction is significant, for each interaction using an online utility (available at www.quantpsy.org/interact/mlr2.htm).

Because the data were obtained via RDS methods, which violated the assumption of independent observations, I accounted for the sampling strategy by using individual post-hoc sampling weights that I calculated with the RDS Analysis Tool v5.6 (RDS Incorporated, Ithaca NY). These sampling weights allowed adjustment for participants' different social network sizes (i.e., different numbers of potential recruits) and homophily within recruitment dyads (i.e., the tendency of recruiters to recruit others similar to themselves), thereby minimizing the bias introduced by the sampling method. Although there is currently no consensus on appropriate regression modeling of RDS data (L. G. Johnston, et al., 2008), sampling weights are an increasingly accepted approach (Carballo-Dieguez, et al., 2012; Garfein, et al., 2009; Jenness, et al., 2011; Schneider, et al., 2012; Song, et al., 2012; Townsend, et al., 2010; Wayal, et al., 2011).

To maximize statistical power, I used SAS PROC MI to impute missing values using Markov Chain Monte Carlo methods, beginning with 500 iterations to establish stable estimates then taking every 100th estimated data set for a total of ten imputed data sets. To enable multiple imputation of categorical variables, I created binary indicators for each response level except the referent group. I performed independent analyses with each imputed data set and combined results using SAS PROC MIANALYZE. Because traditional goodness-of-fit statistics are not available in multiple imputation, I used the COMBCHI macro (available at http://www.ssc.upenn.edu/~allison/#macros) to combine likelihood ratio chi-square statistics from each imputed data set, allowing me to test the overall null hypothesis that all coefficients in the final models equaled zero. I did not impute any missing outcomes. All statistical tests were performed using SAS v9.3 (SAS Institute, Cary NC), were two-tailed, and used the critical alpha of 0.05.

**Results**

*Sample Characteristics*

One hundred ninety immigrant sexual and gender minority Latinos completed the psychosocial and behavioral assessment.  Participants were young (mean age 26 years) and had lived in the US on average ten years (Table 6.1).  Most were originally from Mexico (81%), self-identified as gay (79%), had earned a high school diploma or GED (69%), and had migrated as adults (63%).  A minority of participants (17%) self-identified as transgender.  Ninety-one percent of participants were employed year-round and 83% earned less than $30,000 annually. The sample included approximately equivalent proportions of single persons (48%) and persons in a dating relationship (46%). Few participants reported excellent or very good health (29%); however, none reported poor health.  Slightly more than half the sample (55%) reported no alcohol consumption in the past year. Among drinkers, the most frequently endorsed reasons for using alcohol included boredom/for fun (47%), an undefined reason (32%), and to enhance sex (16%).

Table 6.1 Quantitative Study Participant Characteristics

| Variable | Mean ± SD (min-max) or n (%), as appropriate | |
|---|---|---|
| Age, years (n=182) | 25.5 | ± 5.4 (18-48) |
| Country of origin (n=187) | | |
|     Mexico | 152 | (81) |
|     Guatemala | 4 | (2) |
|     El Salvador | 3 | (2) |
|     Honduras | 3 | (2) |
|     Other | 25 | (13) |
| Migrated as adult (n=167) | 105 | (63) |
| Length of time in US, years (n=162) | 9.7 | ± 5.3 (0.3-26) |
| Educational attainment (n=178) | | |
|     Less than high school diploma or GED | 24 | (13) |
|     High school diploma or GED | 122 | (69) |
|     Some college | 28 | (16) |
|     4-year college degree | 4 | (2) |
| Employment status (n=187) | | |
|     Employed year-round | 170 | (91) |
|     Employed seasonally | 13 | (7) |
|     Unemployed | 4 | (2) |
| Annual income (n=181) | | |
|     Less than $20,000 | 56 | (31) |
|     $20,000 – $29,999 | 94 | (52) |
|     $30,000 - $39,999 | 26 | (14) |
|     $40,000 or more | 5 | (3) |
| Sexual identity (n=188) | | |
|     Gay/homosexual | 149 | (79) |
|     Bisexual | 18 | (10) |
|     Straight/heterosexual | 3 | (2) |
|     Don't know/other | 18 | (10) |
| Relationship status (n=184) | | |
|     Single | 89 | (48) |
|     Dating | 84 | (46) |
|     Partnered or married | 11 | (6) |
| Transgender (n=187) | 31 | (17) |
| Sexual minority Latino network size (n=190) | 12 | ± 6.8 (1-50) |
| Self-Rated Health (n=185) | | |
|     Excellent | 19 | (10) |
|     Very good | 35 | (19) |
|     Good | 122 | (66) |
|     Fair | 9 | (5) |
| Current drinker | 85 | (45) |
| Reasons for drinking, among current drinkers (n=85) | | |
|     Bored/for fun | 38 | (47) |
|     Other | 26 | (32) |
|     Enhance sex | 13 | (16) |
|     Lose inhibitions | 2 | (2) |
|     Lonely/depressed | 2 | (2) |

*Drinking Status*

Regressing drinking status (any versus none) on social stressors, social support, and demographics, I retained three predictors and two control variables for the final model (6.2). As I detected no significant interactions with social support in bivariate tests, the final model included no conditional effects. Exponentiating the final estimates, which were calculated on the log-odds scale, I found the expected change in odds of being a current drinker for each predictor. For example, each additional type of ethnic discrimination was associated with 22% higher odds of being a current drinker (adjusted odds ratio [aOR] 1.22; 95% confidence interval [CI] 1.06, 1.40) and each incremental increase in social support score was associated with 59% lower odds of being a current drinker (aOR 0.41; 95% CI 0.22, 0.76).

Table 6.2 Final Logistic Model of Drinking Status (Any vs. None) among Immigrant sexual and gender minority Latinos (n=190)

| Variable | Estimate | SE | p-value |
| --- | --- | --- | --- |
| Ethnic discrimination | 0.20 | 0.07 | <0.01 |
| Internalized negative stereotypes | -0.12 | 0.13 | 0.33 |
| Social support | -0.90 | 0.32 | <0.01 |
| Age | -0.04 | 0.03 | 0.26 |
| Educational attainment | | | |
|    Less than HS or GED | ref. | -- | -- |
|    HS or GED | -7.2 | 888.94 | 0.99 |
|    Some college | 0.20 | 0.53 | 0.71 |
|    College degree | 2.63 | 1.84 | 0.15 |

Note: estimates are adjusted for Respondent-Driven Sampling via post-hoc sampling weights calculated in RDSAT v5.

*Drinking Frequency*

Among the participants who had consumed alcohol in the past year (n=85), I classified 53% as yearly drinkers (i.e., at least one drink in the past year but less than one drink per month), 25% as monthly drinkers (i.e., at least one drink per month but less than one per week), and 22% as weekly drinkers (i.e., at least one drink per week). Regressing drinking frequency on social stressors, social support, and demographics, I retained four

predictors, three interactions with social support, and three control variables in the final

model (Table 6.3).

Exponentiating the estimates as before, I found the expected change in odds of

membership in each drinking frequency category relative to those who consumed no

alcohol. Among main effects, each additional year of age was associated with 17% higher

odds of being a yearly drinker (aOR 1.17; 95% CI 1.02, 1.35), self-identifying as gay was

associated five-fold higher odds of being a yearly drinker (aOR 4.95; 95% CI 1.10, 22.40),

and each one-unit increase in social comfort score was associated with nearly 20-fold higher

odds of being a weekly drinker (aOR 19.69; 95% CI 3.24, 106.10). Although I had detected

three interactions in bivariate tests, none was significant in the final multiple variable model.

Table 6.3. Final Multinomial Model of Drinking Frequency (Current Drinkers vs. Abstainers) among Immigrant sexual and gender minority Latinos (n=186)

| Variable | Yearly drinkers (n=41) | | | Monthly drinkers (n=21) | | | Weekly drinkers (n=19) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Estimate | SE | p | Estimate | SE | p | Estimate | SE | p |
| Years in US | 0.13 | 0.07 | 0.07 | -0.21 | 0.19 | 0.26 | 0.07 | 0.25 | 0.76 |
| Years in US by social support | -0.73 | 0.48 | 0.13 | 0.23 | 0.40 | 0.56 | -0.66 | 0.64 | 0.30 |
| Social comfort with gay men | -1.01 | 0.57 | 0.08 | 0.20 | 0.65 | 0.76 | 2.92 | 0.89 | <0.01 |
| Social comfort with gay men by social support | -0.19 | 1.01 | 0.85 | 1.79 | 1.01 | 0.08 | 1.80 | 1.35 | 0.18 |
| Internalized negative stereotypes | -0.47 | 0.38 | 0.22 | -0.53 | 0.63 | 0.40 | -1.17 | 0.85 | 0.17 |
| Social support | -3.59 | 6.56 | 0.58 | -11.04 | 7.00 | 0.11 | -7.42 | 8.24 | 0.37 |
| Age | 0.16 | 0.07 | 0.01 | 0.16 | 0.10 | 0.12 | 0.23 | 0.15 | 0.12 |
| Educational attainment | | | | | | | | | |
| Less than HS or GED | ref. | -- | -- | ref. | -- | -- | ref. | -- | -- |
| HS or GED | -0.07 | 1.67 | 0.97 | -2.66 | 1.36 | 0.05 | -1.60 | 1.88 | 0.40 |
| Some college | 1.87 | 1.72 | 0.28 | -1.49 | 2.22 | 0.50 | -10.11 | 5.70 | 0.08 |
| College degree | 3.48 | 3.15 | 0.27 | -13.56 | 2977.40 | 0.99 | 0.45 | 1789.40 | 0.99 |
| Gay self-identity | 1.29 | 0.91 | 0.15 | 0.18 | 1.55 | 0.91 | 1.60 | 0.77 | 0.04 |

Note: estimates are adjusted for Respondent-Driven Sampling via post-hoc sampling weights calculated in RDSAT v5.

*Binge Episodes*

Among the participants who had consumed alcohol in the past year (n=85), over half
(61%) reported at least one binge drinking episode (five or more drinks on a single
occasion) in the past 30 days (range 1-15). Regressing the number of binge episodes on
social stressors, social support, and demographics, I retained three predictors, two
interactions with social support, and one control variable in the final model (Table 6.4).
Exponentiating the estimates, which were calculated on the log-count scale, I found the
expected change in number of binge episodes. For example, compared to being single,
being married or partnered was associated with an increase of three binge episodes per
month (exponentiated estimate [EE] 3.13; 95% CI 1.00, 9.75); however, this effect was
marginally significant (p=0.05).

Table 6.4 Final Poisson Model of Binge Drinking Episodes in the Past 30 Days among
Current Drinkers (n=81)

| Variable | Estimate | SE | p-value |
|---|---|---|---|
| Migration as adult | 0.18 | 0.33 | 0.60 |
| English use | 0.56 | 0.25 | 0.02 |
| English use X social support | -1.33 | 0.47 | <0.01 |
| Ethnic discrimination | 0.03 | 0.05 | 0.50 |
| Ethnic discrimination X social support | -0.27 | 0.07 | <0.001 |
| Social support | 3.57 | 1.18 | <0.01 |
| Relationship status | | | |
|    Single | ref. | -- | -- |
|    Dating | -1.81 | 50683 | 1.00 |
|    Married/partnered | 1.14 | 0.58 | 0.05 |

Note: estimates are adjusted for Respondent-Driven Sampling via post-hoc sampling weights
calculated in RDSAT v5.

Probing the interactions of social support with English use and ethnic discrimination,
I found antagonistic relationships (Figure 6.1 and Figure 6.2). When social support was one
standard deviation below the mean, the expected log-count of binge episodes increased
with higher levels of English use and more types of ethnic discrimination. In contrast,

Figure 6.1 Conditional Effect of English Use on Log-Count of Binge Drinking Episodes in Past 30 Days at Low Social Support (-1SD) and High Social Support (+1SD) among Immigrant sexual and gender minority Latinos Who Are Current Drinkers (n=85)
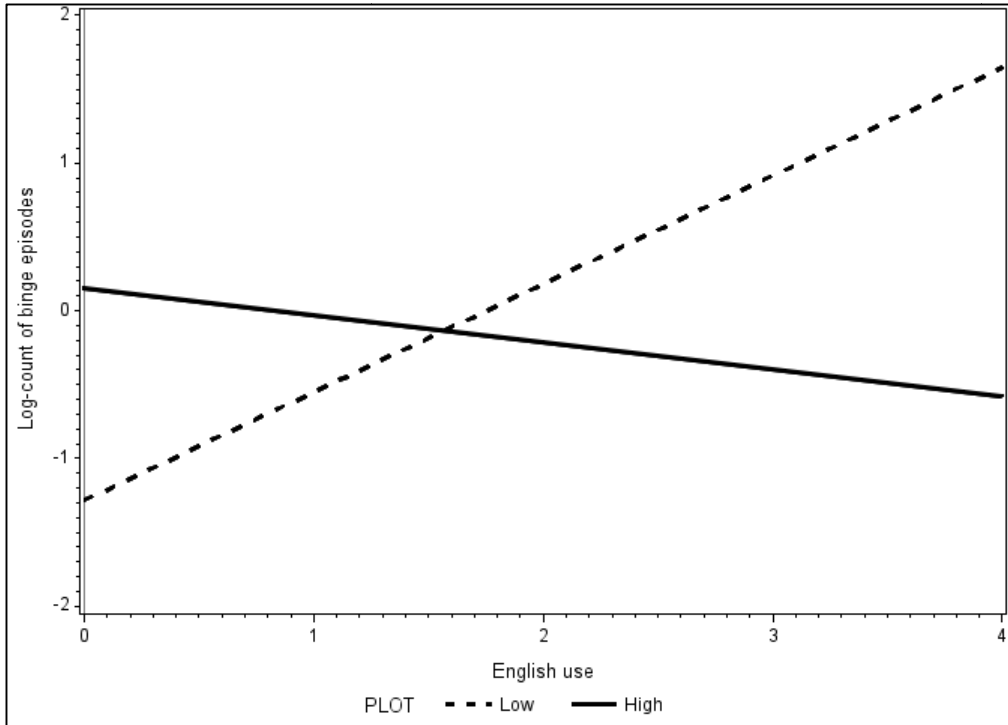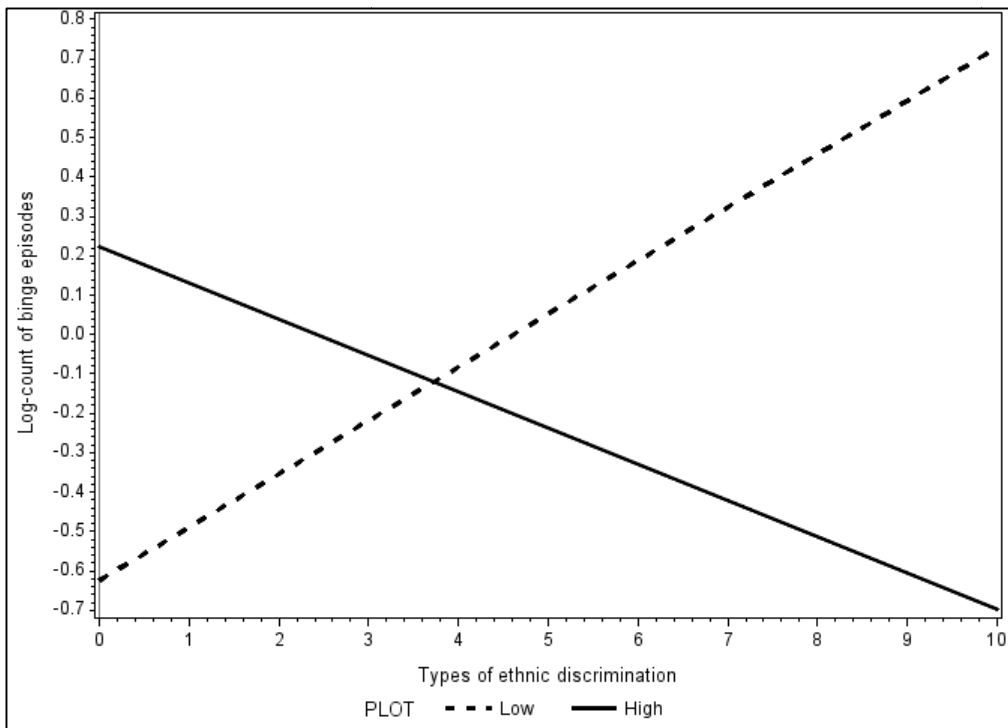


Figure 6.2 Conditional Effect of Ethnic Discrimination on Log-Count of Binge Drinking Episodes in Past 30 Days at Low Social Support (-1SD) and High Social Support (+1SD) among Immigrant sexual and gender minority Latinos Who Are Current Drinkers (n=85)

when social support was one standard deviation above the mean, the expected log-count decreased with increasing levels of both predictors. Calculating regions of significance, the effect of English use on log-count of binge episodes was only significant when social support score was less than 1.78; the effect of ethnic discrimination on log-count was only significant when social support score was below 1.64 or above 2.88.

**Discussion**

This study sought to quantify the association of social stressors with alcohol use among immigrant sexual and gender minority Latinos and to determine whether social support moderates any such relationship. It extends current research in several ways. First, it reports findings from North Carolina, a non-traditional migration destination that has experienced exponential growth of its Latino population. Second, it tested theoretically derived hypotheses about stressors that are salient to the study population, a hard-to-reach sub-group about which little is known. Third, as the quantitative arm of a larger mixed methods investigation, the study contributes to a more complete understanding of alcohol use among immigrant sexual and gender minority Latinos.

Fifty-five percent of participants reported no alcohol use in the past year. In contrast, recent studies of immigrant Latino men in North Carolina found that non-drinkers accounted for only 26% and 37% of participants (Grzywacz, et al., 2007; Loury, et al., 2011). As those studies did not assess sexual orientation, however, their findings may not be directly comparable. As a self-reported measure, the low prevalence of current drinking in this study compared to other studies may be due to underreporting of alcohol use (Tourangeau, Rips, & Rasinski, 2000). In addition, although the parent study inquired about reasons for drinking, there was no assessment of the converse, reasons for not drinking. To improve our knowledge base, future studies should assess motivations for both drinking and not drinking.

Despite the large proportion of abstainers, this study's findings suggest high levels of risky drinking. Nearly two-thirds of current drinkers (61%) reported at least one binge drinking episode in the past 30 days. Considering the full sample, including abstainers, the estimated population prevalence of binge drinking was 23%. This is less than the *Brothers y Hermanos* study, which found 40% of Latino MSM respondents in Los Angeles and New York reported at least one binge drinking episode in past three months (Mizuno, et al., 2012); however, it is higher than the 2011 Behavioral Risk Factor Surveillance System, which estimated 19% of all North Carolina Latino males engaged in binge drinking (North Carolina State Center for Health Statistics, 2012).

