MARRIAGE IMPACT ON HEALTH FOR GAYS AND LESBIANS IN AMERICA: AN ANALYSIS OF THE EFFECT OF MARRIAGE ON HEALTH FOR THOSE IN SAME-SEX MARRIAGES AND SAME-SEX COHABITING RELATIONSHIPS USING 2016-2018 NHIS DATA

A Dissertation

by

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ABSTRACT

A change in ability to enter into a same-sex marriage after the Supreme Court Ruling in 2015 allows for a closer examination of the impact of marriage on health for same-sex couples. The National Health Interview Survey that was conducted in the three years immediately following the legalization of same-sex marriage nation-wide included questions that identify those in same-sex marriages and same-sex cohabiting relationships. I extend what is known about the health behaviors, the health status, and same-sex marriage through an analysis of several health outcomes and risky behaviors. Results indicate that a selection effect may have taken place immediately after same-sex marriage was legalized with those in lower health categories marrying, possibly for the benefit of access to health care through spousal health insurance coverage.

Smoking status is the only health behavior that seems to immediately be positively impacted by marriage as those who are married have lower odds of being a smoker than those who cohabit. While lesbians who cohabit have lowest odds of having hypertension, I propose that after more time has passed lesbians who marry will experience higher levels of health and lower levels of risky behaviors. When this happens, we might see a Lesbian Paradox emerge in demographic health data where lesbians who marry lesbians experience higher levels of health and lower mortality risk than men who marry men, regardless of racial or SES background.

DEDICATION

This body of work and the completion of the requirements for my doctoral degree are dedicated to anyone who has ever been told that they could not achieve their dreams, that they were not good enough or not smart enough. This is proof that the hardest of goals can be accomplished, perhaps even in spite of those who said it cannot be done. It is also dedicated to anyone who has ever had to work on their dreams during long commutes, in the spare moments of all their other life responsibilities, while missing out on fun with friends and family, in the dark moments of the night while everyone else is sleeping, and especially dedicated to those who work on their dreams in the cold of hospital corridors. Hard things can be done. This is proof. You can do it, too.

This is also dedicated to anyone who has ever felt like their life was a lie and who they were is not good enough or not "normal". Life is a rainbow and all of us are normal. There is room for every one of us and we all deserve to live, love and thrive.

Finally, this is dedicated to my favorite three people: Clair, Rowan and Greg.

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1. INTRODUCTION

From the repeal of the Defense of Marriage Act (DOMA) in 2010 to the U.S. Supreme Court ruling in 2015 that legalized same-sex marriage nationwide, there are now opportunities to understand the impact of marriage for more than just heterosexual couples. The inclusion of same-sex relationship status options on national surveys such as the 2020 Census, the American Community Survey, the National Survey of Family Growth, and the National Health Interview Survey has opened the door for research on a national level on the impact of marriage for same-sex couples who have only recently been able to legally marry. While much has been written about the impact of marriage in the past, researchers now have the ability to search for answers to questions regarding the impact of marriage for those who are not in opposite-sex marriages. How will marriage impact the health outcomes for gays and lesbians? Is there a difference in the impact of marriage for those in male same-sex marriages when compared to those in female same-sex marriages? Will those in same-sex marriages differ in terms of health outcomes from those who are in same-sex cohabiting relationships? In this dissertation I undertake research that tests these questions. Specifically, I will test the question of whether or not there is a positive impact of marriage on health for same-sex couples when compared to same-sex couples who cohabit. I will also test whether married lesbians have higher self-ratings of health that married gay men. These questions and the answers to them will help to fill the gaps in literature on what is known about the impact of marriage for same-sex couples.

In chapter 1, I will first discuss the history of same-sex marriage in the US. Then I will give an overview of the marriage effect on health among opposite-sex couples. Finally, I will discuss what is known of the marriage effect on health among same-sex couples.

1.1. History of Same-Sex Marriage in the US

1.1.1. The First Same-Sex Marriage in the US

For same-sex couples in the United States, the changes in the state and federal laws have both created and removed barriers to family formation and recognition. Any discussion of same-sex marriage in the US needs to address these laws and the history of the struggle for marriage equality. The battle for same-sex marriage in America largely began in the 1970's when two men, Jack Baker and Michael McConnell applied for a marriage license in Minnesota where statutes did not explicitly outline that a wedding license could not be obtained by two men or by two women (MINN. STAT. § 517.01 (1971) (amended 1977)). Their argument was that "what is not forbidden is permitted" (McConnell, Baker and Karwoski 2016). Their application for marriage was denied and the resulting lawsuit was then appealed to Minnesota's Supreme Court (Baker v Nelson 1971). After exploring legal options, Jack suggested to Michael that adoption might be a loophole that would give the couple next of kin rights should one of them become ill or injured (McConnell, Baker and Karwoski 2016). After a quick adoption process where they were able to change their surnames to match and change Michael's first name to gender neutral Pat, the two applied for a marriage license in Blue Earth County, Minnesota. The two were legally married for more than 6 weeks when the Minnesota

Supreme Court ruled that same-sex marriages in Minnesota were prohibited (Cook and Shelly 2007). As the U.S. Constitution forbids the imposition of punishment for past conduct that was lawful at the time it in which was engaged, their marriage could not be invalidated and was, therefore, the first same-sex marriage in the United States (McConnell et al. v Blue Earth County et al. 2017).

1.1.2. Same-Sex Marriage in Hawaii

Another court battle began to unfold in Hawaii in the mid 1980's. After a lifetime of political activism and public service, Bill Woods fielded a phone call from Ninia Baehr at the Honolulu Gay and Lesbian Community Center. Baehr had been struggling with health issues and wanted to know if her partner's health insurance would cover her medical bills (Ryan 2000; Faderman 2015). After further discussions, Woods, with the planning committee for the first Honolulu Gay Pride Parade and Rally, prepared for a mass wedding of at least 30 couples at the festival in 1989 (Ryan 2000; Faderman 2015). While the mass wedding ultimately did not happen, one couple, Ninia Baehr and her partner Genora Dancel, along with two other couples, became the plaintiffs in Baehr v Lewin as they were denied marriage licenses in December of 1990 by the director of the Health Department, John Lewin (Ryan 2000; Faderman 2015). Bill Woods, in early 1991 approached Dan Foley, former legal director for the ACLU, Hawaii Chapter about the case (Ryan 2000). Woods convinced Foley to represent the couples and filed the complaint in May of 1991 (Baehr v Lewin, 74 Haw. 530 1993; Ryan 2000). The case was dismissed by the circuit court judge who reasoned that marriage was reserved strictly for heterosexuals for the betterment of the community, upholding the decision of

the state that marriage was intended to promote a positive environment for children (Faderman 2015). The plaintiffs appealed to the Hawaii Supreme Court who, in 1993, remanded the case back to lower courts as the State had failed to prove a compelling reason to enact a ban on same-sex marriage (Baehr v Lewin, 74 Haw. 530 1993; Ryan 2000; Clarkson-Freeman 2004; Faderman 2015).

The case was finally heard in 1996 as Baehr v Miike (the name changed when the new Director of the Health Department replaced Lewin) during which the State argued that same-sex couples were not suitable parents. The plaintiffs responded with expert testimony that no such evidence in fact existed (Ryan 2000; Sant'Ambrogio and Law 2011). During the trial, more than one witness for the State even admitted that gay and lesbian parents were doing well in raising children and that virtually no differences could be found in the developmental outcomes of children raised by same-sex couples as compared to the developmental outcomes of children raised by different-sex couples (Ryan 2000; Sant'Ambrogio and Law 2011). On December 3, 1996, Circuit Court Judge Change ruled that same-sex couples were equally competent as parents as different-sex couples and that the recognition of the relationship of the same-sex parents as legitimate and legal would actually be a benefit to the children of these couples (Baehr v Miike, 80 Haw. 341 910 P.2d 112 1996; Ryan 2000; Clarkson-Freeman 2004; Sant'Ambrogio and Law 2011; Faderman 2015). He ruled in favor of the plaintiffs and immediately issued a stay of proceedings while the case was sent to the Hawaii Supreme Court.

While all of this was unfolding in Hawaii, something very different was happening in Washington D.C.

1.1.3. The Defense of Marriage Act

On May 7th, 1996, House Bill 3396 was introduced to the US House of Representatives (H.R.3396 - 104th Congress (1995-1996): Defense of Marriage Act). The bill was in direct response to the Baehr v. Lewin lawsuit and the chance that Hawaii might become the first state to legalize same-sex marriages (H. Rpt. 104-664). Senate Majority Leader, Bob Dole, was running for President and immediately signed on to sponsor the bill in the Senate (Goldman 1998, Clarkson-Freeman 2004). The bill quickly made its way through the Republican controlled House and Senate and was signed in to law by President Bill Clinton on September 21st of 1996 (PL 104-199, 21 September 1996).

The bill was presented in two parts. First, it declared that no state was required to recognize a same-sex marriage performed in another state, thereby circumventing the Full Faith and Credit Clause of the U.S. Constitution (H. Rpt. 104-664). Secondly, it formally defined marriage as a legal union between one man and one woman, specifically two people of the opposite sexes and defined a spouse as someone who is legally married to a person of the opposite sex (H.R. 3396 - 104th Congress (1995-1996): Defense of Marriage Act; Ryan 2000; Clarkson-Freeman 2004; Sant'Ambrogio and Law 2011).

The Defense of Marriage Act (DOMA) effectively denied access to federal benefits for those who would eventually be able to marry. It also denied marriage recognition in the home state of those who would travel to other states where same-sex marriage became legal (Ryan 2000). The DOMA, essentially, created a legal limbo

status for those who would eventually marry in the handful of states that allowed it and a "patchwork quilt of laws" pertaining to the various types of legally recognized relationships that varied from state to state (Simmons 2012).

Shortly after President Clinton signed the DOMA into law, the Hawaii case that set it off was sent to the Hawaii Supreme Court. The case would not be ruled on for another two years (Clarkson-Freeman 2004). In April of 1997 both houses of the Hawaii legislature passed a constitutional amendment reserving marriage for opposite sex couples (Somera 1999). The amendment was ratified in November of 1998 and the court ultimately ruled that the case was no longer relevant and it was dismissed (Somera 1999; Ryan 2000; Clarkson-Freeman 2004)

The campaign for marriage equality would not be stopped, however. Slowly states began to pass laws allowing same-sex marriage: starting with Massachusetts in 2004, then Connecticut in 2008, Iowa and Vermont in 2009, New Hampshire and the District of Columbia in 2010, New York in 2011, Maine, Maryland, and Washington in 2012 (Simmons 2012; Fasbinder et al. 2013). Then, in a landmark ruling, DOMA was overturned by the Supreme Court of the United States on United States v Windsor on June 26, 2013 (*United States* v. *Windsor,* 570 U. S. 744 (2013)). This granted federal recognition and benefits of those marriages that were obtained in states where same-sex marriages were allowed. It fell short, however, of granting access to marriage to same-sex couples across the nation. That would have to wait until 2015 when the Supreme Court ruled on Obergefell v Hodges (2015). This ruling immediately granted the ability for same-sex couples to legally marry across the United States. Since 2015 the social

acceptance of same-sex marriage has continued to rise, even in the face of legislation that can be considered a backlash on LGBT rights (Kazyak and Stange 2018; Pew Research Center 2019), and the cultural significance as well as the impact of marriage on health will be studied for years to come (Bernstein 2018). In that historic ruling Judge Kennedy wrote that marriage for same-sex couples was a fundamental right under the U.S. Constitution and that it safeguards families and offers stability and the denial of that right created a grave harm (Obergefell v. Hodges, 576 U.S. 644 2015).