There was mixed support for the *a priori* hypotheses. As predicted, ethnic discrimination was positively associated with any drinking and with binge drinking, although the latter relationship depended on level of social support. Contrary to expectations, however, sexual orientation discrimination was not associated with any drinking outcome. The lack of an association may be due to response bias. First generation Latino immigrants, particularly those with greater endorsement of traditional gender attitudes (i.e., *machismo*), may be less likely to disclose sexual orientation discrimination as it could be seen as shameful or stigmatizing. Given that participants in the companion qualitative study identified being a sexual minority as an important stressor and there may be an indirect relationship with alcohol use through social contexts (Chapter Five), further research is warranted to understand how its relationship to alcohol use among Latinos in North Carolina.

Further related to sexual orientation, I had hypothesized that internalized negative stereotypes about gay men would produce greater psychological strain and that some sexual minority Latinos would turn to alcohol as a coping response. Conversely, I had presumed that social comfort around gay men and personal comfort with and acceptance of same-sex sexual orientation would produce less stress and would require fewer coping

responses, thereby having a negative association with drinking. I found little support for the hypothesized relationships.  Against expectation, social comfort with gay and bisexual men was positively associated with weekly drinking. Gay self-identity, a demographic control variable, was also positively associated with weekly drinking. Considered together, they suggest an explanation that rests on drinking as a social behavior in a specific venue, which is consistent with findings from the qualitative study. Participants with greater social comfort around gay men and those who self-identify as gay may be more likely to frequent gay bars, which remain important social venues for sexual minority Latinos (Gilbert & Rhodes, 2012a; Grov, 2012).  Attendance in a bar may be positively associated with drinking through its pro-drinking norms.

As expected, social support was negatively associated with any drinking. It also moderated the relationships of English use and ethnic discrimination with binge drinking, which is consistent with stress buffering hypotheses.  Probing the interaction with English use, however, I discovered an unexpected relationship. I had predicted that the main effect of English use would be negative.  In other words, greater English use would be negatively associated with drinking as it would facilitate navigating daily life in the US, thereby producing less stress.   At one standard deviation below the group mean, I found a positive association. Under conditions of low social support, greater English use was associated with greater binge drinking.

English use has been widely used as a proxy measure of acculturation, yet there is little consensus about its relationship with alcohol use.  It deserves further exploration as the literature is replete with inconsistent findings.  One of the earliest investigations of alcohol use among immigrant Latinos found a positive association between any drinking and a composite measure of preferred language, ethnicity of friends and other social contacts, and endorsement of traditional Latino cultural values (Caetano, 1987).  Later research with Latino men, however, found no association between alcohol use and a similar measure of

preferred language, ethnic identification, and nativity (Markides, Ray, Stroupbenham, & Trevino, 1990), a positive relationship between alcohol use and English language preference and US nativity (Neff & Hoppe, 1992), and a negative relationship between alcohol use and greater English language use (Karriker-Jaffe & Zemore, 2009). In addition, future research should investigate the role of English use and its association with drinking behaviors among Latinos in non-traditional settlement states.

*Potential Limitations*

Several potential limitations must be considered. First, the data were collected in a cross-sectional survey, thereby precluding any causal inferences. Nevertheless, these findings provide useful information because association is a necessary condition to establish causation. Second, the parent study utilized Respondent-Driven Sampling (RDS), a non-probabilistic sampling method designed to reach hidden or hard-to-reach populations. RDS methods introduce bias, but by applying post-hoc sampling weights in the regression analyses I reduced bias associated with the sampling method and arrived at generalizable estimates. Third, the sample size for analysis was modest and may have reduced the statistical power of the regression models. This was particularly apparent in the wide confidence intervals around some point estimates. Recognizing the potential limitation, I imputed all missing data for predictors, thus ensuring use all possible information. Larger samples in future research, however, will provide more precise parameter estimates. Finally, I recognize the possibility of modeling errors, specifically omitted variable bias. I was constrained by the variables assessed in the parent study, which had not sought to investigate alcohol use. Thus, models may have omitted salient predictors or covariates, such as drinking behavior in the country of origin. Such omissions may lead to incorrect inferences about various relationships with alcohol use.

*Conclusion*

Although a large proportion of participants abstained from alcohol, the majority of current drinkers reported at least one binge drinking episode in the past 30 days, indicating that sexual minority Latinos constitute a priority population for alcohol risk-reduction interventions. Ethnic discrimination was largely associated with alcohol use as expected, consistent with the stress and coping model, and social support moderated two relationships between stressors and alcohol use, consistent with the stress-buffering hypothesis. As no predictor was associated with all three drinking outcomes, however, further research is necessary to understand how social stressors shape alcohol use, and under what conditions they might be associated with risky drinking.

**CHAPTER SEVEN: SYNTHESIS OF FINDINGS, POTENTIAL LIMITATIONS, SIGNIFICANCE, AND IMPLICATIONS FOR RESEARCH AND PRACTICE**

This study sought to address an overarching public health problem—risky drinking among immigrant sexual and gender minority Latinos—by developing a comprehensive understanding of alcohol use. Recognizing that the topics under study were inherently complex phenomena, I used a mixed-methods study design. The qualitative arm sought to identify the range of social stressors faced by the study population, the coping strategies adopted in response, and the role of alcohol use. The quantitative study tested theoretically derived hypotheses about the relationships between select social stressors, social support, and alcohol use. This chapter synthesizes results from the two studies, identifies potential limitations, discusses the significance of the findings, and presents implications for public health research and practice.

**Synthesis of Findings**

The qualitative and quantitative arms used independent samples recruited via different methods and at different times, but they drew from the same underlying population, immigrant sexual and gender minority Latinos in North Carolina. Comparing demographic characteristics, the two samples were broadly similar. The average ages were 30 years (range 18-42) and 26 years (range 18-48), the average time in the US was 12 years (range ½ - 27 years) and 10 years (range ⅓ – 26 years), and the proportion of Mexican origin participants was 87% and 81%. Thus, the samples appear sufficiently similar to permit integration of findings.

*High Prevalence of Binge Drinking*

I found higher levels of any alcohol consumption in the smaller (n=15), more recently recruited (2012) qualitative sample compared to the larger (n=190), less recently recruited (2008) quantitative sample. Among qualitative study participants, only 20% reported abstaining from alcohol; in contrast, 55% of quantitative study participants reported no alcohol use in the past year. While it is possible that the observed difference in drinking prevalence was due to changes in alcohol use in the study population during the intervening years between data collection periods, a more likely explanation is that the qualitative interviews benefitted from better rapport and higher trust among participants, which facilitated greater disclosure of drinking behaviors. Of note, however, is the high level of binge drinking found in both samples. Among current drinkers in the qualitative study, 58% reported at least one binge drinking episode per month. Among current drinkers in the quantitative study, 61% reported at least one binge drinking episode in the past 30 days in what time period. As no level of binge drinking is considered safe, this is an indication of great potential harm. Therefore, immigrant sexual and gender minority Latinos in North Carolina should be considered a priority population for risk-reduction interventions to address binge drinking.

*Two Dimensions of Alcohol Use*

Overlaying the inductive conceptual model that emerged from the qualitative analysis and the deductive conceptual model that guided the quantitative analysis, it was striking that there was little similarity between the two. The inductive model, which was derived from participants' descriptions of social stressors, coping strategies, and drinking behaviors, found that alcohol use was an inherently social behavior and that it was nested within cultural, social, and individual contexts. The deductive model, which was derived from theory and empirical evidence, found limited support for a main pathway from select social

stressors to the outcome as well as two protective interactions with social support.  Rather

than being incompatible, these two models provide a more complete understanding of the

behavior, represented by Figure 7.1. Specifically, alcohol use among immigrant sexual and

gender minority Latinos is both a social behavior and a potential coping response to

stressors. As a complex behavior, it cannot be understood by either dimension alone.
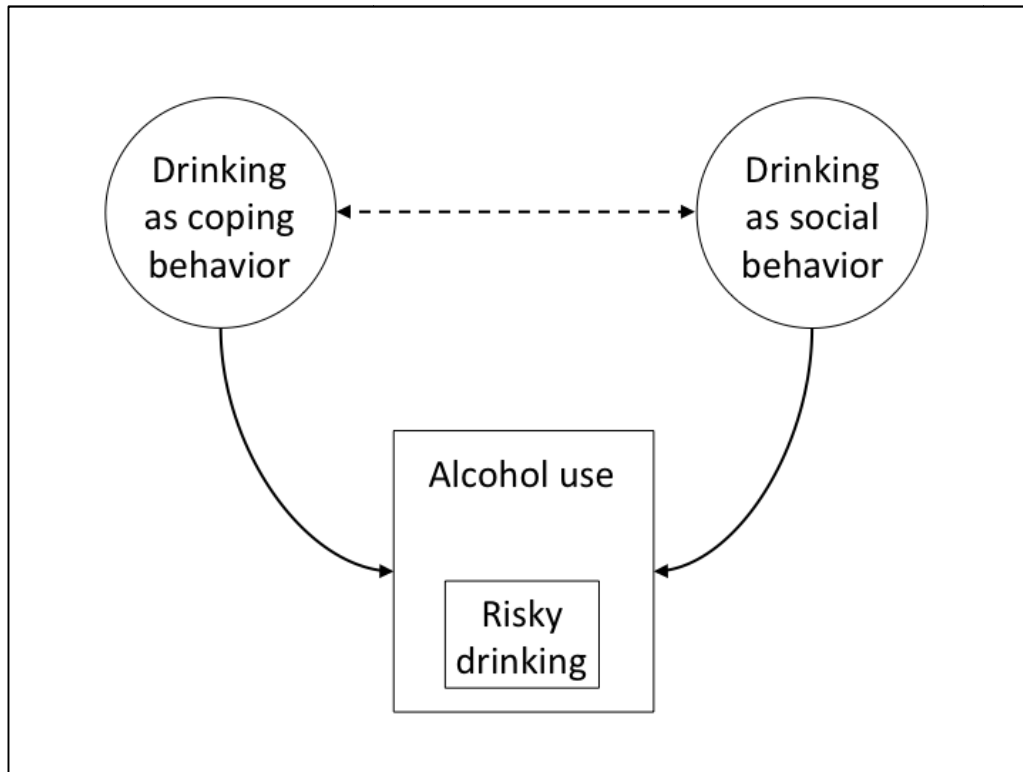


Figure 7.1. Two Dimensions of Alcohol Use

*Need for Culturally Appropriate Theory*

Reviewing the studies' results, I saw broad agreement in several areas. In the

qualitative study, seeking support was identified as a coping strategy, and the quantitative

study found that social support buffered two stressors as predicted.  In addition, interview

participants described being an immigrant and being a sexual minority as important

stressors.  Operationalizing these constructs slightly differently, the quantitative study found

that a migration-related stressor and experiences of ethnic discrimination were associated

with drinking. While these convergent findings lend support to the importance of migration experiences, minority sexuality, and social support for the study population, the lack of better agreement between the studies was troubling. Among divergent findings, the qualitative study identified another three categories of stressors (the strains of daily living, being an undocumented immigrant, and not being Mexican) that were absent from the quantitative study. As the quantitative conceptual model was derived from extant theories that simply did not include these specific stressors, I concluded that those theories were insufficient to capture the full range of stressors experienced by immigrant sexual and gender minority Latinos.  Furthermore, there was little support for internalized homonegativity, one of the stressors in the quantitative study that was predicted by theory; however, the qualitative study participants described at length the stress they attributed to their sexual orientation, particularly at the family and community levels. Thus, it would appear that the quantitative study incorrectly operationalized a key aspect of minority sexuality.  Rather than internalized individual negative attitudes, interpersonal and community-level negative attitudes may be more salient for the study population.

The divergent findings prodded me to consider explanations for the different study models and results, which ultimately led me to consider how theory may be used. Although the quantitative study was based on established theories with substantial empirical support, they might not have been appropriate for this study because they were developed in different populations.  In other words, I question the cross-cultural validity of the Transactional Model of Stress and Coping and the various formulations of the Minority Stress Model.  As they were developed in non-Latino and predominantly (but not exclusively) heterosexual populations, they may not be appropriate for immigrant, sexual minority Latinos.  I am not alone; a substantial literature has grown up in recent years that challenges the assumption that theories must be inherently abstract and generalizable across social and cultural contexts (Airhihenbuwa & Obregon, 2000; Bond & Smith, 1996;

Elder, Ayala, Parra-Medina, & Talavera, 2009; Gould, 1999). That is not to say that I question the utility of theory. I firmly believe that theory must guide our research, especially the development of interventions. Formative research, however, is essential to assess the degree to which theoretical constructs are transferable to new populations or settings. This study's findings constitute preliminary work towards the development of a culturally appropriate theory of alcohol use among sexual minority Latinos.

**Potential Limitations**

Several potential limitations must be considered. First, successful mixed-methods studies depend on having skills in both traditions; the researcher must be equally competent in qualitative and quantitative methods. During the doctoral program in Health Behavior, I have completed coursework in advanced qualitative methods (e.g., HBHE 754, EDUC 982) and advanced quantitative methods (e.g., PSYC 846, SOWO 916). In addition, over the course of the study I made use of additional resources, such as attending a two-day workshop on constructivist Grounded Theory taught by Kathy Charmaz, and obtaining statistical consultations from faculty at the Howard W. Odum Institute for Social Science at the University of North Carolina at Chapel Hill. Thus, I have assured competency in each paradigm's methods. Second, each arm of the mixed-methods study was based on a different epistemological and ontological frameworks. The quantitative study rested on post-positivist assumptions, while the qualitative study relied on relativist and constructivist assumptions. In short, the former assumed a single and constant underlying truth that could be approximated, and the latter assumed many possible truths, the understanding of which would be produced through interactions. Rather than seeking a unified philosophical paradigm, I adopted a pragmatic approach (Johnson, et al., 2007; Teddlie & Johnson, 2009) that allowed multiple frameworks and emphasized the utility of different approaches to address the overarching research question. By explicitly naming each epistemological

framework and considering the joint implications, I have successfully executed a pragmatic mixed-methods study. Third, both qualitative and quantitative arms relied on self-report data. There might have been under-reporting of sensitive or stigmatizing data due to concerns about social desirability. In addition, self-report measures of alcohol use depended on accurate recall of past behaviors. It is known that accuracy can vary by instrument and that heavy drinkers may under-report their consumption (Del Boca & Darkes, 2003; Midanik et al., 1998; Stockwell et al., 2004). Each study utilized face-to-face interviews, which was believed to be the most culturally congruent method. Nevertheless, alternate data collection modalities, such as audio computer assisted self-interview (ACASI) might have obtained different reports of behaviors.

**Significance**

This study contributes to the field of public health by addressing several gaps in the literature. First, it focused on alcohol use as a behavioral outcome among immigrant sexual and gender minority Latinos, a subgroup that may be marginalized along multiple dimensions (e.g., language use, immigration status, ethnicity, and sexual orientation) but about which we know relatively little. To date, most research with sexual minority Latinos has focused on sexual behavior and HIV risk. Given the harmful effects of heavy alcohol consumption, both directly and indirectly, attention to drinking as an independent outcome is warranted. Second, the study was conducted in a region that has received relatively little attention, the Southeast US. While the largest numbers of Latinos continue to be found in traditional migration states (e.g., California, Texas, Florida, and New York), the last two decades have seen shifting migration patterns accompanied by exponential growth of Latino populations in non-traditional states, including North Carolina. However, the vastly different community characteristics and social contexts in the Southeast US call into question the generalizability of previous research findings from established Latino communities. This

study adds to a small but growing body of literature on sexual minority Latinos in non-traditional states. Third, the study extends current knowledge by proposing a conceptual model of alcohol use that may serve as the basis for risk-reduction interventions. To my knowledge, it is the first conceptual model of alcohol use to be developed based on empirical findings among sexual minority Latinos. Thus, it may fit the topic better than other models derived from other populations, places, or theories.

**Implications for Research and Practice**

The finding that there are two key dimensions of alcohol use—drinking as a coping response and drinking as a social behavior—prompts several new research questions. First, the relationship between the two dimensions of alcohol use remains unknown. As it seems unrealistic to presume that they are orthogonal (e.g., stressors exist within cultural, social, and individual contexts), how does one dimension affect the other? In addition, are there conditions under which one dimension exerts more influence than the other, i.e., when is drinking primarily a social behavior and when is it primarily a coping behavior? Second, social support and social context are key elements of the qualitative and quantitative studies' models. Further research is necessary to understand how each construct may operate as a protective or injurious influence. For example, what are the relationships between types of support, sources of support, peer context, group norms and alcohol use? Finally, the behavioral outcome of both models is alcohol use. As moderate consumption is considered safe, additional research is necessary to understand how the two-dimensional model could explain risky drinking. Is the model adequate to explain binges or other forms of risky drinking?

# APPENDIX A: QUALITATIVE STUDY ADVISORY COMMITTEE ROSTER

Eugenia Eng, DrPH, MPH
Professor
Department of Health Behavior
Gillings School of Global Public Health
University of North Carolina
Chapel Hill, NC 27599-7440


Scott D. Rhodes, PhD, MPH
Professor
Department of Social Sciences and Health Policy
Division of Public Health Sciences
Wake Forest University Health Sciences
Winston-Salem, North Carolina


Jorge Alonzo, JD
Project Manager
Department of Social Sciences and Health Policy
Division of Public Health Sciences
Wake Forest University Health Sciences
Winston-Salem, North Carolina


Stacy Duck, BS
Executive Director
Alliance of AIDS Services-Carolina
Raleigh, North Carolina


Leonidas Salas Córdova, MA, MS
Member, LGBT Task Force, Duke University
Member, Southerners on New Ground
Facilitator, Durham Gender Alliance
Durham, North Carolina

**English Interview Guide**

## I. Opening questions
Where were you born?
How long have you lived in North Carolina?
Why did you decide to come to North Carolina?
Can you tell me, in general, what it's like to be an immigrant Latino in North Carolina?

## II. General stressors
What are the positive aspects of living in North Carolina?
- What makes life good here?

What are the negative aspects of living in North Carolina?
- What makes life hard here?

What makes your life stressful here in North Carolina?
How do you cope with these stressful conditions (and/or events)?