To address what harms might come from the denial of access to marriage, researchers need to examine what benefit there may be in marriage. An increasing volume of research points that access to marriage is a matter of health (Buffie 2011; Tuller 2017). The fight for equality in marriage, and therefore equality in access to health care, after all, was a key part of the fight for gay males, lesbians and bisexuals to be seen as worthy of the same rights as their heterosexual counterparts. Access to health care, health insurance coverage, hospital spousal visitation, the ability to make emergency health care decisions for a spouse, and next-of-kin decisions are all generally granted to married heterosexual couples and yet they are things denied historically to same-sex couples (Ryan 2000). Just as the Hawaii lawsuit all began from a conversation about Ninia Baehr needing access to medical care, the fight for marriage equality was very much a fight for equality in health, access, and civil rights (Ryan 2000; Cook and Shelly 2007; Rocklin and Liang 2011). The question of how marriage impacts health for same-sex couples is still to be answered, however, as is the question of how marriage impacts female-female couples differently than male-male couples.

1.2. Impact of Marriage on Health Among Opposite Sex Couples

One of the most widely accepted beliefs about marriage is that it is good for the people who are married and that it is good for society (Waite and Gallagher 2000). The State of Hawaii built their entire case opposing same-sex marriage around the idea that marriage, for heterosexual couples, was good for the community (Baehr v Lewin, 74 Haw. 530, 1993). Those who marry are generally believed to eat better, take better care of themselves, exercise more, and live longer and more stable lives compared to those who do not marry (Gove 1973; Lasch 1977; Waite and Gallagher 2000, Guner, Kulikova and Llull 2018). Additionally, there is a decline in risk taking behaviors after marriage, which is an important positive impact of marriage on health (Sherbourne and Hays 1990). Marriage has been found to decrease the chance that one or both spouses will engage in behaviors that are in high health risk categories such as smoking, binge drinking, and using illegal drugs (Frech, Lynch, and Barr 2016; Guner, Kulikova, and Llull 2018). The health benefits of marriage even extend into widowhood as the positive effects last after the death of a spouse (Schone and Weinich 1998).

A connection between marriage and health and longevity was first observed by William Farr in 1858. Durkheim further documented the connection between marriage and longevity in his study on suicide, as those who were married committed suicide less often than those who were unmarried (1897). When researching the association between marriage and health and longevity, the advantages and disadvantages of marriage, three models are typically employed: 1) the marital resource model, 2) the stress model, and 3) the selection model.

Marital resource model stresses the availability of resources both physical and emotional, in marriage that cannot be obtained in other relationships such as pooling of finances, social and emotional support, and regulation of health habits (Ross, Mirowsky and Goldsteen 1990; Waite and Gallagher 2000). Marriage can provide specific benefits to those who are married in terms of psychological, social, and financial resources that lead to better health (Gove 1973; Ross, Mirowsky, and Goldsteen 1990; Coombs 1991; Waite and Gallagher 2000; Guner, Kulikova and Llull 2018).

It is important to note that some scholars argue marriage is not as beneficial to the self or the community as once thought, especially when considering the quality of the marriage (Robles 2014). The *stress model* argues that the stress from marriage dissolution is greater than the benefits on health realized in marriage (Williams and Umberson 2004). This model emphasizes the negative effects and impacts of ending a marriage through divorce, death of a spouse or separation which lead to differences in health and mortality between the married and unmarried (Lillard and Waite 1995; Williams and Umberson 2004, Liu 2009).

Finally, the *selection model* asserts that the health of a person determines whether they will select in or out of marriage (Goldman 1993). The selection model is based on the idea that those in good health with better life chances, higher socioeconomic statuses, and better health behaviors select in to marriage and those with poor health and lower life chances do not select in to marriage (Joung et al. 1998). This could explain the differences in health and mortality rates between the married and unmarried, however,

Coombs (1991) found little support for the selection effect in a review of over 130 empirical studies on the relationship between health and marriage.

Regardless of the model used, marriage and health are intertwined. The benefits are not constant across all socioeconomic groups, races, and genders though (Simon 2002; Williams 2003). Men, historically, have benefited more from marriage than the women to whom they were married (Hemström 1996; Lillard and Waite 1995; Rogers 1995). Men receive greater social support than their wives (Umberson et al. 1996; Monin and Clark 2011). Women often take on the duties of caretaker not only of the household and children but of their husbands, thereby providing another benefit of marriage on the health of men (Hochschild and Machung 2012). It is, therefore, reasonable to hypothesize that if women are the reason that men benefit from heterosexual marriage, assuming equal access to healthcare and economic stability, women who marry women would be the beneficiaries of a wealth of support and better health. It is reasonable to theorize that same-sex married women would benefit more so than same-sex married men as there is reason to believe that all of these benefits will extend to all marriages even as the definition of marriage transforms to include same-sex couples (Frech, Lynch and Barr 2016; Brown, Manning, and Stykes 2015). Women experience benefits from marriage in terms of economic stability and access to health care, for example through access to health insurance (Pals and Waren 2014). This access to health insurance and therefore better access to healthcare may mean that women are economically tied to unhappy marriages. This dependency on a relationship or marriage for benefits that are

unattainable outside of a marriage may cause some women to stay in abusive relationships and limit the options for divorce for some (Broaddus 2020).

1.3. Impact of Marriage on Same-Sex Couples

While this research topic gained a lot of attention in the years since the repeal of the Defense of Marriage Act, there are still gaps in the research on risky behaviors and health and economic outcomes of those in same-sex marriages (Herek 2011; Reczek and Umberson 2012; Liu, Reczek, and Brown 2013; Umberson 2015). There has been some research undertaken to determine the quality of life and the life expectancy of married gay males and lesbians (Frisch and Brønunm-Hansen 2009), but few studies have outlined the differences in key outcomes of those in same-sex marriages compared to those in same-sex cohabiting relationships (see Wight, LeBlanc and Badgett 2013 for an example of one study of the mental health of same-sex married couples in California).

In recent years researchers have been starting to peel back the layers of complexity of how health is impacted by marriage for same-sex couples. While there are some similarities in the relationship between health and marriage among same-sex couples as with opposite-sex couples, there are also distinct differences. For married couples in same-sex, as in opposite sex marriages, women are more likely than men to manage or control their spouse's health, however this is more common with women in opposite-sex marriages than in same-sex marriages (Umberson, Donnelly and Pollitt 2018). Umberson, Donnelly and Pollitt also found that while men and women who were in same-sex marriages would employ indirect tactics to influence the health habits of their spouse, women were more likely than men to do so (2018). In addition to the differences

in methods of control, they also found that same-sex couples were more likely to have similar health habits as opposed to opposite-sex couples who are more likely to have very dis-similar health habits.

Whether or not same-sex couples police the health habits of their spouses in the same ways or in different ways as opposite-sex couples, they are more likely than opposite-sex couples to come in to those relationships with a history of risky behaviors. Sexual stigma, stigma that is associated with sexual identities other than those which are heteronormative, is associated with negative behaviors of homosexuals as they "come out" and relearn their own identities and how they fit in to their own lives as well as their communities and the world. These behaviors may have lasting physical and mental health impacts (Herek 2007; Bruce and Harper 2011; Herek 2011; Frederick 2014). The more of this type of stigma a person is exposed to or internalizes, the higher the odds of elevated levels of risk behaviors later in life as well as at the time the sexual stigma is experienced (Herek 2007; Preston et al. 2007; Baiocco, Argalia and Laghi 2014).

Gays and lesbians are more likely than heterosexuals to binge drink, smoke, use illegal substances, and engage in other risky behaviors (King, Dube, Tynan 2013; Gonzales and Henning-Smith 2017; Fish, Hughes and Russell 2018; Cochran et al. 2004; Schuler, Stein and Collins 2019). These risky behaviors can cause or complicate health issues later in life (Fredriksen-Goldsen et al. 2012; Dai and Meyer 2019). The average age of individuals in same-sex relationships is slightly lower than the average age for opposite sex couples; 44.7 years for same-sex couples vs 49.6. years for opposite-sex couples (LGBT Demographic Data Interactive January 2019). The length of relationship

before cohabitation or marriage is statistically the same for opposite and same-sex couples (Orth and Rosenfeld 2018). Thus, the risky behaviors mentioned are behaviors that exist in adulthood for sexual minorities. Schuler, Stein and Collins (2019) found that for gay and bisexual men as well as lesbians behaviors such as smoking, marijuana use, and illicit drug use (especially among gay and bisexual men) were higher across all age groups relative to same-aged heterosexual men and women. What is not known is whether or not these risky behaviors that are engaged in before marriage are mitigated by marriage and if the health impact is also mitigated (Du Bois, Legate and Kendall 2019).

Furthermore, while there are significant gaps in existent literature in health outcomes and same-sex marriage, there is research on the economic impact of same-sex relationships. Some of the earliest economic research that explored earnings and sexual orientation indicated a negative impact on earnings for gay men and, with the lesser confidence, for lesbians when compared to heterosexuals (Badgett 1995). More recent research, however, shows that the wage gap is narrowing for partnered gay men when compared to cohabiting heterosexual men (Allegretto and Arthur 2001). While society becomes more open and inclusive of non-heteronormative relationships researchers see changes in the economic impact of sexual orientation. For example, Cushing-Daniels and Yeung (2009) and Baumle and Poston (2011) found a wage premium instead of a penalty for lesbians compared to married heterosexual women in their research. This may be, at least in part, due to the lower likelihood of lesbians to work part time or exit and reenter the workforce than heterosexual women (Antecol, Jong, and Steinberger

2007; Baumle and Poston 2011). For these reasons, it could be speculated that without a wage penalty, partnered and married lesbians may have more disposable income that can be used to plan, prepare and intentionally create families in more stable financial environments.

Additionally, little research has been conducted on the impact of marriage for women who marry women as compared to men who marry men. Research on these topics will certainly allow greater insights as to how marriage may work to impact quality of life and may well identify a "lesbian paradox" wherein women who marry women benefit more than men who marry men. This also might mean that women who marry women will therefore live longer than men who marry men, and will live longer than lesbians who cohabit with but do not marry women. It is of great sociological and demographic importance to determine if there are advantages to one group over another in same-sex marriage.