## III. Process of acculturation
Do you feel a part of the Latino community in [name of town in which participant resides]?
- What do you do to fit in, with other Latinos, for example?

Do you feel a part of the general community in [name of town in which participant resides]?
- What do you do to fit in with the larger community in [name of town in which participant resides]?

Do you feel part of the gay community where you live?
- What do you do to fit in with other Latino men who have sex with men?
- What do you do to fit in with other white or black American men who have sex with men?

## IV. Experiences of discrimination
Tell me about a time when you were discriminated against or treated unfairly because you're Latino.
- What was it like?
- Who was involved?
- How did it make you feel?
- What did you do in response to it?

Tell me about a time when you were discriminated against or treated unfairly because you have sex with men.
- What was it like?
- Who was involved?
- How did it make you feel?
- What did you do in response to it?

Think about your entire time here in North Carolina.  Are there any events of discrimination or unfair treatment that stand out in your mind?
- Describe it to me?
- How did you react to it?

**V. Coping strategies**
Can you tell me, in general, how you cope with negative, unfair, or stressful events?
Have you changed how you cope with negative, unfair, or stressful events since you arrived in North Carolina?

**VI. Social support**
Sometimes we need someone we can rely on when life is hard. We might need support, advice, or help. Whom would you say you turn to for support, advice, or help when you need it?
Tell me about a time when you had to get support from someone.
- Who was it?
- How did he/she help you?
- How did it turn out for you?

Who turns to you for support?
Tell me about a time when you provided support, advice, or help to someone else.
- Who was it?
- What was their need?
- What did you do for them?
- How did it turn out them?
- How did it turn out for you? What did your helping them mean to you?

Who has been the most supportive person for you during your time in North Carolina? I am asking about the person whom would you say has helped you the most since you came to North Carolina?
- How did they help you; what did they do for you?
- Do you still rely on them? in what ways?

**VII. Alcohol use**
[For those who drink alcohol]:
- Describe a typical occasion when you drink?
- Who do you drink with?
- Where do you drink?
- What happens when you drink?

[For those who do not drink alcohol]:
- Why have you chosen not to drink alcohol?

We've heard that some men turn to alcohol to cope with the stress of being an immigrant Latino man. What do you think of this?

**VIII. Closing questions**
What good things have happened to you since coming to North Carolina?
Is there anything else you think I should know?
Is there anything you'd like to ask me?

**IX. Interviewer Probes**
Tell me more about [comment].

What does that mean to you?
Anything else?


## X. AUDIT-C (answered separately on paper)

How often do you have a drink containing alcohol?
☐ Never
☐ Monthly or less
☐ 2-4 times a month
☐ 2-3 times a week
☐ 4 or more times a week


How many drinks containing alcohol do you have on a typical day when you are drinking?
☐ 1 or 2
☐ 3 or 4
☐ 5 or 6
☐ 7 to 9
☐ 10 or more


How often do you have 6 or more drinks on one occasion?
☐ Never
☐ Less than monthly
☐ Monthly
☐ Weekly
☐ Daily or almost daily

# Guía para la Entrevista

## I. Preguntas iniciales
¿Dónde naciste?
¿Cuántos años has vivido en Carolina del Norte?
¿Por qué decidiste venir a Carolina del Norte?
Dime, en general, ¿cómo es la vida de un inmigrante latino en Carolina del Norte?

## II.  Factores generales de estrés
¿Cuáles son los aspectos positivos que encuentras de vivir en Carolina del Norte?
- ¿Qué hace que la vida aquí sea buena?

¿Cuáles son los aspectos negativos que encuentras de vivir en Carolina del Norte?
- ¿Qué hace que la vida aquí sea dura o difícil?

¿Qué es lo que hace  que tu vida sea estresante en Carolina del Norte?
¿Cómo haces frente a estas situaciones (y/o eventos) estresantes?

## III. Proceso de aculturación
¿Sientes que eres parte  de la comunidad latina de [nombre de la ciudad donde reside el entrevistado]?
- ¿Qué haces para integrarte a otros latinos, por ejemplo?

¿Sientes que eres parte de la comunidad en general de [nombre de la ciudad donde reside el entrevistado]?
- ¿Qué haces para integrarte a la comunidad en general de [nombre de la ciudad donde reside el entrevistado]?

¿Sientes que eres parte de la comunidad gay de donde vives?
- ¿Qué haces para integrarte a los demás hombres latinos que tienen sexo con otros hombres?
- ¿Qué haces para integrarte a los demás hombres americanos blancos o morenos que tienen sexo con otros hombres?

## IV. Situaciones discriminatorias
Cuéntame de una situación donde te sentiste discriminado o donde te trataron injustamente por ser latino.
- ¿Cómo fue?
- ¿Quién(es) estuvo/estuvieron involucrado(s)?
- ¿Cómo te sentiste?
- ¿Qué hiciste para enfrentar tal situación?

Cuéntame de una situación donde te sentiste discriminado o donde te trataron injustamente por el hecho que tienes sexo con hombres.
- ¿Cómo fue?
- ¿Quién(es) estuvo/estuvieron involucrado(s)?
- ¿Cómo te sentiste?
- ¿Qué hiciste para enfrentar tal situación?

Ahora, piensa en todo el tiempo que has vivido en Carolina del Norte. ¿Te viene a la memoria alguna situación de discriminación o trato injusto?
- Descríbeme lo sucedido.

- ¿Cómo reaccionaste ante tal situación?

## V. Estrategias para hacer frente a problemas
En general, ¿cómo haces frente a situaciones negativas, injustas o de estrés?
Desde que llegaste a Carolina del Norte, ¿has cambiado cómo lidias con estas situaciones negativas, injustas o de estrés?

## VI. Apoyo social
A veces necesitamos contar con alguien en quien podamos confiar cuando la vida se nos pone difícil.  Tal vez necesitamos apoyo, un consejo o ayuda.  ¿A quién recurrirías para que te brindara apoyo, diera un consejo o ayuda?

Cuéntame de una situación donde hayas tenido que buscar apoyo de otra persona.
- ¿Quién fue esa persona?
- ¿Cómo te ayudó?
- ¿Cómo resultó todo?

¿Hay alguien que te busque a ti para recibir apoyo?
Cuéntame de una situación donde le brindaste apoyo, diste consejo o ayuda a otra persona.
- ¿Quién fue esa persona?
- ¿Qué tipo de apoyo necesitaba esa persona?
- ¿Qué hiciste por esa persona?
- ¿Cómo resultó todo?
- ¿Cuál fue el resultado para ti? ¿Qué significó para ti el poder ayudar a esa persona?

Durante el tiempo que has vivido en Carolina del Norte, ¿quién ha sido la persona que más apoyo o ayuda te ha brindado? Me refiero a la(s) persona(s) que consideras que te han ayudado más desde que llegaste a Carolina del Norte.
- ¿Cómo te ayudó? ¿Qué hizo por ti?
- ¿Todavía confías en esa persona? ¿De qué manera?

## VII. Consumo de bebidas alcohólicas
[Para las personas que consumen bebidas alcohólicas]:
- Describe una ocasión típica dónde consumes bebidas alcohólicas.
- ¿Con quién(es) bebes?
- ¿Dónde bebes?
- ¿Qué sucede cuando bebes?

[Para las personas que no consumen bebidas alcohólicas]:
- ¿Por qué has decidido no consumir bebidas alcohólicas?

Dicen  que algunos hombres consumen bebidas alcohólicas para lidiar con el estrés que tienen por ser inmigrantes latinos.  ¿Qué piensas de esto?

## VIII. Preguntas de cierre
Desde que viniste a Carolina del Norte, ¿qué cosas buenas/positivas te han ocurrido?
¿Hay algo más que creas que yo deba saber?
¿Hay algo que a ti te gustaría preguntarme?

### IX. Para que el entrevistador pueda indagar aun más

Dime más sobre [comentario].
¿Qué significa eso para ti?
¿Algo más?


### X. AUDIT-C (contestar por separado en papel)

¿Cada cuándo tomas una bebida que contiene alcohol?
☐ Nunca
☐ Cada mes o menos
☐ 2-4 veces al mes
☐ 2-3 veces por semana
☐ 4 veces o mas por semana


¿Cuántas bebidas que contienen alcohol tomas en un día típico cuando estás tomando?
☐ 1 o 2
☐ 3 o 4
☐ 5 o 6
☐ 7 a 9
☐ 10 o más


¿Cada cuándo tomas 6 bebidas o más en una ocasión?
☐ Nunca
☐ Menos de cada mes
☐ Cada mes
☐ Cada semana
☐ Diariamente o casi diariamente

**Key Informant Interview Guide**

1. What type of work do you do with immigrant Latino men who have sex with men (also known as MSM)?

2. How long have you worked with immigrant Latino MSM?

3. In general, what makes life hard here for Latinos?

4. In general, what makes life good here for Latinos?

5. Is there anything that makes life harder or better for Latino MSM because of their sexuality?

6. Based on your experiences, how do Latino MSM cope with stress?

7. Based on your experiences, what are the most important sources of social support for Latino MSM?

8. Some people have suggested that Latino MSM may turn to alcohol as a way to cope with stress. What do you think of this idea?

9. Based on your experiences, what are the unmet needs of Latino MSM?

10. Is there anything else you think I should know?

11. Is there anything you'd like to ask me?

12. Sometimes we invite people back for a second interview. We might have more questions that you could help answer, or we might ask your opinion of what we've learned in this study. Would you be willing to come back for another interview like this one?

**Guía para la entrevista de informantes claves**

1. ¿Qué tipo de trabajo haces con hombres inmigrantes Latinos que tienen sexo con hombres (también se dice HSH o MSM por su sigla en inglés)?

2. ¿Por cuánto tiempo has trabajado con la comunidad Latina inmigrante de HSH o MSM?

3. ¿Por lo general, qué hace que la vida sea difícil aquí para los Latinos?

4. ¿Por lo general, qué hace que la vida sea buena aquí para los Latinos?

5. ¿Hay algo que haga que la vida sea mas difícil o mejor para los Latinos HSH o MSM debido a su sexualidad?

6. ¿Basado en tus experiencias, los Latinos HSH o MSM cómo lidian con el estrés?

7. ¿Basado en tus experiencias, cuáles son las fuentes de apoyo social más importantes para los Latinos HSH o MSM?

8. Dicen que tal vez algunos Latinos HSH o MSM consuman bebidas alcohólicas para lidiar con el estrés. ¿Qué piensas de esto?

9. ¿Basado en tus experiencias, cuáles son las necesidades no cumplidas o insatisfechas de los Latinos HSH o MSM?

10. ¿Hay algo más que creas que yo deba saber?

11. ¿Hay algo que a ti te gustaría preguntarme?

12. A veces le pedimos a las personas una segunda entrevista. Es posible que tengamos más preguntas que tú podrías ayudarnos a contestar, o tal vez te pidamos tu opinión acerca de lo que hayamos aprendido en este estudio. ¿Estarías dispuesto a volver para otra entrevista como esta?

# APPENDIX C: HUMAN SUBJECTS PROTECTIONS

THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

**OFFICE OF HUMAN RESEARCH ETHICS**
Medical School Building 52
Mason Farm Road
CB #7097
Chapel Hill, NC 27599-7097
(919) 966-3113
Web site: ohre.unc.edu
Federalwide Assurance (FWA) #4801

**To**: Paul Gilbert
Health Behavior And Health Educ

**From**: Non-Biomedical IRB

**Approval Date**: 1/09/2013
**Expiration Date of Approval:** 1/07/2014

**RE**: Notice of IRB Approval by Full Board Review
**Submission Type**: Renewal
**Study #:** 11-0039

**Study Title**: An Interview Study of Social Stressors and Coping Strategies among Immigrant Latino Men Who Have Sex with Men (MSM)
**Sponsors**: National Institute on Alcohol Abuse and Alcoholism

This submission has been approved by the IRB for the period indicated.

**Study Description:**

Purpose: To understand the stressors experienced by immigrant Latino men who have sex with men (MSM) in NC (e.g. acculturation stress and experiences of discrimination). Participants: 25 individual interviews will be conducted with immigrant Latino MSM residing in central NC. Procedures: Using grounded theory methods, interview transcripts will be analyzed and a preliminary conceptual model will be developed of the coping strategies adopted in response to these stressors, with particular attention to the role of alcohol use.

**Regulatory and other findings:**

An IAA with Wake Forest University is on file for researcher, Dr. Scott Rhodes.

The Board agreed that this research involves no more than minimal risk and future reviews may be done on an expedited basis, under Expedited Review, Category 9.

**Investigator's Responsibilities:**

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

Your approved consent forms and other documents are available online at
http://apps.research.unc.edu/irb/irb_event.cfm?actn=info&irbid=11-0039.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Any unanticipated problem involving risks to subjects or others (including adverse events reportable under UNC-Chapel Hill policy) should be reported to the IRB using the web portal at http://irbis.unc.edu.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

CC: Geni Eng, Health Behavior And Health Educ

National Institutes of Health
National Institute on Alcohol Abuse & Alcoholism
5635 Fishers Lane, Room 3108, MSC 9304
Bethesda, Maryland 20892-9304

June 16, 2011

Paul Gilbert, MSPH
University of North Carolina of Chapel Hill
Department of Health Behavior and Health Education
302 Rosenau Hall, CB #7440
Chapel Hill, NC 27599

Dear Dr. Gilbert:

Enclosed is the Confidentiality Certificate protecting the identity of research subjects in your project entitled, "Interview Study of Social Stressors and Coping Strategies Among Immigrant Latino Men Who Have Sex With Men." Please note that the Certificate expires on June 16, 2016. We have provided one more year of Certificate coverage than you requested since many studies take longer to complete than initially projected. Providing an extra year ensures coverage for subjects and may spare you the need to formally submit a request for an extension.

Please be sure that the consent form given to research participants accurately states the intended uses of personally identifiable information (including matters subject to reporting) and the confidentiality protections, including the protection provided by the Certificate of Confidentiality with its limits and exceptions.

If you determine that the research project will not be completed by the expiration date, June 16, 2016, you must submit a written request for an extension of the Certificate three months prior to the expiration date. If you make any changes to the protocol for this study, you should contact me regarding modification of this Certificate. Any requests for modifications of this Certificate must include the reason for the request, documentation of the most recent IRB approval, and the expected date for completion of the research project.

Please advise me of any situation in which the certificate is employed to resist disclosure of information in legal proceedings. Should attorneys for the project wish to discuss the use of the certificate, they may contact the Office of the NIH Legal Advisor, National Institutes of Health, at (301) 496-6043.

Correspondence should be sent to Isabel Ellis, Confidentiality Certificate Coordinator, Office of Science Policy and Communications, National Institute on Alcohol Abuse and Alcoholism/NIH, 5635 Fishers Lane, Room 3111, Rockville, MD 20852; 301-443-8771, Fax 301-480-1726; iellis1@mail.nih.gov.

Sincerely,

Isabel Ellis, MSW
Confidentiality Certificate Coordinator

Enclosure
cc:
Barbara Entwisle
Vice Chancellor for Research and Economic Development
UNC Office of Sponsored Research

# CONFIDENTIALITY CERTIFICATE

## Number: AA-028-2011

### Issued to

### the University of North Carolina of Chapel Hill
### Department of Health Behavior and Health Education

### conducting research known as

### Interview Study of Social Stressors and Coping Strategies Among Immigrant Latino Men Who Have Sex With Men

### F31 AA020432

In accordance with the provisions of section 301(d) of the Public Health Service Act 42 U.S.C. 241(d), this Certificate is issued in response to the request of the Principal Investigator, Paul Gilbert, MSPH, to protect the privacy of research subjects by withholding their identities from all persons not connected with this research. Dr. Gilbert is primarily responsible for the conduct of this research, which is supported by the National Institute on Alcohol Abuse and Alcoholism.

Under the authority vested in the Secretary of Health and Human Services by section 301(d), all persons who:

1. are enrolled in, employed by, or associated with the University of North Carolina of Chapel Hill Department of Health Behavior and Health Education and its contractors or cooperating agencies and

2. have in the course of their employment or association access to information that would identify individuals who are the subjects of the research pertaining to the project known as "Interview Study of Social Stressors and Coping Strategies Among Immigrant Latino Men Who Have Sex With Men,"

are hereby authorized to protect the privacy of the individuals who are the subjects of that research by withholding their names and other identifying characteristics from all persons not connected with the conduct of that research.

The purpose of the study is to learn about the various forms of stress that immigrant Latino men who have sex with men (MSM) face in North Carolina and how they cope with stress, especially the role of drinking alcohol.

A Certificate of Confidentiality is needed because potentially illegal or sensitive use of addictive substances or other sensitive information will be collected during the course of the study. The Certificate will help researchers avoid involuntary disclosure that could expose subjects or their families to adverse economic, legal, psychological and social consequences.

Measures to be taken to protect confidentiality include confidentiality training for research staff, restricted access to study records, use of codes instead of recognizable names, publication only of grouped data, and other steps to protect privacy.
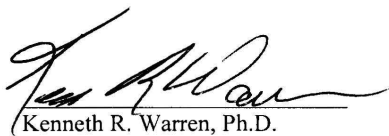
Beginning date for this research: June 17, 2011. The research is expected to end on June 16, 2016.

As provided in section 301 (d) of the Public Health Service Act 42 U.S.C. 241(d):

"Persons so authorized to protect the privacy of such individuals may not be compelled in any Federal, State, or local civil, criminal, administrative, legislative, or other proceedings to identify such individuals."

This Certificate does not protect you from being compelled to make disclosures that: (1) have been consented to in writing by the research subject or the subject's legally authorized representative; (2) are required by the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.) or regulations issued under that Act; or (3) have been requested from a research project funded by NIH or DHHS by authorized representatives of those agencies for the purpose of audit or program review.

This Certificate does not represent an endorsement of the research project by the Department of Health and Human Services. This Certificate is now in effect and will expire on June 16, 2016. The protection afforded by this Confidentiality Certificate is permanent with respect to subjects who participate in the research during the time the Certificate is in effect.


Kenneth R. Warren, Ph.D.
Acting Director
National Institute on Alcohol Abuse and Alcoholism

June 16, 2011
Date

OFFICE OF HUMAN RESEARCH ETHICS
Medical School Building 52
Mason Farm Road
CB #7097
Chapel Hill, NC 27599-7097
(919) 966-3113
Web site: ohre.unc.edu
Federalwide Assurance (FWA) #4801

THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

**To**: Paul Gilbert
Graduate School
CB:7440

**From**: Public Health-Nursing IRB

**Date**: 12/06/2010

**RE**: Determination that Research or Research-Like Activity does not require IRB Approval
**Study #:** 10-2159

**Study Title**: Social Stressors and Alcohol Use among Immigrant Latino Men Who Have Sex with Men (MSM)

This submission was reviewed by the above-referenced IRB. The IRB has determined that this submission does not constitute human subjects research as defined under federal regulations [45 CFR 46.102 (d or f) and 21 CFR 56.102(c)(e)(l)] and does not require IRB approval.