2. SEXUAL ORIENTATION: UNDERSTANDING IT, DEFINING IT, AND MEASURING IT

In this chapter I will: 1) discuss how sexual orientation and sexual minority status is understood and impacted through interactions in society and; 2) detail how sexual orientation is measured in various surveys. I will then outline how these measurements will inform the decision on who is included in the sample for this research.

2.1. Sexual Orientation

Sexuality and sexual orientation are understood through interactions, self-identification, and social expectations of performance (Laumann et al. 1994). Using social psychology we are better able to understand the creation and fluctuation of sexual orientation in different settings. We are also able to determine how society views those orientations, how social value is determined and how status is impacted by deviating from the "normal." A great deal of social psychological research has been conducted examining sexual stigma and the experiences of sexual minorities and the negative stereotype(s) associated with minority sexual status (Herek 2009).

Stigma is the resulting condition or status as a result of receiving negative messages from others (Goffman 1963). A person with stigma is considered different from the normal or what is expected exhibits characteristics which are undesirable. This makes those with stigma considered "bad" or unwanted by the majority of society (Goffman 1963). This fundamentally negatively establishes someone's social capital as well as their social status (Goffman 1963; Herek 2011). This lower status limits a person's access to power and resources enjoyed by those with high levels of status and

capital. The lowered social status and the lack of access can create poor mental health habits and contribute to self-loathing and, at the very least, can lead to reduced self-esteem (Herek 2011). The actions taken by "normals'' (Goffman 1963: 5) can restrict and otherwise impede the life chances of those who are stigmatized

In this section, I will explore two different social psychological theories that help us better understand the stigma associated with non-heterosexual sexual orientation through stereotypes, and status: Status Characteristics Theory and Stereotype Content Model.

To begin, social psychology connects stereotypes, orientation and status through status characteristics theory (Childers 2000). This theory is used to describe how a person comes to judge their own performance and the performances of others through a set of master status characteristics. These characteristics may be gender, race, sex, educational level, career or even level of attractiveness. We judge others based on the comparison of our status characteristics to theirs (Berger and Zelditch 1993). Through social interaction and the use of prescriptive stereotypes, what a person should be like and how they should behave, and proscriptive stereotypes, what a person should *not* be like and how they should *not* behave, we develop expectations of performance that can guide our understanding of sexual orientation (Prentice and Carranza 2002; Mize 2015). People judge the performance of orientation by others and form their ideas of sexual orientation based on social interactions. These interactions guide an individual to create a mental concept of themselves, an identity, in comparison to others and use past experiences and interactions to judge the identity of others.

Status characteristics theory focuses on how ideas of status are created through interactions (Berger et al. 1977). Individuals form ideas of each other through various interactions and these ideas inform opinions of ability, performance and attitudes about behavior and expected behaviors (Foddy and Smithson 1996). There are two types of status characteristics in this theory: diffuse and specific. Diffuse characteristics are based on general status such as gender, race, and sexual orientation, whereas specific focuses on specific abilities related to a given task, job, or situation. Together, diffuse and specific characteristics give a clear outline of performance expectations (Berger et al. 1977). Berger and coauthors suggest that racial groups, gender and education are types of diffuse characteristics where things such as ability in certain areas such as math and science or baking and artistry would be specific status characteristics. Diffuse characteristics start to have an impact earlier in a given situation and those impacts are stronger than are specific characteristics (Berger et al. 1977).

Diffuse status characteristics theory is particularly of interest as sexual orientation is often recognized by others in terms of performance, as is gender (Grimes 2016). Webster, Hysom, and Fullmer (1998) found support of the theory that sexual orientation is a diffuse status characteristic in U.S. culture: respondents have differing performance expectations of gays and lesbians. They found that the respondent's views of gays and lesbians were influenced by the respondent's preconceived ideas of what and who gays and lesbians were and their lower status in the heteronormative hierarchy. This influenced what the respondents thought the capabilities of gays and lesbians, compared to heterosexuals, should be. Essentially, the idea of what and who a gay or lesbian could

and should be was intertwined with the respondents' ideas of the placement of gays and lesbians in a heteronormative hierarchy for careers, social status, income, and success. Those ideas influenced the respondent's expectations of the men and women in the study, though it was more pronounced for the male respondents in the survey than females (Webster, Hysom, and Fullmer 1998). To measure this, they measured the expectation formation for pairs of vignettes – the vignettes differed only on sexual orientation. One pair was contrasting a heterosexual male to a gay male, the other pair was contrasting a heterosexual woman to a lesbian woman. They found that while both male and female participants had lower performance expectations of lesbian women compared to heterosexual women, only male participants evaluated the performance expectations of gay men lower than that of heterosexual men. Similar conclusion is made also by Childers' re-analysis of these original results (2000). Webster, Hysom and Fullmer (1998) also found that sexual orientation, indeed, acts as a status characteristic, even among urban population. The performance expectations of a gay dishwasher were lower than the performance expectation of a dishwasher whose sexual orientation was not revealed.

Using status characteristics theory, we may see that sexual orientation can have positive or negative values based on cultural beliefs of worth and capability (Childers 2000; Mize 2015). Further complicating the impact of status characteristics theory on the status of gays and lesbians is the stereotype associated with being a gay man because gay men experience a larger negative impact than do lesbians (Johnson 1995). If sexual orientation is a status characteristic in the U.S., then it affects those in the minority

sexual orientation through everyday interactions. In the health field, for example, in interactions with doctors. Doctors might have lower health performance and health maintenance expectations of non-heterosexuals and, therefore, their complaints and explanations might not be taken as seriously as those of a heterosexual patient. Similarly, when advocating for one's partner, a same-sex partner might not be taken as seriously as an opposite-sex partner (because of the lower performance expectations of gays and lesbians).

Another way that we see connections in stereotypes, orientation and status is through the Stereotype Content Model (Mize 2015). The stereotype content model argues that all group stereotypes, identified by a society or culture, are arranged in a hierarchy that emphasizes the combination of warmth and competence (Mize 2015). For example, a society may view female politicians as competent but lacking warmth and view them with pity or contempt while they view male politicians as warm and competent and view them with admiration. Mize (2015) has undertaken extensive research using this model and was able to predict stereotypes of those with non-heterosexual orientations based on the beliefs and cultural understanding of sexuality and social status. Mize and Manago (2018) found that even as gay men and lesbians are stereotyped negatively when compared to heterosexuals, bisexuals are stereotyped differently and even more negatively. Their results suggest that all sexual minorities are seen as less positive than heterosexuals, and that status groups based on orientation are seen as stereotyped with distinct undesirable characteristics. For example, they found that gay men are seen as less competent in the workplace than heterosexual men, and

that lesbians are seen as cold when compared to heterosexual women. These results, using the SCM model, show that even if a stereotype is not believed, all members of a society are consciously and unconsciously influenced by the stereotypes associated with a particular social group.

There is a great deal of research on the intersection of gender, orientation, and sex (Baumle, Compton and Poston 2009; Laumann et al. 1994; Grimes 2016; Michales 2013; Poston and Chang 2015; Durso and Gates 2013; Chandra, Copen and Mosher 2013). Additionally, there is a great deal of research on the intersection of orientation, stereotypes and sexual stigma (Laumann, Gagnon, Michael 1994; Laumann et al. 1994; Gates 2013, Gates and Ost 2004). We need more research in the areas of gender, orientation and positive or negative impacts of sexual stereotypes in order to better understand the different experiences of gays and lesbians in the U.S. Attention has recently been given to this area that indicates that the experiences of all LGB Americans are not shared experiences (Mize 2015). This dissertation will help shed light on how their experiences and outcomes differ and possibly on how stereotypes are changing and how status in America, based on sexual orientation, is also changing.

2.1.1. Defining Sexual Orientation

Now I will discuss and expand upon what is known about different sexual orientations and how they have been defined and measured over time. I will go into some detail in this section about what is not known about how sexual orientation varies and a few of the ways it can be defined. The majority of this section will rely upon

landmark research on social understanding of sexuality conducted, by Laumann et al. (1994) as well as the research on asexuality by Anthony Bogaert (2012).

Bogaert identified seven dimensions of sexuality in his work on asexuality: attraction, arousal, behavior, cognition, desire, identity and pleasure.

Romantic Attraction and sexual attraction are closely related and at times, intertwined and one may influence the development of the other (Diamond 2003, Bogaert 2012). Diamond outlined romantic attraction and love as a feeling of emotional attachment that is associated with pair-bonding (2003). Romantic attachment and attraction, therefore, refers to the attraction experienced to those with whom a person may fall in love. Sexual attraction, by contrast, refers to the lust or physical attraction one experiences. Bogaert equates this with sexual orientation (2012, 11). While romantic and sexual attraction are closely related, they are not always seen as overlapping as in instances of asexuality where romantic attraction may exist, but sexual attraction does not.

Arousal refers to the physical aspect of sexual response, such as the genital response to sexual thoughts or a physical touch. It refers mainly to bodily responses such as the engorgement of a penis or vaginal lubrication. Since a physical reaction occurs due to arousal, it is the one dimension of sexuality that can be measured, and has been, extensively, starting with Kurt Freund who developed the phallometric method wherein a device that was placed around the penis to measure changes in blood flow (1991). Later the vaginal photoplethysmography, method was developed wherein a device that was designed to be inserted into a vagina to detect changes in genital blood flow in

women (Palti and Bercovici 1967). There is, of course, a more subjective version of measurement when it comes to arousal, which is how a person feels when aroused (Bogaert 2012, 15). A sense of arousal, or how a person feels, is generally accepted as a reliable indicator of arousal though physical responses of arousal and psychological arousal do not always line up for women (Heiman 1977).

Behavior, it would seem, is a simple and reliable measurement of sexual identity. However, that is not always the case. What a person does is not always what a person wants to do, and instead it is sometimes a compromise between sexual partners (Bogaert 2012, 18). For example, what two spouses may do sexually may be driven by the desires of one partner while the other partner acquiesces or compromises in order to be a loving and supportive spouse. Likewise, a person may not have access to sexual partners or be constrained socially into behaving in ways that they do not find satisfactory as in the case of teenagers with parents who disapprove of adolescent sexual encounters, those who abstain from sex completely before marriage, or those who choose celibacy for religious purposes.

The dimension of cognition refers to the processing of information and knowledge about sexual scripts or the rehearsal of those scripts. To put it simply, this refers to what a person thinks about when they think about sexual activities or sexual fantasies.