**Study Description:**

Purpose: The proposed study will investigate alcohol, consumption among immigrant Latino men who have sex with men (MSM) in central NC, a vulnerable population about whom little is known. Participants: 190. Procedures: Secondary data analysis.

If your study protocol changes in such a way that this determination will no longer apply, you should contact the above IRB before making the changes.

CC:
Geni Eng, Health Behavior And Health Educ

**APPENDIX D: QUALITATIVE STUDY CODE BOOK**

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|-----------|-------------------|-------|
| Coming out | Discovery or involuntary disclosure | Applied to text that describes moments when one's sexual orientation is discovered by other people, or when one is forced to disclose it. | Eso fue un accidente que pasó...me cacharon hablando por teléfono...yo nunca les dije, ellos me escucharon a mí. Así pasó. | Only a small number of coming out experiences have been against the participant's will. As with voluntary disclosure, watch how this may be a type of stressor or a key turning point in a life trajectory. |
| Coming out | Other coming out experiences | Identifies any other discussion of coming out; it includes descriptions of friends' experiences. | It's interesting that we are doing this [interview] right now 'cause last Friday, my young cousin came out to me as a bisexual man. | Occasionally participants related another person's coming out experiences to illustrate a point or to make a contrast from their own experiences. |
| Coming out | Voluntary disclosure | Describes the act of disclosing one's sexual orientation to another person; includes reactions to the disclosure. | Mi mamá tuvo...como se dice...ella no dijo nada cuando yo le dije mi sexualidad. Bueno primero sí fue como algo impactante pero ya después ya no. | Nearly every participant has mentioned at least one coming out experience, usually without a direct question. It often emerges in response to questions about stressors or how life in the US is different from life in the home country. Watch how this may be a type of stressor or a key turning point in a life trajectory |
| Community | American community | Describes the local American community, presents impressions of it, or indicates the participant's perceived place in it (e.g., feels like a member or outsider). | You get used to it. I mean, you get used to the way you live here and you feel comfortable here in this country because I grew up here and I feel comfortable here and I like it here. | This may illustrate an aspect of migration-related strain, the difficulty of fitting in or finding a place in the dominant US society. |

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|------------|--------------------|-------|
| Community | Gay community | Describes the local gay community (any race/ethnicity), presents impressions of it, or indicates the participant's perceived place in it (e.g., feels like a member or outsider). | Sí hay comunidad gay... pero no sé...todos están muy divididos en grupos. O sea como que son grupos todos divididos. Y más que nada ahora si cuando tú vas a la disco...bueno, yo pienso que todas las comunidades son iguales, pero yo veo la comunidad gay que solamente cuando tu vas en grupitos, los grupitos se mantienen juntos. | The gay community might act as a source of support because that's where participants could find friends.  It might also be a source of stress, particularly if there is racism, discrimination, or exclusion because of ethnicity. |
| Community | Latino community | Describes the local Latino community, presents impressions of it, or indicates the participant's perceived place in it (e.g., feels like a member or outsider). | [Es] una comunidad que no está bien...como es la palabra...no está bien elaborada, bien hecha, porque las personas que deben de ser la dirigentes no están, solamente sirven como colaboradores, no como una persona dirigente. | I've noticed that frequent comments describing the local community appear throughout most transcripts without prompting.  Men will often provide descriptions as a way to relay the context of another event or story. |
| Coping | Active Coping | Applied to text that reflects efforts to engage with a stressors or respond to a problem or challenge | Right now, I am trying to get my GED done. That helps a little….It helps a little because you are thinking about, that you are going to learn something new. And that's exciting for me. | May capture coping strategies that include other people, like going out with friends. It is the opposite of passive coping. |
| Coping | Passive Coping | Applied to text that reflects doing nothing or not reacting when faced with a challenge, stressor, or problem. | ¿Cómo lidio con el estrés? No sé, no encuentro forma de lidiar con el estrés. Porque cuando te da estrés, pues te da estrés. | Often reflects solitary acts. I wonder if it caputres a sense of fatalism.  It might also reflect a dogged determination to carry on. |

| Family | Code | Definition | Illustrative quote | Notes |
|---|---|---|---|---|
| Coping | Relaxing | Applied to text that describes actions taken to relax or unwind. | Para descansar...pues lo que hago...Lo único que hago es apagar mi teléfono y acostarme en mi cama y descansar. Eso es lo único que hago. | This often came up because I asked participants, "¿qué haces para descansar?" I wanted to elicit more information about possible behaviors. |
| Coping | Salir adelante | In-vivo code. Identifies text segments where participants used this particular phrase. | He tenido que quedarme en la calle, en Nueva York, sin dinero, sin comida, sin amigos, sin ayuda. Y solo he tenido que salir adelante. | I was struck by several participants' use of these specific words and wonder what they mean. I have a hunch that they might relate to coping. The phrase was used 4 times by Gerardo, 2 times by Fernando, and 1 time by Alfonso. |
| Drinking | Alcoholics Anonymous | Applied to text related to the group Alcoholics Anonymous; describes personal experiences with AA | Ahora que yo cuento esas cosas dentro de Alcohólicos Anónimos, yo puedo ver todas esas cosas que yo sabían que estaban mal. | Only two participants discussed AA. |
| Drinking | Bars, nightclubs, & other drinking locations | Applied to descriptions of venues where drinking occurs | En Greensboro, es el único lugar...bueno, hay un bar, pero...es más que nada muy americanizado ese lugar. Y aquí la disco es la única discoteca que hay aquí...los Latinos que vivimos aquí pues es adonde... | Look for overlap with "as social behavior" |
| Drinking | Coping behavior | Describes drinking to feel better, to aleviate stress, or to avoid problems. It identifies a specific aspect of drinking. | Sí. Yo lo hacía, yo bebía porque sentía solo, extrañaba mi familia. | This code reflects the central hypothesis of the QUAN study (some men turn to drinking as a coping response to stressors) |

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|-----------|-------------------|-------|
| Drinking | Describing own behavior | Identifies text where the participant talks about his own alcohol use, including contrasting current behavior with past behavior | Ahorita, te voy a decir una cosa...desde que me pasó ese problema rara la vez que yo tomo bebidas con alcohol. Casi siempre lo que acostumbro a tomar es O'Doul's...sabe a cerveza pero no tiene alcohol.... | This code was originally "changing own behavior" because so many participants talked about how their drinking has changed, but it didn't seem to capture the full nature of the discussion about their drinking so it was expanded. |
| Drinking | Discouragement or consequences | Identifies factors that dissuade drinking and text that explains the decision not to drink. | Me aburrí y también pues…tengo un problema también. Tengo diabetes tipo dos. Entonces yo no puedo tomar alcohol. | Generally captures things that are negatively associated with drinking. Watch how this relates to social support and religion. |
| Drinking | Family members' drinking | Applied to text that describes drinking behavior of family members. | En la casa, en mi casa, ha sido uno de los lugares donde nunca te llamaron la atención por tomarte una cerveza o por fumarte un cigarro desde pequeño porque…siempre y cuando no lo hicieras siempre, todos los días. O sea que con moderación que en la casa lo hicimos. | May capture family norms about drinking. |
| Drinking | First drink | Describes participants' first time drinking a whole drink, not just sips or tastes. | Ellos compraron unas cervezas y me dieron la cerveza. Y yo les [dije] que yo no tomaba, que yo nunca había tomado. Entonces vinieron y me dijeron, 'No, pero toma un poquito' y me la sirvieron en un vaso. | The interviewer often used a direct question about the participant's first time drinking alcohol to get a better understanding of drinking history and any changes. |

| Family | Code | Definition | Illustrative quote | Notes |
|---|---|---|---|---|
| Drinking | Friends' drinking | Applied to text that describes drinking behavior of friends and acquaintances. | Pero, también por otro lado, yo he tenido amigos que cada fin de semana toman. Y no son tan adultos...personas de 20, 21 años. | May capture current social norms about drinking. |
| Drinking | Motivations or rewards | Identifies factors that encourage drinking and text that explains the benefits or positive aspects of drinking | You see other people doing it and it's a way to get along with them and like...have more of a good time. If you drink, like he said, it loosens you up...you get more into the dance, you dance more, you talk more with other people, and all that stuff. | Generally captures things that are positively associated with drinking. |
| Drinking | National context | Applied to text that describes drinking in a particular country (e.g., Mexico); also captures statements that contrast drinking in home country against drinking in US | Yo pienso que es lo que hace la diversión para los mexicanos. Pero si por ejemplo, cuando hacen fiestas del pueblo o fiestas de la ciudad, siempre tienen alcohol. Siempre, siempre, siempre hay alcohol...y música banda. | Nearly all applications of this code were about aspects of drinking in the country of origin, or contrasts between drinking in the US and the country of origin. |
| Drinking | Social behavior | Describes drinking as a social activity that happens with other people.  It identifies a specific aspect of drinking. | O vamos a una fiesta y para ambientarte y pasártela mejor te echas unas cervezas. | This includes occasions of "fiesta" drinking, dancing and drinking, or celebrations that involve drinking. It may be related to other codes, like "friends' drinking" and "bars, nightclubs, and other drinking locations" |

| Family | Code | Definition | Illustrative quote | Notes |
|---|---|---|---|---|
| Family | Being rejected | Applied to text that describes actual incidents of rejection by family, not just fear of rejection or anticipated negative reactions | Cuando yo llegué, mi papá dijo que porque yo estaba con esa persona...Y fue y me pegó y me dijo que me [quería] fuera de la casa y que no quería a una persona como yo dentro de la familia. | This was important because the family is such an important source of support and the coming out process is such a source of stress. |
| Family | Father | Applied to descriptions of the father's role in the family or the participant's relationship with his father. Participants may be speaking of their own personal experiences or generally about Latino families. | Fueron muchas cosas que vivimos con él que me tienen marcado. El es mi padre, yo lo quiero, yo lo amo, yo lo adoro porque yo tengo una cosa muy grande que agradecerle a él que es la vida porque gracias a él yo estoy aquí. Pero yo tenía el concepto de que ser padre era otra cosa muy diferente a el concepto que el nos dio de padre. | Fathers and mothers were often discussed together, particularly contrasting the participant's relationship with each one or their different reactions to coming out. |
| Family | Fearing rejection | Applied to text that describes anxiety or dread about possible rejection by family because of sexuality | La primera vez que yo tuve una relación con un hombre, yo llegue a la casa y yo sentía que mi mamá sabía y me miraba y yo sentía que ella sabía. Yo tenía miedo a que se entrara a pegarme o a correrme de la casa o decirle a mi papá y que él hiciera algo más peor conmigo. Y yo pensaba '¿Qué hago? ¿Qué hago?' | This may overlap with Stressor:Sexuality but it's a very particular context for stress about one's sexuality |

| Family | Code | Definition | Illustrative quote | Notes |
|---|---|---|---|---|
| Family | Finding acceptance | Applied to text that describes family members' acceptance or support of the participants' sexuality. | Their attitude has changed a lot. We can say 'gay' and Manny in the same sentence. | This seems to be a process that unfolds over time. What drives it? Does the pace of coming to terms vary among different family members? |
| Family | Maintaining ties | Applied to text that describes the actions taken by participants to maintain ties to family members; may also include description of the importance of such ties to family | Interviewer: ¿Y mantienes en contacto con tu familia en México? Respondent: Sí, por teléfono, por Facebook, fotos. Antes por Messenger y con la cámara, pero como ya no tienen internet ellos y yo no, no lo podemos hacer. | This may capture some concrete ways that *familismo* is expressed. |
| Family | Mother | Applied to descriptions of the mother's role in the family or the participant's relationship with his mother. Participants may be speaking of their own personal experiences or generally about Latino families. | Mi mamá tuvo...como se dice...ella no dijo nada cuando yo le dije mi sexualidad. Bueno primero sí fue como algo impactante pero ya después ya no. | Fathers and mothers were often discussed together, particularly contrasting the participant's relationship with each one or their different reactions to coming out. |
| Family | Moving away | Identifies text where participant talks about moving away from his family | Alrededor de 21 o 22 años cuando decidí irme y hacer mi vida y tener que decirle a mi familia que yo era gay y tomar la decisión de decírselos sin saber si me iban a aceptar o si no me iban aceptar. Decidí...me aceptaron pero también yo ya tenía mi decisión de irme y lo hice. | May be a type of coping strategy, particularly if coming out is very hard |

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|------------|--------------------|-------|
| Family | Siblings | Marks text that describes relationships with siblings or the role(s) of siblings in the family. | Tengo muy buena relación con todos mis hermanos pero tengo en especifico una hermana con la que siempre le he contado todas mis cosas y me ayuda. | When siblings are mentioned it's nearly always a sister who serves as a source of support. |
| Migration | Returning to country of origin | Marks text where the participant considers returning to country of origin | Yo prefiero mantenerme aquí. Porque en México hay muchos problemas. Yo no quiero regresar a México porque allá hay mucha droga. | This may express a desire to return home or frustration at inability to go back to country of origin. What does this mean for participants who migrated to the US as young children. Is there a sense of a home country to return to? |
| Process | Agreeing with interviewer | Process code: Short statements, such as "sí," or repetition of interviewer's words to indicate agreement with him. | PAUL: ¿Podría ser difícil para ella? PARTICIPANT: Sí. PAUL: ¿Y para ti también? PARTICIPANT: Mm-hm. | I've used this code to look for places in the conversation where I might have asked a closed-ended question or a leading question. Such statements are not informative and might indicate a poor quality interview. However, it might also capture places where I summarized the participant's statements and only sought confirmation from him. |
| Process | Asking for clarification | Process code: Identifies moments when participants asked for clarification before attempting to answer a question. | PAUL: Pero como no soy Latino, soy fuera de la comunidad, trato de entender mejor como es adentro de la comunidad o como es para los Latinos aquí. DAVID: ¿Cómo es? Explícame. | I've used this code to look for questions that were unclear. It might identify questions that were flawed, had comprehension problems, or did not result in useful information. It may also help to judge the quality of an interview. |

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|-----------|-------------------|-------|
| Process | Mixing languages | Identifies English words that a Spanish-speaking participant uses, or Spanish words that an English-speaking participant uses, during the interview. It is not applied to "gay" because that has achieved common use in Spanish. | Yo pienso que las familias americanas son más open minded que las Latinas. | This may indicate moments when the participant wants to make sure the interviewer understands (by using the interviewer's native language). Alternately, it might indicate moments when there is no suitable Spanish word to express something. |
| Process | Switching language | Among bilingual participants, this indicates the moment when the language of the interview changes. It is different from the insertion of one or a few words in a different language | Not as freely as it may be in Atlanta per se. La otra cosa es que en Atlanta está la transportación pública lo cual no es un obstáculo para nadie, la cual no existe aquí. | Note who initiates the switch, how, and whether it's related to any particular topic. |
| Religion | Religion at Individual Level | Applied to text that describes a participant's religious attitudes, beliefs, and practices, including changes over time (e.g., leaving the Church after coming out); may also capture links between individual religiosity and drinking | Yo comencé yendo a una iglesia evangélica y en una iglesia evangélica conocí al primer chico del que yo me enamoré. Entonces dejar la iglesia porque me sentí con sentimientos de culpa por que estaba en la iglesia y sabían que estaba con alguien...con otro hombre. | |
| Religion | Religion in Community | Applied to text that provides information about religious attitudes, beliefs, and practices in the local Latino community; may also include information about religious attitudes, beliefs, and practices in country of origin. | La mayoría de los Latinos son católicos. Aunque nunca vayan la iglesia (laughs), pero se consideran católicos…por costumbre.... Pero en realidad, tú no sabes qué es ser católico. | |

| Family | Code | Definition | Illustrative quote | Notes |
|---|---|---|---|---|
| Religion | Religion in Family | Applied to text that provides information about religious attitudes in a participant's family; may also capture links between family religious climate and family members' behavior (e.g., absence of alcohol from the home) | My parents had grown up in church. They were raised in church, but they don't participate in anything church-like and they didn't even raise us in church. | |
| Stressor | Being in the US | Applied to text that provides more details about a participant's status in the US (e.g., as a minority); may also capture effects of being undocumented or having one's papers. | Yo pienso que esto nos estresa mucho es no tener una licencia para manejar. ¿Entiendes? Y andar siempre con el miedo de que te va a parar el policía y esos rollos. Eso creo que muchos Latinos, eso nos estresa bastante | Functional limitation (like inability to get drivers license or social security number); systemic/structural racism (like police checkpoints) |
| Stressor | Boredom | Applied to text that expresses or signals boredom. | CARLOS: It's a repetitive thing, you know...you go to work, you go home, buy groceries. But during the weekend is when we go out into the larger cities. MATEO: I live here in Ramseur and pretty much the same, pretty much the same. A little boring, but it's peaceful. | I was inspired by Kurt Organista's work, which found that boredom was a frequent reason that day laborers drank. In the QUAN study, "boredom/for fun" was the most frequently endorsed reason for drinking (47% of respondents). |
| Stressor | English | Applied to text that describes specific difficulties or challenges from learning or using English. | Yo estuve yendo a programas de anger management, estuve en otro programa ...bueno ese de anger management no lo terminé porque era todo en inglés y me estresaba mucho. | |

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|-----------|--------------------|-------|
| Stressor: | Ethnicity | Describes Latino ethnicity as a source of stress, including experiences of discrimination. May also include counter-examples or occasions when participants deny that ethnicity is a source of stress | When I moved from Mexico to California, there was a sense of I don't belong here. People made sure to remind me that...I mean, you know, maybe not with bad intentions, but you know 'you are not from here. You have an accent, you don't speak English and all of these things.' It was apparent that I was different, right | |
| Stressor | Health | Applied to text that describes health problems or health concerns. | Estoy preocupándome de mi salud también. Me diagnosticaron pre-diabetes. Tengo high cholesterol y tengo que hacer ejercicio, todas esas cosas. Imagínese si no he cambiado. | It was not a frequent stressor. Diabetes was mentioned the most frequently when it did come up. Surprisingly, sexual health came up rarely. Is it not a priority? |
| Stressor | Migration to US | Decision to migrate; process of adapting; migration status (i.e., being undocumented) | Fue un cambio grandísimo. Y más que nada cuando me vine aquí a Estados Unidos, ya tener que cocinar, lavarte, plancharte, y todo... | |
| Stressor | Money | Identifies the ways that money or financial concerns are stressors (includes wages from job, bills, remittances to family, among others) | A veces hay dinero y a veces no hay dinero como para la comida o como para pagar la renta, para gas al carro...o sea como ¿Qué hago? Tengo trabajo, estoy trabajando. Pero así como se recibe el cheque, se va... | |

| Family | Code | Definition | Illustrative quote | Notes |
|---|---|---|---|---|
| Stressor | Relationships | Describes relationship that are a source of stress, or how relationships may be affected by others stressors | Tengo parte de mi familia en México y parte de mi familia aca en Oklahoma y en Chicago. Sí, es difícil estar tan lejos de la familia. | Do I need to distinguish between family relationships, friendships, and romantic relationships? |
| Stressor | Sexuality | Describes sexuality as a source of stress, including experiences of discrimination. May also include counter-examples or occasions when participants deny that sexuality is a source of stress | Hay Hispanos Latinos quienes sus familias les han dejado hablar porque decidieron salir del clóset o simplemente porque les dijeron 'Soy gay' sin saber exactamente lo que significa la palabra gay. Piensan lo peor de lo que es la palabra gay. | This is the most "grounded" code; it has been attached to the greatest number of quotations. |
| Stressor | Work | Applied to text that describes work conditions, duties, or other features of a job that act as a stressor | I have a career....I am a manicurist and I do waxing. And well you know...people just love coming to me. But there is not a day where I don't have to worry about money, but I also don't make that much because of the economy. | |
| Support | Providing support to others | Describes situations in which the participant provided social support to another person | There's a few guys that are younger than me that consider me their mentor and we talk about my experience and talk about what I have done and I kind of give them that...I don't know if advice, but experience that I've had so that they don't have to repeat it again. | |

| Family | Code | Definition | Illustrative quote | Notes |
|--------|------|-----------|-------------------|-------|
| Support | Seeking Support | Describes situations in which the participant explicity asked for or sought out support from another person | Hay cosas que pueda hacer solamente una persona que está legalmente en el país. Y que la verdad yo no puedo hacerlo, y es lo que yo no puedo hacer, y es lo que es un poco difícil para mi...tener que pedirle favores a otra persona. | It seems like there were few explicit description of asking for help. Did participants not want to tell me about needing/asking for help? Or did they avoid ever asking for help? |
| Support | Source(s) of support | Identifies people who provide support | Es mi mejor amiga, la que me acaba de dejar. Se llama Ana. Siento como si es mi hermana. A ella le confío todo. | |
| Support | Types of support | Identifies details of social support, i.e., what is helpful | Whereas my family, I have an uncle that offers to buy vehicles and helps them out and 'I'll get you a vehicle if you need one, but pay me back whenever you can.' As far as my parents and myself, at one point they were helping me out, but never expecting any payment back...you pay it whenever you can. | Do the types of support identified by participants correpsond to House's typology? |

**APPENDIX E: QUANTITATIVE STUDY MEASURES**

| Variable | Construct | Type | Percent Missing | Item/Sample Item | Cronbach's alpha | Source |
|---|---|---|---|---|---|---|
| Any alcohol consumption | Outcome | Dichotomous | 1% | "Have you drunk alcohol in the past 12 months?"<br>□ Yes<br>□ No | N/A | (Sobell & Sobell, 1995) |
| Frequency of alcohol consumption | Outcome | Nominal | 5% | "About how frequently?"<br>□ At least 1 time per week<br>□ At least 1 time per month but less than weekly<br>□ At least 1 time per year but less than monthly<br>□ None | N/A | (Sobell & Sobell, 1995) |
| Binge episodes | Outcome | Count | 14% | "Considering all types of alcoholic beverages, how many times during the past 30 days did you have 5 drinks or more on an occasion?" | N/A | (Room, 1991; Sobell & Sobell, 1995) |
| Age at migration | Explanatory variable | Dichotomous | 12% | Calculated based on self-reported age and years in US | N/A | -- |
| English use | Explanatory variable | Mean of 5 item scale (subset of Short Acculturation Scale for Hispanics) | 1: 0%<br>2: 3%<br>3:<1%<br>4: 10%<br>5: 2% | "In general, what language(s) do you read and speak?"<br>□ Only Spanish<br>□ More Spanish than English<br>□ Both equally<br>□ More English than Spanish<br>□ Only English<br>□ Other<br>□ Don't know | α=0.92 | (Marin, et al., 1987) |

| Variable | Construct | Type | Percent Missing | Item/Sample Item | Cronbach's alpha | Source |
|---|---|---|---|---|---|---|
| Years in US | Explanatory variable | Continuous | 15% | "How long have you lived in the US, total years and/or months?" | N/A | -- |
| Ethnic discrimination | Explanatory variable | 10 item scale | 1: 0%<br>2: 0%<br>3: 2%<br>4: 9%<br>5: 5%<br>6: 12%<br>7: 9%<br>8: 9%<br>9: 2%<br>10: 2% | "During your time in North Carolina, in your day-to-day life, how frequently have any of the following things happened to you because of your race [sic]: you were treated with less courtesy than others."<br>□ Never<br>□ Sometimes<br>□ Frequently<br>□ Very frequently<br>□ Don't know | α=0.95 | (Williams, et al., 1997) |
| Sexual orientation discrimination | Explanatory variable | 5 item scale (subset of 7 items) | 1:<1%<br>2:<1%<br>3:<1%<br>4: 1%<br>5: 1% | "During your time in North Carolina how common have the following been? You were verbally harassed for being gay/effeminate."<br>□ Never<br>□ Sometimes<br>□ Often<br>□ Always<br>□ Don't know | α=0.80 | (Díaz & Ayala, 2001) |
| Social comfort with gay men | Explanatory variable | 5 item scale (subset of RHS) | 1: 0%<br>2: 2%<br>3: 0%<br>4:1%<br>5:<1% | "Social situations with gay men make me feel uncomfortable"<br>□ 1=strongly disagree<br>□ 2<br>□ 3<br>□ 4<br>□ 5<br>□ 6<br>□ 7=Strongly agree | α=0.86 | (Ross & Rosser, 1996) |

| Variable | Construct | Type | Percent Missing | Item/Sample Item | Cronbach's alpha | Source |
|---|---|---|---|---|---|---|
| Internalized negative stereotypes | Explanatory variable | 4 item scale (subset of RHS) | 1: 0%<br>2: 0%<br>3:<1%<br>4: 0% | "I worry about becoming an old gay man"<br>□ 1=strongly disagree<br>□ 2<br>□ 3<br>□ 4<br>□ 5<br>□ 6<br>□ 7=Strongly agree | α=0.82 | Ross & Rosser, 1996) |
| Personal comfort with sexual orientation | Explanatory variable | 6 item scale (subset of RHS) | 1:<1%<br>2:<1%<br>3:0%<br>4: 2%<br>5:<1%<br>6: 1% | "I am comfortable about people finding out I am gay"<br>□ 1=strongly disagree<br>□ 2<br>□ 3<br>□ 4<br>□ 5<br>□ 6<br>□ 7=Strongly agree | α=0.76 | Ross & Rosser, 1996) |
| 00Social support | Moderator variable | 11 item scale (subset of ISSS) | 1:<1%<br>2: 1%<br>3: 1%<br>4: 2%<br>5: 0%<br>6: 2%<br>7:<1%<br>8: 2%<br>9:<1%<br>10:2%<br>11: 1% | "…Tell me if you know persons in NC or outside NC, with whom you are maintaining some form of regular contact, who would perform each helpful behavior. Listen and talk with you whenever you feel lonely or depressed."<br>□ No one would do this<br>□ Someone would do this<br>□ A few would do this<br>□ Several would do this<br>□ Many would do this | α=0.97 | (Ong & Ward, 2005) |

| Variable | Construct | Type | Percent Missing | Item/Sample Item | Cronbach's alpha | Source |
|---|---|---|---|---|---|---|
| Age | Descriptive variable | Continuous | 4% | "How old are you now?" | N/A | (Rhodes et al., 2011) |
| Country of origin | Descriptive variable | Nominal | 2% | "Where were you born?" | N/A | -- |
| Length of residence in North Carolina | Descriptive variable | Quantitative | 6% | "How long have you lived in NC, total years and/or months?" | N/A | (Rhodes, et al., 2012) |
| Educational attainment | Descriptive variable | Ordinal | 6% | "What is the highest level of education you reached?" □ Less than high school diploma or equivalent (GED) □ High school diploma or equivalent (GED) □ Some college □ 2-year college degree □ 4-year college degree □ Master's degree, professional degree, or more □ Don't know □ Refused to answer | N/A | (Rhodes, et al., 2012) |
| Employment status | Descriptive variable | Nominal | 2% | "What best describes your current employment status?" □ Employed year round □ Employed in seasonal work but not year round □ Retired □ Unemployed since arrived in US □ Unemployed seasonal worker □ Unemployed (but not 'd' or 'e' above) □ Disabled and not working □ Don't know | N/A | (Rhodes, et al., 2012) |

| Variable | Construct | Type | Percent Missing | Item/Sample Item | Cronbach's alpha | Source |
|---|---|---|---|---|---|---|
| Sexual identity | Descriptive variable | Nominal | 1% | "Which of the following terms do you think of yourself as?"<br>□ Heterosexual/straight<br>□ Gay/lesbian<br>□ Bisexual<br>□ Transgender<br>□ Other<br>□ Don't know/not sure | N/A | (Rhodes, Hergenrather, et al., 2007; Rhodes, Yee, & Hergenrather, 2006) |
| Transgender identity | Descriptive variable | Nominal | 2% | "What is your gender?<br>□ Male<br>□ Female<br>□ Transgender<br>□ Male to female<br>□ Female to male<br>□ Other<br>□ Don't know | N/A | (Rhodes, et al., 2012) |
| Relationship status | Descriptive variable | Nominal | 3% | "What is your current relationship status?<br>□ Single and not dating anyone special<br>□ Dating someone special but not monogamous<br>□ Dating someone special and monogamous<br>□ Partnered or married but not monogamous<br>□ Partnered or married and monogamous<br>□ Don't know | N/A | (Rhodes, et al., 2012) |

| Variable | Construct | Type | Percent Missing | Item/Sample Item | Cronbach's alpha | Source |
|----------|-----------|------|-----------------|------------------|------------------|--------|
| Reasons for consuming alcohol | Descriptive variable | Nominal | 5% | "What would you say is the most common reason you used it?" □ Enhance sex □ Bored/for fun □ Lose inhibitions □ Lonely/depressed □ Physical pain □ Other □ Don't know | N/A | (Rhodes, et al., 2006) |
| Latino MSM network size | Descriptive variable | Count | 0% | "How many Latino men do you know who have sex with other men, are over 18 years of age, and live in North Carolina?" | N/A | (Ramirez-Valles, et al., 2005) |

# References

Abraído-Lanza, A., Armbrister, A., Flórez, K., & Aguirre, A. (2006). Toward a theory-driven model of acculturation in public health research. *American Journal of Public Health, 96*(8), 1342-1346.

Abramovitz, D., Volz, E. M., Strathdee, S. A., Patterson, T. L., Vera, A., & Frost, S. D. (2009). Using respondent-driven sampling in a hidden population at risk of HIV infection: who do HIV-positive recruiters recruit? *Sexually Transmitted Diseases, 36*(12), 750-756.

Aguirre-Molina, M., & Caetano, R. (1994). Alcohol Use and Alcohol-Related Issues. In C. W. Molina & M. Aguirre-Molina (Eds.), *Latino Health in the US: A Growing Challenge* (pp. 393-424). Washington DC: American Public Health Association.

Aiken, L. S., & West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interactions*. Thousand Oaks CA: Sage.

Airhihenbuwa, C. O., & Obregon, R. (2000). A critical assessment of theories/models used in health communication for HIV/AIDS. *Journal of Health Communication, 5*, 5-15.

Ajrouch, K. J., Reisine, S., Lim, S., Sohn, W., & Ismail, A. (2010). Perceived everyday discrimination and psychological distress: does social support matter? *Ethnicity & Health, 15*(4), 417-434.

Akkerman, S., Admiraal, W., Brekelmans, M., & Oost, H. (2008). Auditing Quality of Research in Social Sciences. *Quality & Quantity*, 42(2), 257-274.

Alcoholics Anonymous World Services Inc. (2009). Twelve Steps and Twelve Traditions. Retrieved March 23, 2013, from http://www.aa.org/1212/.

Alise, M. A., & Teddlie, C. (2010). A continuation of the paradigm wars? Prevalence rates of methodological approaches across the social/behavioral sciences. *Journal of Mixed Methods Research, 4*(2), 103-126.

Alvarez, J., Jason, L. A., Olson, B. D., Ferrari, J. R., & Davis, M. I. (2007). Substance abuse prevalence and treatment among Latinos and Latinas. *Journal of Ethnicity in Substance Abuse, 6*(2), 115-141.

Alvarez, J., Olson, B. D., Jason, L. A., Davis, M. I., & Ferrari, J. R. (2004). Heterogeneity among Latinas and Latinos entering substance abuse treatment: findings from a national database. *Journal of Substance Abuse Treatment, 26*(4), 277-284.

Amadio, D.M. (2006). Internalized heterosexism, alcohol use, and alcohol-related problems among lesbians and gay men. *Addictive Behaviors*, 31(7), 1153-1162.

American Civil Liberties Union of North Carolina Legal Foundation & Immigration and Human Rights Policy Clinic. (2009). The Policies and Politics of Local Immigration Enforcement Laws: 287(g) Program in North Carolina. Retrieved March 3, 2013 from www.law.unc.edu/documents/clinicalprograms/287gexecutivesummary.pdf.

Aneshensel, C.S. (1992). Social stress: theory and research. *Annual Review of Sociology*, 18, 15-38.

Arbona, C., Olvera, N., Rodriguez, N., Hagan, J., Linares, A., & Wiesner, M. (2010). Acculturative stress among documented and undocumented Latino immigrants in the United States. *Hispanic Journal of Behavioral Sciences, 32*(3), 362-384.

Ayala, G. X., Baquero, B., & Klinger, S. (2008). A systematic review of the relationship between acculturation and diet among Latinos in the United States: Implications for future research. *Journal of the American Dietetic Association, 108*(8), 1330-1344.

Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Graham, K., Grube, J., Gruenewald, P., Hill, L., Holder, H., Homel, R., Österberg, E., Jürgen, R., Room, R., & Rossow, I. (2003). *Alcohol: No Ordinary Comodity; Research and Public Policy*. New York NY: Oxford University Press.

Bailey, R. (2005). New Immigrant Communities in the North Carolina Piedmont Triad: Integration Issues and Challenges. In E. M. Gozdziak & S. F. Martin (Eds.), *Beyond the Gateway: Immigrants in a Changing America* (pp. 57-85). Lanham MD: Lexington Books.

Balan, I. C., Carballo-Dieguez, A., Ventuneac, A., & Remien, R. H. (2009). Intentional condomless anal intercourse among Latino MSM who meet sexual partners on the internet. *AIDS Education and Prevention, 21*(1), 14-24.

Banks, K. H., Kohn-Wood, L. P., & Spencer, M. (2006). An examination of the African American experience of everyday discrimination and symptoms of psychological distress. *Community Mental Health Journal, 42*(6), 555-570.

Baranowski, T., Perry, C., & Parcel, G. (2002). How Individuals, Environments, and Health Behavior Interact. In K. Glanz, B. Rimer & F. Lewis (Eds.), *Health Behavior and Health Education: Theory, Research, and Practice*. San Francisco CA: Jossey-Bass.

Bauer, M., Gunter, B., Kizzire, J., Reynolds, S., Lanier, J., Cabell, M., Watson, R., Schwank, F. B., Maxcy, G., & Guido, V. (2009). *Under Siege: Life for Low-Income Latinos in the South*. Montgomery AL: Southern Poverty Law Center.

Bazeley, P. (2009). Integrating data analyses in mixed methods research. *Journal of Mixed Methods Research, 3*(3), 203-207.

Behling, O., & Law, K. S. (2000). *Translating Questionnaires and Other Research Instruments: Problems and Solutions*. London UK: Sage.

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine, 51*(6), 843-857.

Berry, J. W. (1980). Acculturation as Varieties of Adaptation. In A. Padilla (Ed.), *Acculturation: Theory, Models and Findings*. Boulder CO: Westview.

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology, 46*(1), 5-68.

Bimbi, D. S., Nanin, J. E., Parsons, J. T., Vicioso, K. J., Missildine, W., & Frost, D. M. (2006). Assessing gay and bisexual men's outcome expectancies for sexual risk under the influence of alcohol and drugs. *Substance Use & Misuse, 41*(5), 643-652.

Blomberg, R. D., Peck, R. C., Moskowitz, H., Burns, M., & Fiorentino, D. (2009). The Long Beach/Fort Lauderdale relative risk study. *Journal of Safety Research, 40*(4), 285-292.

Blythe, A. (2012). US Justice Department sues Alamance County sheriff, accusing him of discriminating against Latinos. *News and Observer.* Retrieved March 3, 2013 from www.newsobserver.com/2012/12/20/2557060/us-justice-department-sues-alamance.html.

Bobashev, G. V., Zule, W. A., Osilla, K. C., Kline, T. L., & Wechsberg, W. M. (2009). Transactional sex among men and women in the south at high risk for HIV and other STIs. *Journal of Urban Health, 86 Suppl 1*, 32-47.

Boffetta, P., & Hashibe, M. (2006). Alcohol and cancer. *Lancet Oncology, 7*(2), 149-156.

Bond, M., & Smith, P. (1996). Cross-cultural social and organizational psychology. *Annual Revue of Psychology, 47*, 205-235.

Borrell, L.N., Roux, A.V., Jacobs, D.R., Jr., Shea, S., Jackson, S.A., Shrager, S. & Blumenthal, R.S. (2010). Perceived racial/ethnic discrimination, smoking and alcohol consumption in the Multi-Ethnic Study of Atherosclerosis (MESA). *Preventive Medicine*, 51(3-4), 307-312.

Bowen, G. A. (2006). Grounded theory and sensitizing concepts. *International Journal of Qualitative Methods, 5*(3), 1-9.

Bradley, K. A., Debenedetti, A. F., Volk, R. J., Williams, E. C., Frank, D., & Kivlahan, D. R. (2007). AUDIT-C as a brief screen for alcohol misuse in primary care. *Alcoholism: Clinical and Experimental Research, 31*(7), 1208-1217.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(7), 513-531.