Desire is the next dimension identified by Bogaert as an important measure of sexuality. Rosen (2000) defined it as a feeling of wanting to have or at least receptive to a sexual encounter with a partner and/or the fantasizing or thinking about sex. Bogaert

demonstrates how desire is related to all the above mentioned dimensions but also can stand alone when "decoupled" from biological aspects such as hormones (an increase in testosterone in women or a decrease of it in men). When these biological aspects were controlled for in conversion therapy, attraction to men or women didn't intensify or diminish, but desire, or sex drive, did (Bogaert 2012, 21).

Sexual Identity refers to the label a person uses to express their own identity. While Bogart agrees that using a persons' self identity is the most respectful way to define said persons' sexuality, he argues that it might not be the most accurate. He asserts that it does not take in to account the level of comfort in "coming out", the knowledge of all available labels and orientations, as well as other political and social factors (Bogaert 2012, 23).

Finally, Bogaert discusses the final dimension of sexuality: pleasure. He does not go in to lengthy discussion of pleasure as a completely stand alone aspect of sexuality though he does hypothesis that pleasure can be derived by a heterosexual man looking at a beautiful woman without every engaging her in as much as a conversation.

Historically, sexual orientation has been understood by social science researchers in terms of self-reported *sexual identity* as other measures are not easily discerned from nationally representative surveys such as the Decennial Census. When possible, data that also include the two additional dimensions of *behavior* and *sexual attraction* are said to give a better representation of sexual orientation (Laumann et al. 1994; Baumle, Compton and Poston 2009; Poston and Chang 2015). This triangulated definition of sexual orientation would identify someone as gay or lesbian if they had ever had sexual

contact with another member of the same sex, and/or if they identified as gay or lesbian, that is not heterosexual or straight, and/or if they answered "mostly attracted" or "only attracted" to members of the same sex (Center for Disease Control and Prevention 2015). This conceptualization of sexual orientation excludes bisexuals and excludes those who consider their sexuality to be more fluid than static. It also excludes other identities such as asexuals, pansexuals, those who consider themselves to be hetero-flexible and so forth.

Also excluded in the so-called trifecta of sexual orientation is the determination of orientation based on partnership. Many researchers have only been able to establish sexual orientation based on the sex of the respondent and the sex of the partner or spouse on national surveys such as the Decennial Census, the American Community Study and other Census-like surveys. However, this can lead to measurement errors. In the case of the 1990 Census, the sex of the spouse or partner was changed if it otherwise would have indicated a same-sex spousal relationship (O'Connell and Lofquist 2009). In the 2010 Census another measurement error was discovered. The confusing placement of options for marital status was attributed to high rates of heterosexual couples being counted as same-sex couples based on sex of partner and partnership status (Demaio, Bates and O'Connell 2013).

Excluding all these different orientations creates problems in the accurate analysis of those who consider themselves to be anything except heterosexual. For this reason, I will restrict my analytical research to just those respondents who self-identify as gay men or lesbians who are cohabiting or married to a same sex partner. I cannot

assume that the experiences of bisexuals married to or cohabiting with opposite sex partners are the same as the experiences of bisexuals married to or cohabit with same-sex partners.

2.1.2. Measuring Sexual Orientation

Sexual orientation has been historically difficult to measure empirically in the United States and elsewhere because the gay and lesbian population has been largely unseen and difficult to survey despite living and loving openly in society (Fassinger 1991; Maisel and Fingerhut 2011). Data collection on this population has been difficult in particular as there are multiple reasons that might cause a non-heterosexual to decline to disclose sexual identity and therefore not be represented in surveys or studies of the lesbian, gay, bisexual and transgender (LGBT) communities (Herek 2009; Maisel and Fingerhut 2011). Sexual minorities are at a greater risk of sexual stigma with, sometimes, dire consequences ranging from psychological distress to forming negative feelings about their own identity and worth, resulting from their admitting their sexual orientation (Herek 2011). The lack of representation through surveys at local, state and national levels makes this population extremely difficult to understand as representation is necessary, for successful, generalizable, research (Peplau and Fingerhut 2007; Dee 2008; Maisel and Fingerhut 2011).

Previous studies have, generally, utilized data from small samples (Dee 2008), samples from countries where same-sex marriage has been a legal option longer than it has been in America (Baiocco, Argalia and Laghi 2014), or researchers used qualitative

methods, many using a snowball methodology where the results are not generalizable (Rostosky et al. 2007).

There have been steps taken in national surveys such as the National Survey of Family Growth (NSFG) to increase the confidentiality and thereby increase the levels of accurate responses to questions regarding sexual identity using techniques such as Computer Assisted Personal Interview (CAPI) and Audio Computer Assisted Self Interviewing (ACASI). These techniques allow the respondent to answer the most sensitive, taboo or controversial questions read to them by a computer program in the absence of the interviewer (Lepkowski et al. 2010). This is thought to increase confidence in the respondent with respect to the anonymity of the responses and increase accuracy in the answers, though the placement of many of the questions asked in the ACASI section is controversial in itself.

Some demographers familiar with the impact of stigma on behavior have argued that the inclusion of questions on sexual identity, behavior and attraction in the same sections with questions pertaining to experiences with unwanted sexual activity and drug use tends to increase the stigma of sexual minorities (Badgett and Goldberg 2009). The placement of the questions on sexual identity, behavior and attraction in the section asking the most "sensitive" of questions, adds to the message that non-heterosexual identities are not normal identities. There is a growing body of literature outlining better options for the placement of these questions that will, if not reduce the stigma associated with being a sexual minority, begin to normalize the question itself (Badgett and Goldberg 2009; Cain 2012).

I expect that there will continue to be an increase in the numbers of non-heterosexuals represented in the national surveys, year over year, especially since the year of 2015 when same-sex marriage was legalized nationwide. As of 2018, the estimation of the LGBT population had risen to 4.5% from 3.5 in 2012 (Newport 2018). It is likely that if all the different conceptualizations of sexual minorities (bisexuals, asexuals, etc. in addition to gays and lesbians) and the different types of measurements (identity, behavior, attraction, and relationship) are taken into account, the actual proportion of non-heterosexuality might come close to the 10% estimated by Kinsey (1948).

It is possible that with the legalization and social acceptance of same-sex marriage, we will begin to see the reduced levels of sexual stigma for those with non-heterosexual identities (Gorton 2011). Experiences of sexual stigma may steadily decrease in America, and with it, levels of risky behavior that lead to poor health. This has important implications for the quality of lives for all those who consider themselves to be gay, that is not straight, or not exclusively heterosexual, in and out of marriage. We well may see risky behaviors of those in sexual minorities decrease and levels of HIV also decrease accordingly (Preston et al. 2007). The increase in quality of life for sexual minorities may then lead to higher rates of selection into same-sex marriage as legal status may confer and reinforce a sense of normalization. An increase in quality of life and then possibly marriage should, therefore, show an increase in health status. Chapter 1 covered, at length the relationship between marriage and health not only in terms of access but spousal monitoring of health habits as well. As men are historically the

beneficiary of this spousal support in marriage (Umberson, Donnelly and Pollitt 2018), it is my position that women who marry women will experience this health boost more than men who marry men and that both groups, married and cohabiting, will experience these health boosts differently.

2.2. Conclusion

In conclusion, sexual orientation has been historically difficult to research. Given the amount of stigma associated with a non-heterosexual orientation or identity that can impact many aspects of a person's wellbeing and overall life, it is easy to understand why this marginalized population has hidden in the data closet for so long. I predict that with the reduction in negative stereotypes and increased acceptance and therefore in status of homosexuals the crucial answer to whether or not women benefit more from same-sex marriage in terms of health can be detected. In the following chapters I will detail the research I have conducted in an attempt to begin to answer this, and other, sociologically and demographically important questions.

3. HYPOTHESIS, DATA AND METHODS

Research comparing same-sex cohabiting and opposite-sex married individuals finds lower levels of self-reported health for cohabiting gays and lesbians (Liu, Reczek and Brown 2013). Furthermore, research has found, in general, that women tend to self-rate their health lower than do men (Gorman and Read 2006). Additionally, more recent research shows that sexual minorities have stratified levels of self-rated health with bisexuals having significantly lower levels of health than gay men and lesbians (Conron, Mimiaga and Landers 2010; Veenstra 2011; Gorman et al. 2015). However, there is not much research on how being married affects the health of those who are in same-sex partnerships. This research seeks to fill that gap.

In this chapter, I first outline the hypotheses I will be testing. Then I discuss the data and sample I used in my research. I next describe and define my independent and dependent variables. I end the chapter with a discussion of the statistical methods employed in my research.

3.1. Hypotheses

H1: Those in same-sex marriages have higher self-ratings of health than those in same-sex cohabiting relationships.

My first research hypothesis is that those in same-sex marriages have higher self-ratings of health than those in same-sex cohabiting relationships. With this hypothesis I will be testing whether there is a positive relationship between marital status and self-reported health status. The validity and usefulness of self-reported health as a measure of

actual health has been questioned due to correlations with mental illness (Mechanic 1980). However, the argument against using self-reported health as a valid measure is due to a possible over reporting of negative health status that are associated with mental illness such as fatigue, depression, and anxiety. Nevertheless, self-rated health is considered a robust predictor of actual health status and mortality (Idler and Benjamin 1997). Furthermore, self-rated health is found to be closely associated with doctors' diagnoses (Jenkins et al. 1980; Orts et al. 1995). It is a widely accepted measure of an individual's general health and is a reliable predictor of survival in populations even when controlling for known health risk factors (Rogers, Hummer and Nam 2000).

Research on relationships and health outcomes informs us that those in marriages, be they same-sex or opposite-sex marriages, often fare better than those who cohabit (Waite and Gallagher 2000; Waite and Leher 2003; Cherlin 2013). For this reason, we should see that those in same-sex marriages will have higher levels of self-rated health than those in same-sex cohabiting relationships.

H2: Those in female-female same-sex marriages have higher self-ratings of health than those in male-male same-sex marriages.

My second hypothesis is that those in female-female same-sex marriages have higher self-ratings of health than those in male-male same-sex marriages. In this hypothesis I will examine whether women who marry women benefit more from marriage than do men who marry men. As noted in chapter 1, women in same-sex

marriages are more likely than men in same-sex marriages to manage or control their spouse's health either with direct or indirect tactics (Umberson, Donnelly and Pollitt 2018). If women, more than men, police and manage the behavior of their spouses in same-sex as well as opposite-sex marriages, this should lead to higher self-ratings of health for women in same-sex relationships than for men in same-sex relationships.

For my other hypotheses, I shift the dependent variable from self-rated health to specific health outcomes or health risk variables. As physical health can be measured in many ways, from a doctor's rating of a patient's health to self-reported health and then biological markers such as hypertension, they are often included in research on marital quality and health for those who are married (Robles 2014). Furthermore, research has shown that those identifying as a sexual minority are at greater risk of hypertension and problem drinking as well as other risk factors as a result of possible self-medicating strategies used to deal with issues related to minority status (Cooper, Russell and George 1988; Dermody et al. 2014; Frost, Levavot and Meyer 2015). Using specific health risk variables will allow for a deeper analysis of health beyond just self-rated health, by marital status and type of same-sex relationships, either female/female or male/male.