Bruce, D., Ramirez-Valles, J., & Campbell, R. T. (2008). Stigmatization, substance use, and sexual risk behavior among Latino gay and bisexual men and transgender persons. *Journal of Drug Issues, 38*(1), 235-260.

Bruce, D., Ramirez-Valles, J., & Campell, R. T. (2008). Stigmatization, substance use, and sexual risk behavior among Latino gay and bisexual men and transgender persons. *Journal of Drug Issues, 38*(1), 235-260.

Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research, 1*(1), 8.

Burgess, D. J., Ding, Y., Hargreaves, M., Van Ryn, M., & Phelan, S. (2008). The association between perceived discrimination and underutilization of needed medical and mental

health care in a multi-ethnic community sample. *Journal of Health Care for the Poor and Underserved, 19*(3), 894-911.

Bux, D. A. (1996). The epidemiology of problem drinking in gay men and lesbians: a critical review. *Clinical Psychology Review, 16*(4), 277-298.

Cabaj, R. P. (1996). Substance Abuse in Gay Men, Lesbians, and Bisexuals. In R. P. Cabaj & T. S. Stein (Eds.), *Textbook of Homosexuality and Mental Health* (pp. 783-800). Washington DC: American Psychiatric Press.

Cabassa, L. (2003). Measuring acculturation: where we are and where we need to go. *Hispanic Journal of Behavioral Sciences, 25*(2), 127-146.

Caetano, R. (1987). Acculturation and drinking patterns among United States Hispanics. *British Journal of Addiction, 82*(7), 789-799.

Caetano, R. (1990). Hispanic drinking in the US: thinking in new directions. *British Journal of Addiction, 85*(10), 1231-1236.

Caetano, R. (2003). Alcohol-related health disparities and treatment-related epidemiological findings among whites, blacks, and Hispanics in the United States. *Alcoholism: Clinical and Experimental Research, 27*(8), 1337-1339.

Caetano, R., Clark, C. L., & Tam, T. (1998). Alcohol consumption among racial/ethnic minorities: theory and research. *Alcohol Health and Research World, 22*(4), 233-241.

Caetano, R., & Galvan, F. H. (2001). Alcohol Use and Alcohol-Related Problems among Latinos in the United States. In M. Aguirre-Molina, C. W. Molina & R. E. Zambrana (Eds.), *Health Issues in the Latino Community* (pp. 383-412). San Francisco CA: Jossey-Bass.

Caetano, R., Schafer, J., & Cunradi, C. B. (2001). Alcohol-related intimate partner violence among white, black, and Hispanic couples in the United States. *Alcohol Research & Health, 25*(1), 58-65.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*(2), 81-105.

Caplan, S. (2007). Latinos, acculturation, and acculturative stress: a dimensional concept analysis. *Policy, Politics, & Nursing Practice, 8*(2), 93-106.

Cappell, H., & Herman, C. P. (1972). Alcohol and tension reduction-review. *Quarterly Journal of Studies on Alcohol, 33*(1), 33-&.

Carballo-Dieguez, A., Balan, I., Dolezal, C., & Mello, M. B. (2012). Recalled Sexual Experiences in Childhood with Older Partners: A Study of Brazilian Men Who Have Sex with Men and Male-to-Female Transgender Persons. *Archives of Sexual Behavior, 41*(2), 363-376.

Carlos, J. A., Bingham, T. A., Stueve, A., Lauby, J., Ayala, G., Millett, G. A., & Wheeler, D. (2010). The role of peer support on condom use among black and Latino MSM in three urban areas. *AIDS Education and Prevention, 22*(5), 430-444.

Cassel, J. (1976). The contribution of the social environment to host resistance: the Fourth Wade Hampton Frost Lecture. *American Journal of Epidemiology, 104*(2), 107-123.

Cassidy, C., O'Connor, R. C., Howe, C., & Warden, D. (2004). Perceived discrimination and psychological distress: The role of personal and ethnic self-esteem. *Journal of Counseling Psychology, 51*(3), 329-339.

Cassidy, T. (1999). *Stress, Cognition and Health*. New York NY: Routledge.

Census Advisory Committees. (2004). *Language Translation of Data Collection Instruments and Supporting Materials*. Retrieved June 17, 2011, from http://www.census.gov/cac/2010_census_advisory_committee/language_translation_ guidelines.html.

Census Bureau. (2011a). 2007-2009 American Community Survey 3-Year Estimates. Retrieved November 11, 2011, from http://factfinder.census.gov/home/en/acs_pums_2009_3yr.html.

Census Bureau. (2011b). *The Hispanic Population: 2010*. Retrieved March 3, 2013 from http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf.

Census Bureau. (2011c). State and County Quick Facts.   Retrieved June 17, 2011, from http://quickfacts.census.gov/qfd/index.html.

Census Bureau. (2013). State and County Quick Facts.   Retrieved March 6, 2013, from http://quickfacts.census.gov/qfd/states/37000.html.

Centers for Disease Control and Prevention. (2011). *Strategic Plan, Division of HIV/AIDS Prevention, 2011 through 2015*. Atlanta GA: Centers for Disease Control and Prevention.

Charmaz, K. (2002). Qualitative Interviewing and Grounded Theory Analysis. In J. F. Gubrium & J. A. Holstein (Eds.), *Handbook of Interview Research: Context and Method* (pp. 675-694). Thousand Oaks CA: Sage.

Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Methods*. Thousand Oaks CA: Sage.

Clark, L., & Hafsess, L. (1998). Acculturation. In S. Loue (Ed.), *Handbook of Immigrant Health* (pp. 37-59). New York NY: Plenum Press.

Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans. A biopsychosocial model. *American Psychologist, 54*(10), 805-816.

Cochran, S. D., Mays, V. M., Alegria, M., Ortega, A. N., & Takeuchi, D. (2007). Mental health and substance use disorders among Latino and Asian American lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology, 75*(5), 785-794.

Cohen, S., Evans, G. W., Stokols, D., & Krantz, D. S. (1986). *Behavior, Health, and Environmental Stress*. New York NY: Plenum Press.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310-357.

Conger, J. (1956). Alcoholism: theory, problem and challenge II. *Quarterly Journal of Studies on Alcohol, 17*(2), 296-305.

Corbin, J., & Strauss, A. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Los Angeles CA: Sage Publications.

Cornelius, W. A. (2002). Ambivalent Reception: Mass Public Responses to the "New" Latino Immigration to the United States. In M. M. Suárez-Orozco & M. M. Páez (Eds.), *Latinos: Remaking America* (pp. 165-189). Berkeley CA: University of California Press.

Cresswell, J. (1998). *Qualitative Inquiry and Research Design: Choosing among Five Traditions*. Thousand Oaks CA: Sage.

Creswell, J. W. (2010). Mapping the Developing Landscape of Mixed Methods Reseaerch. In A. Tashakkori & C. Teddlie (Eds.), *Sage Handbook of Mixed Methods in Social and Behavioral Research* (pp. 45-68). Los Angeles CA: Sage.

Crimmins, E. M., Soldo, B. J., Kim, J. K., & Alley, D. E. (2005). Using anthropometric indicators for Mexicans in the United States and Mexico to understand the selection of migrants and the "Hispanic paradox". *Social Biology, 52*(3-4), 164-177.

De Santis, J. P., Layerla, D. M., Barroso, S., Gattamorta, K. A., Sanchez, M., & Prado, G. J. (2012). Predictors of Eating Attitudes and Behaviors Among Gay Hispanic Men. *Archives of Psychiatric Nursing, 26*(2), 111-126.

Deiss, R. G., Brouwer, K. C., Loza, O., Lozada, R. M., Ramos, R., Cruz, M. A., Patterson, T. L., Heckathorn, D. D., Frost, S. D., & Strathdee, S. A. (2008). High-risk sexual and drug using behaviors among male injection drug users who have sex with men in 2 Mexico-US border cities. *Sexually Transmitted Diseases, 35*(3), 243-249.

Del Boca, F. K., & Darkes, J. (2003). The validity of self-reports of alcohol consumption: state of the science and challenges for research. *Addiction, 98*, 1-12.

Dey, I. (2007). Grounding Categories. In A. Bryant & Charmaz, K. (Eds.), *The Sage Handbook of Grounded Theory*. Thousand Oaks CA: Sage.

Di Castelnuovo, A., Costanzo, S., Donati, M. B., Iacoviello, L., & De Gaetano, G. (2010). Prevention of cardiovascular risk by moderate alcohol consumption: epidemiologic evidence and plausible mechanisms. *Internal and Emergency Medicine, 5*(4), 291-297.

Díaz, R. M., & Ayala, G. (2001). *Social Discrimination and Health: The Case of Latino Gay Men and HIV Risk*. Washington DC: The Policy Institute of the National Gay and Lesbian Task Force.

Díaz, R. M., Stall, R. D., Hoff, C., Daigle, D., & Coates, T. J. (1996). HIV risk among Latino gay men in the Southwestern United States. *AIDS Education and Prevention, 8*(5), 415-429.

Díaz-Guerrero, R. (1967). *Psychology of the Mexican: Culture and Personality*, Austin TX: University of Texas Press.

Diplacido, J. (1998). Minority Stress among Lesbians, Gay Men, and Bisexuals: A Consequence of Heterosexism, Homophobia, and Stigmatization. In G. M. Herek (Ed.), *Stigma and Sexual Orientation: Understanding Prejudice against Lesbians, Gay Men, and Bisexuals*. Thousand Oaks CA: Sage.

Dockterman, D., & Velasco, G. (2010). *Statistical Portrait of Hispanics in the United States, 2008*. Washington DC: Pew Hispanic Center.

Douglas, M. (1987). *Constructive Drinking: Perspectives on Drink from Anthropology*. New York NY: Cambridge University Press.

Dovidio, J. F., Gluszek, A., John, M. S., Ditlmann, R., & Lagunes, P. (2010). Understanding Bias toward Latinos: Discrimination, Dimensions of Difference, and Experience of Exclusion. *Journal of Social Issues, 66*(1), 59-78.

Drabble, L., Midanik, L. T., & Trocki, K. (2005). Reports of alcohol consumption and alcohol-related problems among homosexual, bisexual and heterosexual respondents: results from the 2000 National Alcohol Survey. *Journal of Studies on Alcohol, 66*(1), 111-120.

Elder, J. P., Ayala, G. X., Parra-Medina, D., & Talavera, G. A. (2009). Health Communication in the Latino Community: Issues and Approaches *Annual Review of Public Health* (Vol. 30, pp. 227-251).

Ennis, S. R., Rios-Vargas, M., & Albert, N. G. (2011). *The Hispanic Population: 2010*. Washington DC: Census Bureau.

Erzberger, C., & Kelle, U. (2003). Making Inferences in Mixed Methods: The Rules of Integration. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social & Behavioral Research*. Thousand Oaks CA: Sage Publications.

Essed, P. (1991). *Understanding Everyday Racism: An Interdisciplinary Theory*. Newbury Park CA: Sage.

Farley, T. A. (2006). Sexually transmitted diseases in the Southeastern United States: location, race, and social context. *Sexually Transmitted Diseases, 33*(7 Suppl), S58-64.

Feilzer, M. (2009). Doing mixed methods research pragmatically: implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research, 4*(1), 6-16.

Fekete, E. M., Antoni, M. H., Lopez, C. R., Duran, R. E., Penedo, F. J., Bandiera, F. C., Fletcher, M. A., Klimas, N., Kumar, M., & Schneiderman, N. (2009). Men's serostatus disclosure to parents: Associations among social support, ethnicity, and disease status in men living with HIV. *Brain Behavior and Immunity, 23*(5), 693-699.

Frank, D., Debenedetti, A. F., Volk, R. J., Williams, E. C., Kivlahan, D. R., & Bradley, K. A. (2008). Effectiveness of the AUDIT-C as a screening test for alcohol misuse in three race/ethnic groups. *Journal of General Internal Medicine, 23*(6), 781-787.

Franzini, L., Ribble, J. C., & Keddie, A. M. (2001). Understanding the Hispanic paradox. *Ethnicity & Disease, 11*(3), 496-518.

Frey, W. H. (2006). *Diversity Spreads Out: Metropolitan Shifts in Hispanic, Asian, and Black Populations since 2000*. Washington DC: The Brookings Institution.

Friedman, E. M., Williams, D. R., Singer, B. H., & Ryff, C. D. (2009). Chronic discrimination predicts higher circulating levels of E-selectin in a national sample: the MIDUS study. *Brain, Behavior, and Immunity, 23*(5), 684-692.

Gallo, L. C., Penedo, F. J., De Los Monteros, K. E., & Arguelles, W. (2009). Resiliency in the Face of Disadvantage: Do Hispanic Cultural Characteristics Protect Health Outcomes? *Journal of Personality, 77*(6), 1707-1746.

Galvan, F. H., & Caetano, R. (2003). Alcohol use and related problems among ethnic minorities in the United States. *Alcohol Research & Health, 27*(1), 87-94.

Ganster, D. C., & Victor, B. (1988). The impact of social support on mental and physical health. *British Journal of Medical Psychology, 61 ( Pt 1)*, 17-36.

Garcia, V. (2008). Problem Drinking among transnational mexican migrants: Exploring migrant Status and Situational Factors. *Human Organization, 67*(1), 12-24.

Garfein, R. S., Lozada, R., Liu, L., Laniado-Laborin, R., Rodwell, T. C., Deiss, R., Alvelais, J., Catanzaro, A., Chiles, P. G., & Strathdee, S. A. (2009). High prevalence of latent tuberculosis infection among injection drug users in Tijuana, Mexico. *International Journal of Tuberculosis and Lung Disease, 13*(5), 626-632.

Gee, G. C., Spencer, M. S., Chen, J., & Takeuchi, D. (2007). A nationwide study of discrimination and chronic health conditions among Asian Americans. *American Journal of Public Health, 97*(7), 1275-1282.

Gerson, E. M. (1991). Supplementing Grounded Theory. In D. R. Maines (Ed.), *Social Organization and Social Process* (pp. 285-301). Hawthorne NY: Aldine DeGruyter.

Gibbs, G. (2007). Analyzing Biographies and Narratives *Analyzing Qualitative Data* (pp. 56-72). Thousand Oaks CA: Sage.

Gibbs, G. (2007). *Analyzing Qualitative Data*. Thousand Oaks CA: Sage.

Gilbert, P., & Rhodes, S. (2012a). Immigrant sexual minority Latino men in rural North Carolina: an exploration of social context, social behaviors, and sexual outcomes. *Journal of Homosexuality, In press*.

Gilbert, P., & Rhodes, S. (2012b). Psychometric performance of a novel measure of social support among Spanish-speaking immigrant Latino gay men. *Hispanic Journal of Behavioral Sciences, 34*(3), 491-504.

Gill, H. (2010). *The Latino Migration Experience in North Carolina: New Roots in the Old North State*. Chapel Hill NC: University of North Carolina Press.

Gilman, S. E., Cochran, S. D., Mays, V. M., Hughes, M., Ostrow, D., & Kessler, R. C. (2001). Risk of psychiatric disorders among individuals reporting same-sex sexual partners in the National Comorbidity Survey. *American Journal of Public Health, 91*(6), 933-939.

Glanz, K., & Schwartz, M. D. (2008). Stress, Coping, and Health Behavior. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health Behavior and Health Education: Theory, Research, and Practice*. San Francisco CA: Jossey-Bass.

Glaser, B. G. (1992). *Basics of Grounded Theory Analysis: Emergence vs. Forcing*. Mill Valley CA: Sociology Press.

Glaser, B. G., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago IL: Aldine Publishing Company.

Goebert, D. (2009). Social Support, Mental Health, Minorities, and Acculturative Stress. In S. Loue & M. Sajatovic (Eds.), *Determinants of Minority Mental Health and Wellness*. New York NY: Springer Science+Business Media.

Gottlieb, B. H., & Bergen, A. E. (2010). Social support concepts and measures. *Journal of Psychosomatic Research, 69*(5), 511-520.

Gould, S. J. (1999). A critique of Heckhausen and Schulz's (1995) life-span theory of control from a cross-cultural perspective. *Psychological Review, 106*(3), 597-604.

Greeley, J., & Oei, T. (1999). Alcohol and Tension Reduction. In K. Leonard & H. Blane (Eds.), *Psychological Theories of Drinking and Alcoholism* (pp. 14-53). New York NY: Guilford Press.

Griffith, D. C. (2005). Rural Industry and Mexican Immigration and Settlement in North Carolina. In V. A. Zuñiga & R. Hernández-León (Eds.), *New Destinations: Mexican Immigration in the United States* (pp. 50-75). New York NY: Russel Sage Foundation.

Gronbaek, M. (2009). The positive and negative health effects of alcohol- and the public health implications. *Journal of Internal Medicine, 265*(4), 407-420.

Grov, C. (2012). HIV Risk and Substance Use in Men Who Have Sex with Men Surveyed in Bathhouses, Bars/Clubs, and on Craigslist.org: Venue of Recruitment Matters. *AIDS and Behavior, 16*(4), 807-817.

Grundy, E., & Sloggett, A. (2003). Health inequalities in the older population: the role of personal capital, social resources and socio-economic circumstances. *Social Science & Medicine, 56*(5), 935-947.

Grzywacz, J. G., Quandt, S. A., Isom, S., & Arcury, T. A. (2007). Alcohol use among immigrant Latino farmworkers in North Carolina. *American Journal of Industrial Medicine, 50*(8), 617-625.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59-82.

Hamilton, C. J., & Mahalik, J. R. (2009). Minority stress, masculinity, and social norms predicting gay men's health risk behaviors. *Journal of Counseling Psychology, 56*(1), 132-141.

Hammersley, M. (2008). Troubles with Triangulation. In M. Bergman (Ed.), *Advances in Mixed Methods Research* (pp. 22-36). Thousand Oaks CA: Sage.

Harrell, S. P. (2000). A multidimensional conceptualization of racism-related stress: implications for the well-being of people of color. *American Journal of Orthopsychiatry, 70*(1), 42-57.

Harzke, A. J., Williams, M. L., Nilsson-Schonnesson, L., Ross, M. W., Timpson, S., & Keel, K. B. (2004). Psychosocial factors associated with adherence to antiretroviral medications in a sample of HIV-positive African American drug users. *Aids Care-Psychological and Socio-Medical Aspects of Aids/Hiv, 16*(4), 458-470.

Hatzenbuehler, M. L. (2009). How does sexual minority stigma "get under the skin?" A psychological mediation framework. *Psychological Bulletin, 135*(5), 707-730.

Hayes-Bautista, D., & Chapa, J. (2002). Latino Terminology: Conceptual Bases for Standardized Terminology. In T.A. LaVeist (Ed.), *Race, Ethnicity, and Health*. San Francisco CA: Jossey-Bass.

Heath, D.B. (1995). *International Handbook on Alcohol and Culture*. Westport CN: Greenwood Press.

Heaney, C. A., & Israel, B. A. (2008). Social Networks and Social Support. In K. Glanz, B. K. Rimer & K. Viswanath (Eds.), *Health Behavior and Health Education: Theory Research, and Practice*. San Francisco CA: Jossey-Bass.

Heckathorn, D.D. (1997). Respondent-driven sampling: a new approach to the study of hidden populations. *Social Problems, 44*(2), 174-199.

Henry J. Kaiser Family Foundation. (2013). *Fact Sheet: Latinos and HIV/AIDS*. Washington DC: Henry J Kaiser Family Foundation.

Herd, D. (1987). Rethinking Black drinking. *British Journal of Addiction, 82*(3), 219-223.

Hingson, R., & Winter, M. (2003). Epidemiology and consequences of drinking and driving. *Alcohol Research & Health, 27*(1), 63-78.

Hirshfield, S., Remien, R. H., Humberstone, M., Walavalkar, I., & Chiasson, M. A. (2004). Substance use and high-risk sex among men who have sex with men: a national online study in the USA. *AIDS Care, 16*(8), 1036-1047.

Hocking, M. C., & Lochman, J. E. (2005). Applying the transactional stress and coping model to sickle cell disorder and insulin-dependent diabetes mellitus: Identifying psychosocial variables related to adjustment and intervention. *Clinical Child and Family Psychology Review, 8*(3), 221-246.

Holton, J. (2007). The Coding Process and Its Challenges. In A. Bryant & Charmaz, K. (Eds.), *The Sage Handbook of Grounded Theory.* Thousand Oaks CA: Sage.

Hoenig, J. M., & Heisey, D. M. (2001). The abuse of power: The pervasive fallacy of power calculations for data analysis. *American Statistician, 55*(1), 19-24.

Holton, J. (2007). The Coding Process and Its Challenges. In A. Bryant & K. Charmaz (Eds.), *The Sage Handbook of Grounded Theory* (pp. 265-289). Thousand Oaks CA: Sage.

Hosmer, D., & Lemeshow, S. (2000). *Applied Logistic Regression, 2nd Ed.* New York NY: John Wiley & Sons, Inc.

House, J.S., Landis, K.R., & Umberson, D. (1988). Social relationships and health. *Science*, 241(4865), 540-545.

Hovey, J. D., & Magana, C. (2000). Acculturative stress, anxiety, and depression among Mexican immigrant farmworkers in the midwest United States. *Journal of Immigrant Health, 2*(3), 119-131.

Hughes, T. L. (2005). Alcohol use and alcohol-related problems among lesbians and gay men. *Annual Revue of Nursing Research, 23*, 283-325.

Hunt, L. M., Schneider, S., & Comer, B. (2004). Should "acculturation" be a variable in health research? A critical review of research on US Hispanics. *Social Science & Medicine, 59*(5), 973-986.

Jenness, S. M., Begier, E. M., Neaigus, A., Murrill, C. S., Wendel, T., & Hagan, H. (2011). Unprotected anal intercourse and sexually transmitted diseases in high-risk heterosexual women. *American Journal of Public Health, 101*(4), 745-750.

Johnson, R., Onwuegbuzie, A., & Turner, L. (2007). Towards a definition of mixed-methods research. *Journal of Mixed Methods Research, 1*(2), 112-133.

Johnston, L., O'Bra, H., Chopra, M., Mathews, C., Townsend, L., Sabin, K., Tomlinson, M., & Kendall, C. (2010). The associations of voluntary counseling and testing acceptance and the perceived likelihood of being HIV-infected among men with

multiple sex partners in a South African township. *AIDS and Behavior, 14*(4), 922-931.

Johnston, L. G., Malekinejad, M., Kendall, C., Iuppa, I. M., & Rutherford, G. W. (2008). Implementation challenges to using respondent-driven sampling methodology for HIV biological and behavioral surveillance: field experiences in international settings. *AIDS and Behavior, 12*(4 Suppl), S131-141.

Jung, J. (2010). *Alcohol, Other Drugs, and Behavior: Psychological Research Perspectives*. Thousand Oaks CA: Sage Publications Inc.

Karriker-Jaffe, K. J., & Zemore, S. E. (2009). Associations between acculturation and alcohol consumption of Latino men in the United States. *Journal of Studies on Alcohol and Drugs, 70*(1), 27-31.

Kasarda, J. D., & Johnson, J. H. (2006). *The Economic Impact of the Hispanic Population on the State of North Carolina*. Chapel Hill NC: Frank Hawkins Kenan Institute of Private Enterprise.

Koch, T. (1994). Establishing rigour in qualitative research: the decision trail. *Journal of Advanced Nursing, 19*(5), 976-986.

Kochlar, R., Suro, R., & Tafoya, S. (2005). *The New Latino South: The Context and Consequences of Rapid Population Growth*. Washington DC: Pew Hispanic Center.

Kuhn, T. (1996). *The Structure of Scientific Revolutions, 3rd Ed.* (3rd ed.). Chicago IL: University of Chicago Press.

Kuhn, T. (2000). *The Road since Structure: Philosophical Essays, 1970-1993, with an Autobiographical Interview*. Chicago IL: University of Chicago Press.

Lacayo, A. E. (2010). *The Impact of Section 287(g) of the Immigration and Nationality Act on the Latino Community.* Washington DC: National Council of La Raza.

Lara, M., Gamboa, C., Kahramanian, M. I., Morales, L. S., & Bautista, D. E. (2005). Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annual Review of Public Health, 26*, 367-397.

Lauby, J. L., Millett, G. A., Lapollo, A. B., Bond, L., Murrill, C. S., & Marks, G. (2008). Sexual risk behaviors of HIV-positive, HIV-negative, and serostatus-unknown Black men who have sex with men and women. *Archives of Sexual Behavior, 37*(5), 708-719.

Laureano, M., & Poliandro, E. (1991). Understanding Cultural Values of Latino Male Alcoholics and Their Families: A Culture Sensitive Model. In E. B. Isaacson (Ed.), *Chemical Dependency: Theoretical Approaches and Strategies Working with Individuals and Families* (pp. 137-156). Binghamton NY: The Hayworth Press.

Lazarus, R., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York NY: Springer Publishing Company.

Lebowitz, D. (1975). Social environment and health. *Public Health Reviews, 4*(3-4), 327-351.

Lee, D. J., Markides, K. S., & Ray, L. A. (1997). Epidemiology of self-reported past heavy drinking in Hispanic adults. *Ethnicity & Health, 2*(1-2), 77-88.

Leech, N., & Onwuegbuzie, A. (2009). A typology of mixed methods research designs. *Quality & Quantity*, 43(2), 265-275.

Levine, M., & Ensom, M. H. H. (2001). Post hoc power analysis: An idea whose time has passed? *Pharmacotherapy, 21*(4), 405-409.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Newbury Park CA: Sage Publications.

Lindheim, R., & Syme, S. L. (1983). Environments, people, and health. *Annual Review of Public Health, 4*, 335-359.

Lipscomb, M. (2008). Mixed method nursing studies: a critical realist critique. *Nursing Philosophy, 9*(1), 32.

Lipsky, S., Caetano, R., Field, C. A., & Larkin, G. L. (2005). Psychosocial and substance-use risk factors for intimate partner violence. *Drug and Alcohol Dependence, 78*(1), 39-47.

Lopez-Class, M., Castro, F. G., & Ramirez, A. G. (2011). Conceptions of acculturation: a review and statement of critical issues. *Social Science & Medicine, 72*(9), 1555-1562.

Loury, S., Jesse, E., & Wu, Q. (2011). Binge drinking among male mexican immigrants in rural north Carolina. *Journal of Immigrant and Minority Health, 13*(4), 664-670.

Magnani, R., Sabin, K., Saidel, T., & Heckathorn, D. (2005). Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS, 19 Suppl 2*, S67-72.

Maliski, S. L., Connor, S. E., & Litwin, M. S. (2012). Purposeful interaction: ways Latino men communicate about prostate cancer. *Oncology Nursing Forum, 39*(6), 603-608.

Marin, G., Sabogal, F., Marin, B. V., Otero-Sabogal, R., & Perez-Stable, E. J. (1987). Development of a short acculturation scale for Hispanics. *Hispanic Journal of Behavioral Sciences, 9*(2), 183-205.

Markides, K. S., & Coreil, J. (1986). The health of Hispanics in the Southwestern United States: an epidemiologic paradox. *Public Health Reports, 101*(3), 253-265.

Markides, K. S., Ray, L. A., Stroupbenham, C. A., & Trevino, F. (1990). Acculturation and alcohol consumption in the Mexican-American population of the Southwestern United States: findings from HHANES 1982-84. *American Journal of Public Health, 80*, 42-46.

Marsiglia, F. F., & Kulis, S. (2009). *Diversity, Oppression, and Change: Culturally Grounded Social Work*. Chicago IL: Lyceum Books.

Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health, 91*(11), 1869-1876.

McCabe, S. E., Bostwick, W. B., Hughes, T. L., West, B. T., & Boyd, C. J. (2010). The relationship between discrimination and substance use disorders among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health, 100*(10), 1946-1952.

McCabe, S. E., West, B. T., Hughes, T. L., & Boyd, C. J. (2013). Sexual orientation and substance abuse treatment utilization in the United States: Results from a national survey. *Journal of Substance Abuse Treatment, 44*(1), 4-12.

McDermott, E., Roen, K., & Scourfield, J. (2008). Avoiding shame: Young LGBT people, homophobia and self-destructive behaviours. *Culture, Health & Sexuality, 108*(815-829).

McKirnan, D. J., & Peterson, P. L. (1988). Stress, expectancies, and vulnerability to substance abuse: a test of a model among homosexual men. *Journal of Abnormal Psychology, 97*(4), 461-466.

McKirnan, D. J., & Peterson, P. L. (1989a). Alcohol and drug use among homosexual men and women: epidemiology and population characteristics. *Addictive Behaviors, 14*(5), 545-553.

McKirnan, D. J., & Peterson, P. L. (1989b). Psychosocial and cultural factors in alcohol and drug abuse: an analysis of a homosexual community. *Addictive Behaviors, 14*(5), 555-563.

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education Quarterly, 15*(4), 351-377.

Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior, 36*(1), 38-56.

Meyer, I. H. (2003a). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin, 129*(5), 674-697.

Meyer, I. H. (2003b). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin, 129*(5), 674-697.

Meyerhoff, D. J., Bode, C., Nixon, S. J., De Bruin, E. A., Bode, J. C., & Seitz, H. K. (2005). Health risks of chronic moderate and heavy alcohol consumption: how much is too much? *Alcoholism: Clinican and Experimental Research, 29*(7), 1334-1340.

Midanik, L. T., Hines, A. M., Barrett, D. C., Paul, J. P., Crosby, G. M., & Stall, R. D. (1998). Self-reports of alcohol use, drug use and sexual behavior: Expanding the timeline follow-back technique. *Journal of Studies on Alcohol, 59*(6), 681-689.

Miles, M. B., & Huberman, A. M. (1994). Matrix Displays: Some Rules of Thumb *Qualitative Data Analysis, 2nd Ed* (pp. 239-244). Thousand Oaks CA: Sage.

Mills, J., Bonner, A., & Francis, K. (2006a). Adopting a constructivist approach to grounded theory: implications for research design. *International Journal of Nursing Practice, 12*(1), 8-13.

Mills, J., Bonner, A., & Francis, K. (2006b). The development of constructivist grounded theory. *International Journal of Qualitative Methods, 5*(1), 1-10.

Miranda, P., González, H., & Tarraf, W. (2011). Pathways between acculturation and health: does the measure matter? *Hispanic Journal of Behavioral Sciences, 33*(4), 524-539.

Mizuno, Y., Borkowf, C., Millett, G. A., Bingham, T., Ayala, G., & Stueve, A. (2012). Homophobia and Racism Experienced by Latino Men Who Have Sex with Men in the United States: Correlates of Exposure and Associations with HIV Risk Behaviors. *AIDS and Behavior, 16*(3), 724-735.

Morgan, D. (1998). Practical strategies for combining qualitative and quantitative methods: applications to health research. *Qualitative Health Research, 8*(3), 362.

Morse, J. (1994). Designing funded qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Handbook for Qualitative Research*. Thousand Oaks CA: Sage.

Morse, J., Stern, P., Corbin, J., Bowers, B., Charmaz, K., & Clarke, A. (2009). *Developing Grounded Theory: The Second Generation*. Walnut Creek CA: Left Coast Press Inc.

Morse, J. M., Dimitroff, L. J., Harper, R., Koontz, A., Kumra, S., Matthew-Maich, N., Mihas, P., & Murphey, C. (2011). Considering the qualitative-quantitative language divide. *Qualitative Health Research, 21*(9), 1302-1303.

Motel, S., & Patten, E. (2013). *Statistical Portrait of Hispanics in the United States, 2011*. Washington DC: Pew Research Hispanic Center.

Mouton, C. P., Carter-Nolan, P. L., Makambi, K. H., Taylor, T. R., Palmer, J. R., Rosenberg, L., & Adams-Campbell, L. L. (2010). Impact of perceived racial discrimination on health screening in black women. *Journal of Health Care for the Poor and Underserved, 21*(1), 287-300.

Mulia, N., Ye, Y., Zemore, S. E., & Greenfield, T. K. (2008). Social disadvantage, stress, and alcohol use among black, Hispanic, and white Americans: findings from the 2005 U.S. National Alcohol Survey. *Journal of Studies on Alcohol and Drugs, 69*(6), 824-833.

Myers, R., Chou, C. P., Sussman, S., Baezconde-Garbanati, L., Pachon, H., & Valente, T. W. (2009). Acculturation and Substance Use: Social Influence as a Mediator among

Hispanic Alternative High School Youth. *Journal of Health and Social Behavior, 50*(2), 164-179.

Namey, E., Guest, G., Thairu, L., & Johnson, L. (2007). Data Reduction Techniques for Large Qualitative Data Sets. In G. Guest & K. MacQueen (Eds.), *Handbook for Team-Based Qualitative Research* (pp. 137-161). New York NY: Altamira Press.

Neff, J. A. (1986). Alcohol consumption and psychological distress among U.S. Anglos, Hispanics and Blacks. *Alcohol and Alcoholism, 21*(1), 111-119.

Neff, J. A., & Hoppe, S. K. (1992). Acculturation and drinking patterns among U.S. Anglos, blacks, and Mexican Americans. *Alcohol and Alcoholism, 27*(3), 293-308.

Neylan, T. C. (1998). Hans Selye and the field of stress research. *Journal of Neuropsychiatry and Clinical Neurosciences, 10*(2), 230-231.

Niaz, M. (2008). A rationale for mixed methods (integrative) research programmes in education. *Journal of Philosophy of Education, 42*(2), 287.

Nielsen, A. L. (2000). Examining drinking patterns and problems among hispanic groups: results from a national survey. *J Stud Alcohol, 61*(2), 301-310.

North Carolina Institute of Medicine. (2003). *NC Latino Health, 2003: A Report From the Latino Health Task Force*. Durham NC.

North Carolina State Center for Health Statistics. (2012). 2011 BRFSS Survey Results: North Carolina.   Retrieved March 3, 2013, from http://www.schs.state.nc.us/schs/brfss/2011/nc/all/_RFBING5.html.

Office of Management and Budget (1997). Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. *Federal Register. 62, 58781-58790.*

Office of National AIDS Policy. (2010). *National HIV/AIDS Strategy for the United States*. Washington DC: The White House.

Omran, A. R. (1971). The epidemiologic transition: a theory of the epidemiology of population change. *Milbank Quarterly, 49*(4), 509-538.

Ong, A. S., & Ward, C. (2005). The construction and validation of a social support measure for sojourners: the Index of Sojourner Social Support (ISSS) Scale. *Journal of Cross-Cultural Psychology, 36*(6), 637-661.

Organista, K. C. (2007). *Solving Latino Psychosocial Health Problems: Theory, Practice, and Populations*. Hoboken NJ: John Wiley and Sons, Inc.

Palloni, A., & Arias, E. (2004). Paradox lost: Explaining the Hispanic adult mortality advantage. *Demography, 41*(3), 385-415.

Palloni, A., & Morenoff, J. (2001). Interpreting the paradoxical in the Hispanic paradox. *Annals of the New York Academy of Sciences, 954*, 140-174.

Parrado, E. A., & Kandel, W. (2008). New Hispanic Migrant Destinations: A Tale of Two Industries. In D. S. Massey (Ed.), *New Faces in New Places: The Changing Geography of American Immigration*. New York NY: Russell Sage Foundation.

Passel, J. & Taylor, P. (2009). *Who's Hispanic?* Washington DC: Pew Hispanic Center.

Peck, R. C., Gebers, M. A., Voas, R. B., & Romano, E. (2008). The relationship between blood alcohol concentration (BAC), age, and crash risk. *Journal of Safety Research, 39*(3), 311-319.

Perez, R. L. (2000). Fiesta as tradition, fiesta as change: ritual, alcohol and violence in a Mexican community. *Addiction, 95*(3), 365-373.

Perreira, K. (2011). Mexican families in North Carolina: the socio-historical contexts of exit and settlement. *Southeastern Geographer, 51*(2), 260-286.

Philbin, M., Pollini, R. A., Ramos, R., Lozada, R., Brouwer, K. C., Ramos, M. E., Firestone-Cruz, M., Case, P., & Strathdee, S. A. (2008). Shooting gallery attendance among IDUs in Tijuana and Ciudad Juarez, Mexico: correlates, prevention opportunities, and the role of the environment. *AIDS and Behavior, 12*(4), 552-560.

Pittman, D., & White, H. (1991). *Society, Culture and Drinking Patterns Reexamined*. New Brunswick NJ: Publications Division, Rutgers Center of Alcohol Studies.

Pohorecky, L. A. (1991). Stress and alcohol interaction: an update of human research. *Alcoholism-Clinical and Experimental Research, 15*(3), 438-459.

Pollini, R. A., Brouwer, K. C., Lozada, R. M., Ramos, R., Cruz, M. F., Magis-Rodriguez, C., Case, P., Burris, S., Pu, M., Frost, S. D., Palinkas, L. A., Miller, C., & Strathdee, S. A. (2008). Syringe possession arrests are associated with receptive syringe sharing in two Mexico-US border cities. *Addiction, 103*(1), 101-108.