Frech, Lynch, and Barr (2016) found that residential same-sex cohabitation, especially for women, is associated with better cardiovascular health. Due to the legal limitations on same-sex marriage at the time of their study, they were unable to study whether or not the result would apply to those in same-sex marriages (Frech, Lynch and Barr 2016). With the SCOTUS ruling in 2015 allowing for same-sex marriages, such health outcomes can now be examined. That leads me to my third hypothesis, that those

in same-sex marriages have lower incidences of high blood pressure than those in same-sex cohabiting relationships. Here I will examine whether those who choose to marry benefit from marriage in terms of lower rates of hypertension.

H3: Those in same-sex marriages have lower incidences of high blood pressure than those in same-sex cohabiting relationships.

In my fourth hypothesis, I will examine whether women who marry women benefit more from marriage, in terms of lower incidences of hypertension, than do men who marry men. Existing research indicates that women, specifically women who are pre-menopausal, have lower blood pressure than men at the same age (Yanes and Reckelhoff 2011). Marriage, for heterosexual men, also seems to have protective factors, as never married men have higher risks for developing hypertension while women who are married to men have higher risks for hypertension than never married or widowed women (Ramezankhani, Azizi, and Hadaegh 2019). If marriage to someone of the opposite sex, for women, is a risk factor for developing hypertension, then perhaps women who are married to women have lower risk of developing hypertension. My fourth hypothesis, therefore, is that those in female-female same-sex marriages will have lower incidences of high blood pressure than those in male-male same-sex marriages.

H4: Those in female-female same-sex marriages have lower incidences of high blood pressure than those in male-male same-sex marriages.

In my fifth and final hypothesis, I will analyze whether marriage for same-sex couples has a protective effect on health through examination of risky behaviors when compared to cohabiting same-sex couples. A wealth of research indicates that smoking is more prevalent in sexual minority populations than among the general population and among heterosexuals (Stall et al. 1999; Valanis et al. 2000; Aaron et al. 2001; Cochran et al. 2001; Gruskin et al. 2001; Tang et al. 2004; Greenwood et al. 2005; Conron, Mimiaga and Landers 2010). Similarly, gay men and lesbians are more likely than heterosexuals to engage in heavy drinking (Nawyn et al. 2000; Valanis et al. 2000; Gruskin et al. 2001). However, research indicates that those in opposite-sex marriages are less likely to smoke or binge drink than those who are unmarried or those who cohabit (Umberson 1992; Li et al. 2010). My fifth hypothesis, therefore, is that those in same-sex marriages are less likely than those in same-sex cohabiting relationships to engage in binge drinking or to smoke cigarettes.

> *H5: Those in same-sex marriages are less likely to be engaging in the risky behaviors of binge drinking and smoking than those in same-sex cohabiting relationships.*

3.2. Methodology

3.2.1. Marriage Data and Sample

While the National Survey of Family Growth (NSFG) is well suited for identifying and analyzing sexual orientation based on the trifecta of sexual orientation, it is not well suited for identifying patterns in same-sex marriage. The current wave of

publicly available data that would include respondents in same-sex marriages and same-sex cohabiting relationships following the repeal of the Defense of Marriage Act (DOMA) in 2013 and after the Supreme Court decision on marriage equality in June of 2015 (Obergefell Et Al. v. Hodges 2015), omits legally married same-sex couples. While sexual orientation and self-reported identity can be used to identify those who are in same-sex relationships, the cell counts for those who are married are so small that they are not released publicly due to disclosure risk. For these reasons, I use the National Health Interview Survey (NHIS), 2016-2018 to compare the health outcome indicators of those age 18 and above in same-sex marriages and same-sex cohabiting relationships. By doing this I will examine how and if gays and lesbians benefit from marriage, as compared to those who cohabit, and how this effect differs between men and women.

The purpose of the NHIS is to provide a broad range of information on health topics in order to identify health trends in the population of the U.S. The NHIS is a national health survey conducted by the Centers for Disease Control and Prevention. This survey has been conducted continuously since 1957 and releases data annually. The expected annual sample size is approximately 35,000 households containing approximately 87,500 individuals (Centers for Disease Control and Prevention 2015). The data are collected via interviews conducted by roughly 600 Census Bureau employees through computer assisted personal interviewing (Centers for Disease Control and Prevention 2017). The current household sample design does not oversample any race, ethnic, or sexual orientation groups. However, there is a higher probability that those over 65 years old will be selected for participation.

Table 1. Prevalence of Gay Men and Lesbians Age 18 and Over in NHIS Data.

	Gay Men		Lesbians	
Year	#	% of men	#	% of women
2013	2,000	1.8%	1,729	1.5%
2014	2,097	1.9%	1,659	1.4%
2015	2,046	1.8%	1,724	1.4%
2016	1,854	1.6%	1,724	1.4%
2017	2,307	2.0%	1,987	1.6%
2018	2,250	1.9%	1,705	1.4%

Note: Current study uses years 2016-2018.

The question regarding sexual orientation in the NHIS has remained the same in each of the survey waves since it was introduced in 2013. The question is worded as follows: “Which of the following best represents how you think of yourself?”. The answer choices have also remained the same in each of the surveys. For men, the choices are “gay”, “straight, that is, not gay”, “bisexual”, “something else”, “I don’t know the answer”, “refused”, “not ascertained”. The answer choices for women are only different in the first two answer choices. They are “lesbians or gay” and “straight, that is, not lesbian or gay”. The survey for 2013 captured data representing 2,000 gay men (1.8% of all men surveyed) and 1,729 lesbians (1.5% of all women surveyed). In 2014, 2,097 men identified as gay making up 1.9% of all men surveyed, and 1,659 women identified as lesbians representing 1.4% of all women surveyed. In 2015 the numbers changed very little with 2,046 gay men representing 1.8% of all men surveyed and 1,724 lesbians making up 1.4% of all women surveyed. The numbers representing gays and lesbians went down in 2016 with 1,854 gay men representing 1.6% of all men surveyed and 1,724 lesbians representing 1.4% of all women surveyed. In 2017 and 2018 there was an increase in representation of gay men in the survey with 2,307 gay men representing 2.0% of all men surveyed in 2017 and 2,250 in 2018 representing 1.9% of all men surveyed. The numbers stayed largely the same for women in 2017 and 2018 with lesbians making up 1,987 (1.6%) and 1,705 (1.4%) respectively.

I will be using the 2016, 2017, and 2018 waves of the NHIS. These waves of data are especially important because they are the first to include same-sex marriages after the Supreme Court ruling in 2015 made marriage accessible for all Americans

(Obergefell Et Al. v. Hodges 2015). The survey for those years asked the sex, sexual orientation, and marital status of the respondent. It asked the same questions for the spouse or partner of the respondent. Using these answers I was able to determine if a man who identified as gay or a woman who identified as a lesbian was married to or cohabiting with a partner of the same sex. For those that indicated that they were married but not living with their spouse, the gender of the spouse could not be determined and so those respondents were excluded from the study. Using this method, I was able to identify 123 gay men who were cohabiting with another man who was identified as their partner, and 118 who were married to another man. I was able to identify 119 cohabiting lesbians who indicated that their partner was a woman and 153 who were married to another woman. This will be my analytical sample. I have excluded those who identified as bisexual as research indicates that the health outcomes for bisexuals can be largely different than for lesbians and gay men (Lindley, Walsemann and Carter 2012; Sabia 2014; Gorman et al. 2015; Mize 2015).

3.3. Sample Selection

To test the hypotheses stated above, I need to be able to compare married gays and lesbians in a same-sex marriage to cohabiting gays and lesbians in a same-sex cohabitation. This is possible in 2016-2018 NHIS data, but not straightforward. I explain the procedure for this below.

NHIS organizes its data in Person and Sample Adult files. The Person File variables are made up from the Family Core section of the NHIS. This information is collected for all household members and includes variables regarding sex, race,

ethnicity, birthdate, age, and relationship of person in the roster to household and family reference person. The Sample Adult File includes information about one adult age 18 or order in the household. The variables in this section include sex, age and birthdate for validation as well as variables pertaining to health conditions and health behaviors. These variables include cigarette use, alcohol consumption and sexual orientation. Thus the Sample File contains my main outcome variables.

First, I used a 1:1 merge to combine the Person and Sample Adult files for each of the years of interest. This allowed me to use the self-identification question from the Sample Adult File regarding sexual orientation to identify those who consider themselves to be gay or lesbian men or women. Sexual orientation is measured by a survey question "Which of the following best represents how you think of yourself?" The orientation options are "Lesbian or gay", "Straight, that is, not lesbian or gay", "Bisexual", "Something else", "I don't know the answer", "Refused", and "Not ascertained". I used those who answered "lesbian or gay" to begin to identify my sample.

Next, I wanted to see whether gays and lesbians are cohabiting or married to same-sex partners, because it is conceivable that someone self-identifies as gay or lesbian, but is still married or cohabiting with an opposite-sex partner. Since the basic information on all the people in the family who live in the same place is provided in the Persons file, I was able to ascertain the gender of the partner from that file. For that, I first combined all Persons files across three years. I linked the partner to the respondent and the gender of the partner from that file (partnersex). In the Sample Adult file there

exists a variable identifying the number of the person in the family who is Sample Adult's spouse or partner. Using that number, I merged in the data from Persons file. Thus, I ended up with the original Sample Adult sample size, but with an additional variable (partnersex) that indicates the gender of the spouse or partner.

A respondent who identified as lesbian or gay, and also indicated that their partner or spouse was of the same sex and resided in the same household was included in the sample. While many of those persons excluded from this study may fall into the gay or lesbian category based on the remaining dimensions of sexuality, the data in the NHIS allow for self identification to be used. One might expect that behavior can be assumed based on self identification and the gender/sex category but without knowing what sexual activities are engaged in, the dimension of behavior, along with attraction, pleasure, desire, cognition, and arousal cannot be employed. However, the dimension of self identification along with the measures taken to exclude those who can easily be identified as not strictly homosexual allow for a robust examination of the health outcomes of gays and lesbians in same-sex relationships. There are a total of 268 lesbians and 237 gay men included in the study.

3.4. Variables

3.4.1. Main Independent Variables

The main independent variables in this study are self reported sex (males or females) and whether or not the respondent is in a same-sex marriage or in a same-sex cohabiting relationship. Of the 268 married or cohabiting lesbians in the study, 152 are in same-sex marriages and 119 are in same-sex cohabiting relationships. Of the 237 gay

men included in the study, there are 114 in same-sex marriages and 123 in same-sex cohabiting relationships. These data can be seen in Table 2.