Poppen, P. J., Reisen, C. A., Zea, M. C., Bianchi, F. T., & Echeverry, J. J. (2004). Predictors of unprotected anal intercourse among HIV-positive Latino gay and bisexual men. *AIDS and Behavior, 8*(4), 379-389.

Ramirez-Valles, J., Garcia, D., Campbell, R. T., Diaz, R. M., & Heckathorn, D. D. (2008). HIV infection, sexual risk behavior, and substance use among Latino gay and bisexual men and transgender persons. *American Journal of Public Health, 98*(6), 1036-1042.

Ramirez-Valles, J., Heckathorn, D. D., Vazquez, R., Diaz, R. M., & Campbell, R. T. (2005). From networks to populations: the development and application of respondent-driven sampling among IDUs and Latino gay men. *AIDS and Behavior, 9*(4), 387-402.

Ramirez-Valles, J., Kuhns, L. M., Campbell, R. T., & Diaz, R. M. (2010). Social Integration and Health: Community Involvement, Stigmatized Identities, and Sexual Risk in Latino Sexual Minorities. *Journal of Health and Social Behavior, 51*(1), 30-47.

Randolph, W. M., Stroup-Benham, C., Black, S. A., & Markides, K. S. (1998). Alcohol use among Cuban-Americans, Mexican-Americans, and Puerto Ricans. *Alcohol Health and Research World, 22*(4), 265-269.

Rao, K. (2009). Recent research in stress, coping and women's health. *Current Opinion in Psychiatry, 22*(2), 188-193.

Redfield, R., Linton, R., & Herskovits, M. (1936). Memorandum for the study of acculturation. *American Anthropologist, 38*(1), 149-152.

Reynolds, K., Lewis, L. B., Nolen, J. D. L., Kinney, G. L., Sathya, B., & He, J. (2003). Alcohol consumption and risk of stroke: a meta-analysis. *JAMA, 289*(5), 579-588.

Rhodes, S. D., Eng, E., Hergenrather, K. C., Remnitz, I. M., Arceo, R., Montano, J., & Alegria-Ortega, J. (2007). Exploring Latino men's HIV risk using community-based participatory research. *American Journal of Health Behav, 31*(2), 146-158.

Rhodes, S. D., Hergenrather, K. C., Aronson, R. E., Bloom, F. R., Felizzola, J., Wolfson, M., Vissman, A. T., Alonzo, J., Boeving Allen, A., Montano, J., & McGuire, J. (2010). Latino men who have sex with men and HIV in the rural south-eastern USA: findings from ethnographic in-depth interviews. *Culture Health & Sexuality, 12*(7), 797-812.

Rhodes, S. D., Hergenrather, K. C., Bloom, F. R., Leichliter, J. S., & Montano, J. (2009). Outcomes from a community-based, participatory lay health adviser HIV/STD prevention intervention for recently arrived immigrant Latino men in rural North Carolina. *AIDS Education and Prevention, 21*(5 Suppl), 103-108.

Rhodes, S. D., Hergenrather, K. C., Griffith, D. M., Yee, L. J., Zometa, C. S., Montano, J., & Vissman, A. T. (2009a). Sexual and alcohol risk behaviours of immigrant Latino men in the South-eastern USA. *Culture Health & Sexuality, 11*(1), 17-34.

Rhodes, S. D., Hergenrather, K. C., Griffith, D. M., Yee, L. J., Zometa, C. S., Montano, J., & Vissman, A. T. (2009b). Sexual and alcohol risk behaviours of immigrant Latino men in the South-eastern USA. *Culture Health & Sexuality, 11*(1), 17-34.

Rhodes, S. D., Hergenrather, K. C., Yee, L. J., Wilkin, A. M., Clarke, T. L., Wooldredge, R., Brown, M., & Davis, A. B. (2007). Condom acquisition and preferences within a sample of sexually active gay and bisexual men in the southern United States. *AIDS Patient Care and STDs, 21*(11), 861-870.

Rhodes, S. D., McCoy, T. P., Hergenrather, K. C., Vissman, A. T., Wolfson, M., Alonzo, J., Bloom, F. R., Alegría-Ortega, J., & Eng, E. (2012). Prevalence estimates of health risk behaviors of immigrant Latino men who have sex with men. *Journal of Rural Health, 28*(1), 73-83.

Rhodes, S. D., Yee, L. J., & Hergenrather, K. C. (2006). A community-based rapid assessment of HIV behavioural risk disparities within a large sample of gay men in southeastern USA: a comparison of African American, Latino and white men. *AIDS Care, 18*(8), 1018-1024.

Rispel, L. C., Metcalf, C. A., Cloete, A., Reddy, V., & Lombard, C. (2011). HIV Prevalence and Risk Practices Among Men Who Have Sex With Men in Two South African Cities. *Journal of Acquired Immune Deficiency Syndromes, 57*(1), 69-76.

Risser, J. M., Padgett, P., Wolverton, M., & Risser, W. L. (2009). Relationship between heterosexual anal sex, injection drug use and HIV infection among black men and women. *International Journal of STD & AIDS, 20*(5), 310-314.

Rivers, P. (1994). *Alcohol and Human Behavior: Theory, Research, and Practice*. Englewood Cliffs NJ: Prentice Hall.

Rodgers, B. L., & Cowles, K. V. (1993). The qualitative research audit trail: a complex collection of documentation. *Research in Nursing & Health, 16*(3), 219-226.

Room, R. (1990). Measuring Alcohol Consumption in the United States. In L. T. Kozlowski, H. M. Annis, H. D. Cappell, F. B. Glaser, M. S. Goodstadt, Y. Israel, H. Kalant, E. M. Sellers & E. R. Vingilis (Eds.), *Research Advances in Alcohol and Drug Problems* (Vol. 10, pp. 39-80). New York NY: Plenum Press.

Room, R. (1991). Measuring Alcohol Consumption in the U.S.: Methods and Rationales. In W. Clark & M. Hilton (Eds.), *Alcohol in America* (pp. 26-50). Albany NY: State University of New York Press.

Room, R. (2000). Measuring drinking patterns: the experience of the last half century. *Journal of Substance Abuse, 12*(1-2), 23-31.

Ross, M. W., & Rosser, B. R. (1996). Measurement and correlates of internalized homophobia: a factor analytic study. *Journal of Clinical Psychology, 52*(1), 15-21.

Rudmin, F. (2009). Constructs, measurements and models of acculturation and acculturative stress. *International Journal of Intercultural Relations, 33*(2), 106-123.

Russell, S. T., Ryan, C., Toomey, R. B., Diaz, R. M., & Sanchez, J. (2011). Lesbian, Gay, Bisexual, and Transgender Adolescent School Victimization: Implications for Young Adult Health and Adjustment. *Journal of School Health, 81*(5), 223-230.

Ryen, A. (2002). Cross-Cultural Interviewing. In J. Gubrium & J. Holstein (Eds.), *Handbook of Interview Research: Context & Method*. Thousand Oaks CA: Sage Publications.

Saldaña, J. (2013). *The Coding Manual for Qualitative Researchers* (2nd ed.). Thousand Oaks CA: Sage.

Sandelowski, M. (1986). The problem of rigor in qualitative research. *Advances in Nursing Science, 8*(3), 27-37.

Sayette, M. A. (1999). Cognitive Theory and Research. In K. Leonard & H. Blane (Eds.), *Psychological Theories of Drinking and Alcoholism* (pp. 247-291). New York NY: Guilford Press.

Sayette, M. A. (1999). Does drinking reduce stress? *Alcohol Research and Health, 23*(4), 250-255.

Schneider, J., Michaels, S., & Bouris, A. (2012). Family Network Proportion and HIV Risk Among Black Men Who Have Sex With Men. *Journal of Acquired Immune Deficiency Syndromes, 61*(5), 627-635.

Selye, H. (1955). Stress and disease. *Science, 122*(3171), 625-631.

Selye, H. (1973). The evolution of the stress concept. *American Scientist, 61*(6), 692-699.

Sizemore, D. S. (2004). Ethnic inclusion and exclusion - Managing the language of Hispanic integration in a rural community. *Journal of Contemporary Ethnography, 33*(5), 534-570.

Smith, B. E., & Winders, J. (2008). 'We're here to stay': economic restructuring, Latino migration and place-making in the US South. *Transactions of the Institute of British Geographers, 33*(1), 60-72.

Smolenski, D. J., Ross, M. W., Risser, J. M., & Rosser, B. R. (2009). Sexual compulsivity and high-risk sex among Latino men: the role of internalized homonegativity and gay organizations. *AIDS Care, 21*(1), 42-49.

Sobell, L. C., & Sobell, M. B. (1995). Alcohol Consumption Measures. In J. P. Allen & M. Columbus (Eds.), *Assessing Alcohol Problems: A Guide for Clinicians and Researchers* (Vol. NIAAA Treatment Handbook Series 4, pp. 55-74). Bethesda MD: National Institutes of Health.

Song, E. Y., Leichliter, J. S., Bloom, F. R., Vissman, A. T., O'brien, M. C., & Rhodes, S. D. (2012). The Use of Prescription Medications Obtained from Non-medical Sources among Immigrant Latinos in the Rural Southeastern U.S. *Journal of Health Care for the Poor and Underserved, 23*(2), 678-693.

Spiller, M. W. Regression Modeling of Respondent-Driven Sampling Data. Cornell University.

Stall, R., Paul, J. P., Greenwood, G., Pollack, L. M., Bein, E., Crosby, G. M., Mills, T. C., Binson, D., Coates, T. J., & Catania, J. A. (2001). Alcohol use, drug use and alcohol-related problems among men who have sex with men: the Urban Men's Health Study. *Addiction, 96*(11), 1589-1601.

Stall, R., & Wiley, J. (1988). A comparison of alcohol and drug use patterns of homosexual and heterosexual men: the San Francisco Men's Health Study. *Drug and Alcohol Dependence, 22*(1-2), 63-73.

Stansfeld, S. A. (2006). Social Support and Social Cohesion. In M. Marmot & R. G. Wilkinson (Eds.), *Social Determinants of Health, 2nd Edition* (pp. 148-171). New York NY: Oxford University Press.

Steckler, A., McLeroy, K. R., Goodman, R. M., Bird, S. T., & McCormick, L. (1992). Toward integrating qualitative and quantitative methods: an introduction. *Health Education and Behavior, 19*(1), 1-8.

Steele, C. M., & Josephs, R. A. (1990). Alcohol myopia: its prized and dangerous effects. *American Psychologist, 45*(8), 921-933.

Stockwell, T., Donath, S., Cooper-Stanbury, M., Chikritzhs, T., Catalano, P., & Mateo, C. (2004). Under-reporting of alcohol consumption in household surveys: a comparison of quantity-frequency, graduated-frequency and recent recall. *Addiction, 99*(8), 1024-1033.

Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Prodecures for Developing Grounded Theory*. Thousand Oaks CA: Sage.

Substance Abuse and Mental Health Services Administration. (2010). *Results from the 2009 National Survey on Drug Use and Health: Volume I. Summary of National Findings*.

Suro, R., & Singer, A. (2002). *Latino Growth in Metropolitan America: Changing Patterns, New Locations*. Washington DC: Center on Urban and Metropolitan Policy, The Brookings Institution, and The Pew Hispanic Center.

Syme, S. L. (1987). Social determinants of disease. *Ann Clin Res, 19*(2), 44-52.

Teddlie, C., & Johnson, R. (2009). Methodological Thought before the 20th Century. In C. Teddlie & A. Tashakkori (Eds.), *Foundations of Mixed Methods Research*. Thousand Oaks CA: Sage.

Teddlie, C., & Tashakkori, A. (2003). Major Issues and Controversies in the Use of Mixed Methods in the Social and Behavioral Sciences *Handbook of Mixed Methods in the Social and Behavioral Sciences* (pp. 3-50). Thousand Oaks CA: Sage Publications.

Testa, M., Quigley, B. M., & Leonard, K. E. (2003). Does alcohol make a difference? Within-participants comparison of incidents of partner violence. *Journal of Interpersonal Violence, 18*(7), 735-743.

Thakker, K. D. (1998). An overview of health risks and benefits of alcohol consumption. *Alcoholism: Clinical and Experimental Research, 22*(7 Suppl), 285S-298S.

Thoits, P. A. (1986). Social support as coping assistance. *Journal of Consulting and Clinical Psychology, 54*(4), 416-423.

Thomson, M., & Hoffman-Goetz, L. (2009). Defining and measuring acculturation: a systematic review of public health studies with Hispanic populations in the United States. *Social Science & Medicine, 69*(7), 983-991.

Tomfohr, L., Cooper, D. C., Mills, P. J., Nelesen, R. A., & Dimsdale, J. E. (2010). Everyday discrimination and nocturnal blood pressure dipping in black and white americans. *Psychosomatic Medicine, 72*(3), 266-272.

Tori, C. D. (1989). Homosexuality and illegal residency status in relation to substance abuse and personality traits among Mexican nationals. *Journal of Clinical Psychology*, 45(5), 814-821.

Tourangeau, R., Rips, L., & Rasinski, K. (2000). *The Psychology of Survey Response.* New York NY: Cambridge University Press.

Townsend, L., Rosenthal, S. R., Parry, C. D., Zembe, Y., Mathews, C., & Flisher, A. J. (2010). Associations between alcohol misuse and risks for HIV infection among men who have multiple female sexual partners in Cape Town, South Africa. *AIDS Care, 22*(12), 1544-1554.

Ulin, P. R., Robinson, E. T., & Tolley, E. E. (2005). *Qualitative Methods in Public Health: A Field Guide for Applied Research.* San Francisco CA: Jossey-Bass.

US Department of Health and Human Services. (2011). Healthy People 2020.   Retrieved July 14, 2011, from www.healthypeople.gov

Vaeth, P. A., Caetano, R., Ramisetty-Mikler, S., & Rodriguez, L. A. (2009). Hispanic Americans Baseline Alcohol Survey (HABLAS): alcohol-related problems across Hispanic national groups. *Journal of Studies on Alcohol and Drugs, 70*(6), 991-999.

Viruell-Fuentes, E. A. (2007). Beyond acculturation: immigration, discrimination, and health research among Mexicans in the United States. *Social Science & Medicine, 65*(7), 1524-1535.

Viruell-Fuentes, E. A., Miranda, P. Y., & Abdulrahim, S. (2012). More than culture: Structural racism, intersectionality theory, and immigrant health. *Social Science & Medicine, 75*(12), 2099-2106.

Vissman, A. T., Eng, E., Aronson, R. E., Bloom, F. R., Leichliter, J. S., Montano, J., & Rhodes, S. D. (2009). What do men who serve as lay health advisors really do?: Immigrant Latino men share their experiences as *navegantes* to prevent HIV. *AIDS Education and Prevention, 21*(3), 220-232.

Volkmann, T., Lozada, R., Anderson, C. M., Patterson, T. L., Vera, A., & Strathdee, S. A. Factors associated with drug-related harms related to policing in Tijuana, Mexico. *Harm Reduction Journal, 8*(1), 7.

Wayal, S., Cowan, F., Warner, P., Copas, A., Mabey, D., & Shahmanesh, M. (2011). Contraceptive practices, sexual and reproductive health needs of HIV-positive and negative female sex workers in Goa, India. *Sexually Transmitted Infections, 87*(1), 58-64.

Weyers, S., Dragano, N., Mobus, S., Beck, E. M., Stang, A., Mohlenkamp, S., Jockel, K. H., Erbel, R., & Siegrist, J. (2008). Low socio-economic position is associated with poor social networks and social support: results from the Heinz Nixdorf Recall Study. *International Journal for Equity in Health, 7.*

Williams, D. R., & Williams-Morris, R. (2000). Racism and mental health: the African American experience. *Ethnicity & Health, 5*(3-4), 243-268.

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health: socio-economic status, stress and discrimination. *Journal of Health Psychology, 2*(3), 335-351.

Wohl, A. R., Galvan, F. H., Myers, H. F., Garland, W., George, S., Witt, M., Cadden, J., Operskalski, E., Jordan, W., & Carpio, F. (2010). Social Support, Stress and Social Network Characteristics Among HIV-Positive Latino and African American Women and Men Who have Sex with Men. *AIDS and Behavior, 14*(5), 1149-1158.

Wolff, H. G. (1953). *Stress and Disease.* Springfield IL: Thomas.

Wong, C. F., Kipke, M. D., & Weiss, G. (2008). Risk factors for alcohol use, frequent use, and binge drinking among young men who have sex with men. *Addictive Behaviors, 33*(8), 1012-1020.

Wong, C. F., Weiss, G., Ayala, G., & Kipke, M. D. (2010). Harassment, discrimination, violence, and illicit drug use among young men who have sex with men. *AIDS Education & Prevention, 22*(4), 286-298.

Worby, P. A., & Organista, K. C. (2007). Alcohol use and problem drinking among male Mexican and Central American Im/migrant laborers: a review of the literature. *Hispanic Journal of Behavioral Sciences, 29*(4), 413-455.

Yen, I. H., & Syme, S. L. (1999). The social environment and health: a discussion of the epidemiologic literature. *Annual Review of Public Health, 20*, 287-308.

Zador, P. L., Krawchuk, S. A., & Voas, R. B. (2000). Alcohol-related relative risk of driver fatalities and driver involvement in fatal crashes in relation to driver age and gender: an update using 1996 data. *Journal of Studies on Alcohol, 61*(3), 387-395.

Zambrana, R. E., & Carter-Pokras, O. (2010). Role of acculturation research in advancing science and practice in reducing health care disparities among Latinos. *American Journal of Public Health, 100*(1), 18-23.

Zea, M., Reisen, C., & Diaz, R. (2003). Methodological issues in research on sexual behavior with Latino gay and bisexual men. *American Journal of Community Psychology, 31*(3/4), 281-291.

Zea, M. C., Reisen, C. A., Poppen, P. J., Bianchi, F. T., & Echeverry, J. J. (2005). Disclosure of HIV status and psychological well-being among Latino gay and bisexual men. *AIDS and Behavior, 9*(1), 15-26.

Zellner, J. A., Martinez-Donate, A. P., Sanudo, F., Fernandez-Cerdeno, A., Sipan, C. L., Hovell, M. F., & Carrillo, H. (2009). The Interaction of Sexual Identity With Sexual Behavior and Its Influence on HIV Risk Among Latino Men: Results of a Community Survey in Northern San Diego County, California. *American Journal of Public Health, 99*(1), 125-132.