3.4.2. Outcome Variables

I am using 4 distinct dependent variables to measure various dimensions of health: 1) self-rated health; 2) high blood pressure; 3) smoking; and 4) binge drinking. Self-rated health is measured by a survey question "Would you say your health in general is excellent, very good, good, fair, or poor?" The health status options are "excellent", "very good", "good", "fair" and "poor". Reverse recoding of this variable was done with lower values indicating worse health. Eleven are in the category of poor health, 47 have fair health, 114 have good health, 180 have very good health and 153 consider their health to be excellent.

The next outcome variable is high blood pressure. The survey question is originally worded as "Have you EVER been told by a doctor or other health professional that you had... Hypertension, also called high blood pressure?" with answer choices of "no" and "yes". A response indicating no history or present diagnosis of high blood pressure is coded as 0 and a 1 indicates is a history or a present diagnosis of such illness. After these coding measures were taken, 363 did not ever have a diagnosis of high blood pressure and 142 did.

The next two variables are those dealing with health risk behaviors, smoking and excessive drinking. NHIS is measuring smoking by asking whether or not the respondent has smoked 100 cigarettes over the course of their lives. Those who answered no, were considered non-smokers. Those who have smoked 100 cigarettes, but are not smoking

any more are also coded as non-smokers. Those who said they had smoked 100 cigarettes in their lives and also smoke currently either “every day” or “some days” were coded as smokers. A total of 416 respondents in my sample are non-smokers and 89 are smokers.

The final outcome variable deals with alcohol consumption. The variable identifies respondents stating they have had more than 4 or 5 drinks on average at a time when they were drinking in the last 30 days. The National Institute on Alcohol Abuse and Alcoholism, a branch of the National Institutes of Health, defines binge drinking as more than 4 drinks for women and more than 5 drinks for men in a given drinking session. I created a dichotomous variable to represent binge drinking where 0 represents less than 5 drinks for men and 4 drinks for women and 1 represents more than 4 or 5 drinks, depending on the sex of the respondent, consumed on average at a time.

To determine who to categorize as a binge drinker, I started with the question regarding whether or not a respondent ever drank more than 12 drinks in their entire life. I moved all those that said they did not drink (*alcstat*), either any more or that they never did, into the "no binge drinking" category. I took care to make certain those non-drinking people did not show up in the drinking categories in other questions. Similarly I moved all those that said they did not have any days in the past year where they drank 4/5 drinks (*alc5upy1*==0) into the "no binge drinking" category. I then checked to make sure those who answered no to the question about ever having 12+ drinks in any one year (*alc1yr* ==2) did not show up in any of the other heavy/binge drinking categories and then moved them to the "no binge drinking" category.

Next, I moved those that said they never drank in the past year (*alc12mno* =0) to the "no binge drinking category. Then I checked for consistency for those that answered none to the question about the number of days they drank 4/5 drinks in the past year (*alc5upn1* =0) and then I moved them to the "no binge drinking" category. I checked the consistency of those answers with the variable *alc5upt1* and moved those who had zero days of drinking more than 4/5 drinks to the "no binge drinking" category.

Finally, I double checked that those who answered "no" to the question about ever having more than 12 drinks in their entire life (*alclife* ==2) to make sure they were consistent across all other alcohol related questions and then moved them in to the "no binge drinking" category. After all that, I had 320 respondents in the "no binge drinking" category.

Now that I had my “no binge drinking” numbers, I moved to confirm the binge drinking numbers. I used the measure that asks the number of days in the past year where a respondent had 4+/5+ drinks. Those who answered indicating that they engaged in binge drinking 1 day or more in the last year were categorized as "binge drinkers". I also wanted to capture those who responded that they had 4/5 drinks more than zero times in the past month in order to make sure I wasn’t missing any cases. Those who indicated that they had 1 day or more in the past 30 days where they drank 4/5 drinks at a time were put into the "binge drinking" category. These coding decisions left me with a total of 318 gays and lesbians who did not engage in binge drinking and 187 who did.

3.4.3. Control Variables

I use several control variables such as race, ethnicity, age, education, household income levels as well as presence of children in the household. Using the variables of race and origin, I first created an eight category variable that indicates one's race and ethnicity. Thus, each racial group was first divided into Hispanic and non-Hispanic group. This resulted in eight categories: White Hispanic, White Non-Hispanic, Black Hispanic, Black Non-Hispanic, Asian Hispanic, Asian Non-Hispanic, and Other Hispanic and Other Non-Hispanic. These categories were collapsed to reflect Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other. Each racial category represents that category as compared to all other racial categories.

Education was collapsed into a dichotomous variable, distinguishing between those with (1) and without (0) the credential of a college degree (Ross and Mirowsky 2002). This gave me a total of 204 respondents without a college degree and 301 with a college degree. Along with education, I control for household income. Income is measured as total annual household income. The original survey data categorized income into six categories of $0 to $34,999, $35,000 to $74,999, $75,000 to $99,999 and $100,000 and over with a category for undefined and one for unknown. There are 59 in the lowest income bracket, 121 in the second bracket, 76 in the third, and 238 in the highest income bracket. There are 10 respondents in the category of "undefined" meaning they could not be coded in to one of the four preceding brackets and 11 who did not respond to the income bracketing questions. These 21 respondents represent the category of unknown. I created four dummy categories for income with the lowest income category as the reference group for each. The first group represents the category of income between

$35,000 to $74,999. The second group represents $75,000 to $99,999. The third represents $100,000 and above. The final category of income compares the undefined and unknown responses to the reference category of $0 to $34,999. I also control for age in years with a range of 18 to 82 and a mean age of 46.14.

Finally, I control for the presence of children in the household. Research indicates that some behaviors are moderated not only by marriage but by the influence of children under the age of 18 in the household (Kahneman et al. 2004; Sawhill 2014; Guner, Kulikova and Llull 2018). Therefore, I have included a variable to indicate children in the household. The original parenting variable (par_stat) was used to create a new child indicator variable. If a respondent indicated that a child under the age of 18 lived in the house, regardless of whether they were the parent or not, the new parent variable was given a value of 1. If the respondent indicated that there were no children under the age of 18 in the house the new child indicator variable was given a value of 0. These coding decisions left me with a total of 71 respondents with children under 18 in the house and 434 without.

3.5. Statical Analysis and Software

I am estimating ordered logistic regression equations to test my first two hypotheses. This will allow me to estimate models that predict the probability of respondents rating their health positively, that is with a higher category, than negatively, or a lower category. For the remaining hypotheses, I will be using binary logistic regression equations as the dependent variables are dichotomous. This will allow me to predict the log odds that a respondent will be in one of the two categories of the

dependent variable (Treiman 2009). This is the preferred method of statistical analysis for each of the different types of dependent variables. The estimated coefficients for the independent variables will be "analogous to OLS regression coefficients, and the dependent variable is the natural log of the expected odds of being in category 1 of the dependent variable rather than in category 0, conditional on the values of the independent variables" (Treiman 2009). Logistic regression uses maximum likelihood estimation as the main principle is to "maximize the likelihood of observing the sample data" (Treiman 2009).

To analyze the data and estimate the regressions I used StataSE 15.1 (StataCorp 2017). However, prior to beginning my analysis, I used the survey estimation procedure (*svyset*) in Stata to account for the multistage probability sampling design used in the NHIS (Treiman 2009; Centers for Disease Control and Prevention 2018). Otherwise the Stata software treats the survey data as a random sample of the population. However, in multistage probability sampling the units are randomly sampled leading to clustering. The variations within clusters are smaller than the variations across the populations. The *svyset* procedure will counter the multistage probability sampling and give results closer to what can be expected in a population (Treiman 2009). The 2016, 2017, and 2018 Household, Person, Sample Adult, Sample Child, and supplement public use files, provided for download by the CDC, contain the design variables necessary for variance estimation. PSTRAT is the stratum for variance estimation variable; PPSU is the PSU for variance estimation variable; and WTFA is the weight variable (Centers for Disease Control and Prevention 2018).

In my equations, I will mainly use odds ratios instead of log odds for my analyses (odds ratio is the exponent of the log odds). I will interpret the results of the logistic regression equations by mainly using odds ratios, which are the exponentiated logit coefficients. A one unit change in the independent variable results in an increase or a decrease in the relative odds of the outcome, net of the effects of all the other variables (Treiman 2009).

In this chapter I have outlined my five hypotheses and described the data used in this research. I have also detailed the sample, the creation and descriptions of the variables of interest. Finally I described the statistical methods used in my research. In the following chapter, I will present the results of my research.

4. RESULTS

In this chapter I present the results of regression equations for the hypotheses outlined in the previous chapters. We know from the literature focusing on heterosexuals, some of which I reviewed in an earlier chapter of this dissertation, that married persons are commonly better off in terms of health and health risk behaviors than persons who are not married. In this chapter, I test whether marriage has a similar effect for married lesbians and gay men when compared to cohabiting lesbians and gay men. In order to evaluate the effect of marriage on the health of lesbian and gay male populations, I have created a dummy variable that represents sex (0 = male, 1 = female) and a dummy variable for marriage (0 = cohabiting with same-sex partner, 1 = married to same-sex spouse).

Before conducting multivariate analysis, I investigate cell counts for each dependent variable by gender and marital status. While NHIS is a large-scale data, the sample analyzed here is restricted to a much smaller group of people. I limit the data to those who identify as gays or lesbians and who are in either a married or cohabiting relationship with a same-sex partner. This yields to only a sample of 505 respondents. Due to this small sample size, one needs to be careful in understanding how small cell sizes would affect the results. Table 2 separates the frequencies of all dependent variables by gender and marriage using unweighted data.

Table 2 shows that the smallest cell sizes are for poor health. Only 4 men and just 7 women reported poor health while 21 men and 26 women said their health was “fair”. Such small cell sizes can be problematic for multivariate analysis. For this reason, I

created a binary health variable with “Poor, Fair, and Good” =0 and “Very Good and Excellent” =1. I also created a health variable with four categories combining the two rarest categories or “Poor” and “Fair”. This will help me address the issue of small sample size and small numbers in the lowest health categories while still examining self-rated health and marriage for gays and lesbians.

For the multivariate analysis, I first estimate the logistic regression with only the married/cohabiting dummy variable in the equation. Then I add gender as well as control variables and estimate a series of nested logistic equations to see if the effect of marital status on health is changed or altered when the controls are added. I estimate binary logistic regressions for the dichotomized self-rated health variable, high blood pressure, smoking, and binge drinking. I also estimate ordered logistic regression predicting the 4-category self-reported health.

As Treiman has noted, with an ordered categorical variable, “the response categories … [are] ordered on some dimension [i.e., health] but where the distance between categories is unknown” (Treiman 2009, p. 342). Thus, we do not know whether the step from 1 (poor or fair health) to 2 (good health) is the same as the step from 3 (very good health) to 4 (excellent health), even though in the variable coding, both of these differences are 1.

Since the coding of this dependent variable is numeric and ordered, from 1 to 4, it may be tempting to use an ordinary least squares (OLS) framework to analyze its variation. However, as Long and Freese have noted, “an ordinal dependent variable violates the assumptions of the ... [OLS model], which can lead to incorrect conclusions

... Accordingly, with ordinal outcomes [such as the five or four-category self-rated health variable] it is much better to use models that avoid the assumption that the distances between categories are equal" (Long and Freese 2014:309), i.e., an ordered logistic regression model.

Therefore, I estimate ordered logistic regression equations with maximum likelihood for these models predicting the self-rated health outcome. In ordered logistic regression, an underlying probability score for an observation of being in, say, the highest response category, i.e., the "excellent health" category, is estimated as a linear function of the independent variables in the model and a set of cut points.

Table 2. Cell Count of Outcome Variables by Sex and Marital Status

	Male		Female	
	Married	Cohabiting	Married	Cohabiting
Binary Self-Rated Health				
Poor, Fair, or Good	38	35	54	45
Very Good or Excellent	76	88	98	71
4 Category Self-Rated				
Poor or Fair	13	12	20	13
Good	25	23	34	32
Very Good	38	44	61	37
Excellent	38	44	37	34
5 Category Self-Rated				
Poor	3	1	3	4
Fair	10	11	17	9
Good	25	23	34	32
Very Good	38	44	61	37
Excellent	38	44	37	34
High Blood Pressure				
No	74	78	115	96
Yes	40	45	37	20
Smoker				
No	102	91	133	90
Yes	12	32	19	26
Binge Drinking				
No	69	76	97	76
Yes	45	47	55	40

Cell counts calculated from unweighted data.
Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

4.1. Descriptive Results

Table 3 presents the descriptive data for all variables using unweighted data. Table 3.1 presents weighted percentages for all variables. All of the analyses use weighted data. With respect to marital status, 57 percent (unweighted) or 58 percent (weighted) of the lesbians and 48 percent (unweighted) or 50 percent (weighted) of the gay men are married. Most of the lesbians and gay men, just over 66 percent (based on both unweighted and weighted data) of the sample, self-report their health as either excellent or very good. The percentage of lesbians rating their health in the higher category is 63% (61% based on weighted data) compared to 69% for gay men (71% based on weighted data). Very few reported having poor or fair health; just over 12% of lesbians and only 11% of gay men (the same percentages in weighted data are 13% and 9%, respectively).

Most of the lesbians and gay men have never been told they have high blood pressure with only 21% of lesbians and 36% of gay men reporting that they had (in weighted data, these percentages are 23% and 31%, respectively). The percentages of lesbians and gay men who are current smokers are 17 and 19 (in weighted data, respectively, 14% and 18%). Just over a third (36% based on both weighted and unweighted data) of the lesbians are binge drinkers, as are the gay men (39% or in weighted data, 40%). Most of the lesbians and gay men are white, 75 percent and 73 percent, or in weighted data 73% and 70%, respectively. Only an unweighted 7% of both lesbians and gay men identified themselves as NH-Black (or 8% of lesbians and 7% of gay men in weighted data). Twice as many (13% in unweighted and 14% in weighted

data for lesbians and 16% in unweighted or 18% in weighted data for gays) identified as Hispanic.

Over half of both groups have high levels of education with 56% of lesbians and 63% of gay men in unweighted data (55% of lesbians and 63% of gay men using weighted data) having at least a bachelor's degree. Other researchers have found the same over-representation in different nationally representative samples such as the Behavioral Risk Factor Surveillance System (BFRSS), the Census and the General Social Survey (GSS). Black et al. (2000) found much higher levels of education for gays and lesbians than their heterosexual counterparts in the 1990 Census, the GSS, and the National Health and Social Life Survey (NHSLS) with 13% of gay men reporting post college education and nearly 24% of gay mean reporting having earned degrees, while the heterosexual married men in the same age and racial categories have lower rates at 10% and 17%, respectively. They found that nearly 14% of lesbians reported post college education and a whopping 25% reporting college education while their heterosexual counterparts reported just over 6% and 16% respectively (Black et al. 2000). It has been suggested that the cause might be the willingness of highly educated whites to identify as gay or lesbian more readily than those with non-White racial identities and lower levels of education in surveys such as the GSS or the Census, however Black et al. propose that gay men in fact accumulate more education than other men (sample size prevented the same to be said about lesbians) (2000). Indeed, Gorman and colleagues found a similar representation of white, well-educated gays and lesbians in the Behavioral Risk Factor Surveillance System spanning 2005 to 2010 with more

than half of the surveyed gay men and lesbians (55.7% for gay men and 57% for lesbians) reporting at least a college degree while 37.9% of heterosexual men and 37.5% heterosexual women reported having a college degree (Gorman et al. 2015). Gorman and colleagues suggested that the use of data in the NHIS would be best suited to determine the accuracy of such unexpected racial and educational attainment counts among gays and lesbians (2015). However, it does not seem as though the various sampling methods utilized by the BFRSS, GSS, and NHIS have yet found a way to identify gays and lesbians with lower levels of education and in different racial categories.

Regarding income, 42 percent of the lesbians report incomes below $75K (both in weighted and unweighted data), versus 28 percent of gay men (29% based on weighted data). A total of 39 percent of all lesbians reported their household income at or above $100,000 a year and over half of the gay men (52%) reported total household income in that same bracket (same percentages in weighted and unweighted data). This makes sense given the elevated levels of education, particularly for gay men. Only a very small percentage listed their income as either unknown or did not want to respond, 6% for lesbians and 3% for gay men (based on both weighted and unweighted data).

The two populations are similar in age, each with an average age of 45 years for lesbians and 47 years for gay men (44 years for lesbians and 46 years for gays in weighted data). Almost one-quarter of the lesbians (23%) report 1 or more children living with them, versus a scant 4 percent for gay men. The weighted percentages are the same for the presence of children in the home. This is a common finding in the literature,

with lesbians always being more likely than gay men to have children living with them in their households.

All these descriptive data (represented in Table 3 and Table 3.1) paint an interesting picture of the respondents in the survey. There are similar numbers of gay men and lesbians in the survey, but there are higher percentages of married lesbians than married gay men. This particular finding of female-female partnerships exceeding male-male partnerships has been found in other studies of gays and lesbians in the US but not necessarily outside of the US (Bernstein, Naples and Harvey 2015). This is possibly due to added discrimination experienced by male-male couples when formalizing a legal relationship and the incentive to legitimize a family with children for female-female relationships as lesbian couples are more likely than gay male couples to have children in the household (Wall 2011) however the ability to analyze data on same-sex marriage rates in the US is still in the early stages as is the ability to be in a same-sex marriage across the US.

The average ages are very similar, yet there is a higher percentage of lesbians making under $75,000 a year in household income than gay men. There are nearly six times as many lesbians with children in the house than in the households of gay men, even though they do not make as much money as the gay men. This paints a picture of gender differences in child raising and income equity, much of which is to be expected in American households in the early 21st century (Milkman 2016).

Table 3. Descriptive Statistics

	All		Females		Males	
	Freq	%	Freq	%	Freq	%
Independent Variables						
Married	266	52.7	152	56.7	114	48.1
Dependent Variables						
Binary Health						
Poor, Fair, or Good	172	34.0	99	37.0	73	30.8
Very Good or Excellent	333	66.0	169	63.0	164	69.2
4 Category Self-Rated						
Poor or Fair	58	11.5	33	12.3	25	10.6
Good	114	22.6	66	24.6	48	20.3
Very Good	180	35.6	98	36.6	82	34.6
Excellent	153	30.3	71	26.5	82	34.6
High Blood Pressure	142	28.1	57	21.3	85	35.9
Smoker	89	17.6	45	16.8	44	18.6
Binge Drinking	187	37.0	95	35.5	92	38.8
Control Variables						
Race						
NH White (ref.)	375	74.3	202	75.4	173	73.0
NH Black	34	6.7	18	6.7	16	6.8
Hispanic	73	14.5	36	13.4	37	15.6
NH Other	23	4.6	12	4.5	11	4.6
College Degree	301	59.6	151	56.3	150	63.3
Income						
$0 - $34,999 (ref.)	59	11.7	43	16.0	16	6.8
$35,000 - $74,999	121	24.0	70	26.1	51	21.5
$75,000 - $99,999	76	15.1	36	13.4	40	16.9
$100,000 and over	228	45.0	104	38.8	124	52.3
Unknown	21	4.2	15	5.6	6	2.5
Age [a] (18 to 82 years)		46.2		45.2		47.2
Children in Household	71	14.0	62	23.1	9	3.8
Valid N	505	100.0	268	53.1	237	46.9

[a] Mean given for continuous variables. Cell counts calculated from unweighted data.
Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 3.1. Weighted Descriptive Statistics

	Percentages		
	All	Females	Males
Independent			
Marriage	54.4%	58.2%	50.1%
Dependent Variables			
Binary Health			
Poor, Fair, or Good	34.2%	39.3%	28.6%
Very Good or	65.8%	60.8%	71.4%
4 Category Self-Rated			
Poor or Fair	10.7%	12.6%	9.7%
Good	23.5%	26.7%	20.0%
Very Good	33.6%	34.2%	33.0%
Excellent	32.2%	26.6	38.3%
5 Category Self-Rated			
Poor	2.2%	2.8%	1.6%
Fair	8.5%	9.8%	7.1%
Good	23.4%	26.7%	20.0%
Very Good	33.6%	34.2%	33.0%
Excellent	32.2%	26.6%	38.3%
High Blood Pressure	27.0%	23.0%	31.4%
Smoker	15.8%	14.1%	17.6%
Binge Drinking	37.7%	35.7%	40.0%
Control Variables			
Race			
NH White (ref.)	71.7%	73.1%	70.2%
NH Black	7.8%	8.5%	7.1%
Hispanic	16.0%	14.5%	17.7%
NH Other	4.5%	4.0%	5.1%
College Degree	58.7%	55.2%	62.5%
Income			
$0 - $34,999 (ref.)	13.5%	19.1%	7.4%
$35,000 - $74,999	22.2%	22.8%	21.6%
$75,000 - $99,999	14.8%	13.6%	16.0%
$100,000 and over	45.3%	38.8%	52.3%
Unknown	4.4%	5.7%	2.7%
Age [a] (18 to 82 years)	45	44	46
Children in Household	13.8%	23.1%	3.7%

[a] Mean given for continuous variables.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

4.2. Regression Results

The first and second hypotheses will be explored through the discussion of self-rated health (Tables 4-11), the third and fourth hypotheses will be tested via the outcome of high blood pressure (Tables 12-15) and the fifth and final hypothesis will be explored through the outcomes of smoking status (Tables 16-19) and binge drinking (Tables 20-23).

For all outcomes, I present four tables: 1) overall effect of marital status; 2) effect of marital status for women (excluding men); 3) effect of marital status for men (excluding women); and 4) the comparison of married lesbians against married gays. For all outcomes, I estimate a series of regression models. The first model controls for marital status (cohabiting as a reference category) and sex only (the NHIS does not ask sex but rather if a person is male or female which I will report as sex). In a second equation I will add in a control variable for race; a third will add in a control for having at least a bachelor's degree; a fourth will add in the control variable for total household income; a control for age in the fifth; and finally, a control for presence of children in the household in the sixth equation. For those tables where overall effect of marital status is examined, a seventh equation is added with a variable representing an interaction between marital status and sex. The tables representing the log odds from all these models can be found in the appendix.

I am mainly concerned with the effect of the marriage variable on the log odds of self-rated health, and how this effect changes as controls are added to the equation. Thus, when reporting below the results of the regression equations, I will focus on the impact

of the marriage variable and will interpret the controls only in the overall model for each outcome.

4.2.1. Self-rated Health

Table 4 presents the results of the first binary logistic regression equation predicting the log odds of higher self-rated health, among gay men and lesbians together, differentiating them by whether they are married or cohabiting using a dichotomous self-rated health variable. The self-reported health variable here is categorized as very good or excellent health compared to poor, fair, or good health. All models in Table 4 show an insignificant coefficient for marital status ($p>.10$). Thus, there are no differences in the odds of higher self-rated health between those who are married and those who are cohabiting when looking at health through a binary self-rated health variable. Similarly, the interaction effect between gender and marriage is insignificant ($p>.10$). Likewise, when running the regressions without weighting (i.e., without using the *svyset* commands), the coefficients for marriage are not significant ($p>.10$). Thus, based on the dichotomized self-rated health, being married does not affect the odds of having better self-rated health differently for gays as compared to lesbians. However, this dichotomized self-rated health variable is reducing the information about health greatly by being only able to differentiate between two categories of health.

Even though the marriage coefficient in Model 6 is not significant, education and income are important factors in the controls in Model 6. The significant change in F-statistic for models that add education (Model 3) and income levels (Model 4) show that the addition of those variables significantly improved the prediction of self-reported

health. Those with at least a bachelor's degree have 90% higher odds of reporting higher levels of self-rated health when controlling for sex, race, income, age and children (OR 1.9 $p<.05$). Those with higher levels of income show higher odds of better self-rated health when compared to those making under $35,000 a year. Those with the income of at least $35,000 to $74,999 annually have 3.22 times higher odds of better health ($p<.01$); those with $75,000 to $100,000 income have 2.72 times higher odds ($p<.05$); and those with $100,000 and higher income have 3.99 times higher odds of better health compared to the reference category of under $35,000 yearly ($p<.01$).

Table 5 shows the results of a binary logistic regression estimating the odds ratios of a dichotomous self-rated health for lesbians (n=268). Like in Table 4, all of the models in this table show an insignificant coefficient for marital status ($p>.10$). Thus, there are no differences in the odds of higher self-rated health between lesbians who are married and lesbians who are cohabiting, when only adding these controls. The same is seen when comparing gay men who are married to gay men who are cohabiting (n=237) in Table 6 and in Table 7 when comparing all married lesbians to all married gay men (n=266). There are no statistically significant results ($p>.10$) for marriage when predicting binary self-reported health; gay men and lesbians, either married or cohabiting, do not self-report their health levels different from one another.

Table 4. Odds Ratios for Binary Health Variable & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	.89	.89	.83	.75	.79	.77	.70
	(.18)	(.18)	(.17)	(.16)	(.16)	(.16)	(.23)
Female	.63*	.63*	.66	.77	.76	.73	.66
	(.14)	(.14)	(.15)	(.19)	(.18)	(.19)	(.22)
Race							
NH Black		.96	1.33	2.07	1.91	1.89	1.90
		(.46)	(.65)	(1.08)	(1.01)	(.99)	(1.00)
Hispanic		.94	1.09	1.19	1.10	1.11	1.13
		(.26)	(.31)	(.37)	(.34)	(.34)	(.35)
NH Other		1.50	1.59	1.84	1.78	1.80	1.82
		(.86)	(.85)	(.99)	(.95)	(.97)	(.99)
College Degree			2.35***	1.86*	1.90*	1.90*	1.88*
			(.53)	(.48)	(.49)	(.49)	(.49)
Annual HH Income in Thousands							
35 - 74				3.18**	3.22**	3.20**	3.20**
				(1.17)	(1.17)	(1.17)	(1.17)
75-99				2.46	2.71*	2.72*	2.71*
				(1.12)	(1.24)	(1.24)	(1.23)
> 100				3.61**	3.99**	3.99**	3.98**
				(1.54)	(1.69)	(1.69)	(1.69)
Unknown				1.34	1.42	1.45	1.44
				(.85)	(.92)	(.93)	(.92)
Age					.99	.99	.99
					(.01)	(.01)	(.01)
Children In HH						1.32	1.32
						(.47)	(.47)
Interaction: Married X Female							1.19
							(.55)
Constant	2.64***	2.64***	1.57*	.63	1.02	.97	1.02
	(.47)	(.48)	(.34)	(.24)	(.51)	(.48)	(.50)
Change in F-statistic	2.49	.19	14.4***	3.51**	2.80	.62	.14
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 5. Odds Ratios for Binary Health Variable & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married Lesbian	1.06	.98	.85	.81	.84	.80
	(.28)	(.27)	(.24)	(.23)	(.24)	(.24)
Race						
NH Black		1.20	1.74	3.18	2.79	2.72
		(.67)	(.99)	(2.15)	(2.00)	(1.94)
Hispanic		.59	.67	.67	.58	.60
		(.27)	(.32)	(.36)	(.31)	(.32)
NH Other		1.09	1.28	1.65	1.65	1.73
		(.89)	(.99)	(1.15)	(1.14)	(1.19)
College Degree			2.32**	1.76	1.81	1.84
			(.65)	(.61)	(.64)	(.66)
Annual HH Income in Thousands						
35 - 74				6.17***	6.20***	6.06***
				(3.22)	(3.19)	(3.12)
75-99				4.44*	5.26**	5.22**
				(2.66)	(3.25)	(3.20)
> 100				4.37**	4.87**	4.87**
				(2.28)	(2.49)	(2.49)
Unknown				2.34	2.62	2.69
				(1.78)	(2.03)	(2.06)
Age					.98	.99
					(.01)	(.01)
Children In HH						1.48
						(.54)
Constant	1.50	1.66*	1.09	.36*	.67	.55
	(.32)	(.41)	(.31)	(.16)	(.42)	(.35)
Change in F-statistic	.05	.55	8.95**	3.41*	1.90	1.17
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Lesbians, N=268.

Table 6. Odds Ratios for Binary Health Variable & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	.72	.67	.69	.63	.66	.68
	(.22)	(.21)	(.21)	(.19)	(.21)	(.22)
Race						
NH Black		.70	.86	.85	.82	.79
		(.42)	(.54)	(.59)	(.58)	(.56)
Hispanic		1.76	2.04	2.01	1.89	1.91
		(.72)	(.87)	(.90)	(.85)	(.86)
NH Other		2.33	2.13	2.78	2.63	2.83
		(2.09)	(1.70)	(2.71)	(2.56)	(2.70)
College Degree			2.40**	2.18*	2.27*	2.30*
			(.79)	(.84)	(.89)	(.90)
Annual HH Income in Thousands						
35 – 74				.85	.87	.85
				(.55)	(.57)	(.57)
75-99				.72	.76	.72
				(.50)	(.53)	(.53)
> 100				1.36	1.49	1.46
				(.97)	(1.09)	(1.11)
Unknown				.24	.24	.22
				(.25)	(.24)	(.22)
Age					.99	.99
					(.01)	(.01)
Children In HH						.44
						(.37)
Constant	2.96***	2.78***	1.59	1.73	2.59	2.78
	(.62)	(.62)	(.45)	(1.03)	(1.75)	(1.93)
Change in F-Statistic	1.14	.96	7.08**	1.60	1.09	.98
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gay Men, N=237.

Table 7. Odds Ratios for Binary Health Variable & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	.74	.75	.74	.89	.89	.75
	(.23)	(.25)	(.24)	(.30)	(.30)	(.28)
Race						
NH Black		1.50	1.93	3.03	3.02	3.41
		(1.13)	(1.41)	(2.28)	(2.28)	(2.57)
Hispanic		1.12	1.29	1.36	1.36	1.39
		(.46)	(.54)	(.65)	(.66)	(.67)
NH Other		1.25	1.25	1.72	1.72	1.90
		(1.04)	(.90)	(1.15)	(1.15)	(1.26)
College Degree			2.03*	1.59	1.59	1.58
			(.60)	(.56)	(.56)	(.59)
Annual HH Income in Thousands						
35 - 74				6.81***	6.81***	7.25***
				(3.83)	(3.83)	(4.12)
75-99				5.48*	5.49*	6.04*
				(3.83)	(3.85)	(4.23)
> 100				4.88*	4.89*	5.23*
				(3.17)	(3.18)	(3.52)
Unknown				3.11	3.12	3.53
				(3.12)	(3.14)	(3.54)
Age					1.00	1.00
					(.01)	(.01)
Children In HH						2.42
						(1.11)
Constant	2.13***	2.01**	1.28	.29	.30	.21
	(.48)	(.50)	(.40)	(.19)	(.24)	(.17)
Change in F-Statistic	.91	.13	5.73*	3.26*	0.00	3.72
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

Next, I move to the four category health variable in Tables 8, 9, 10 and 11. The health variable has changed from a binary variable to an ordered variable, with the lowest heath category representing responses of poor and fair. The resulting categories are poor or fair, good, very good, and excellent. In Table 8, Models 1, 2, and 3, controlling for sex, race and education, the coefficient for marriage is not significant. However, once income is added as control in Model 4, the coefficient for marriage becomes statistically significant ($p< .05$), though, it is opposite to what was expected. The effect of marriage on health is represented by the ordered logit coefficient of -0.410 (see Table A.5 in the appendix), indicating that the log odds of higher self-rated health are lower for those who are married as compared to those who are cohabiting. Its odds ratio (OR or Ω) is $e^{-0.410} = 0.664$ (see Model 4 in Table 8). Married lesbians and married gay men have odds of higher self-rated health that are 0.64 times those of cohabiting lesbians and cohabiting gay men, that is, they are lower; specifically, their odds are 36% lower, that is, (OR -1) * 100, and this relationship is one in which the sex, educational and income levels are controlled.

The coefficient for marriage in the rest of the models in Table 8, including the last model that has an interaction variable that represents the effect of marriage for lesbians as compared to marriage for gay men, is non-significant. Thus, taking into account the age, reduced the significance level for marriage to insignificant. This is likely because those who are married are older on average, hence the result showing worse health for those who are married if age was not taken into account. The mean age of married gays and lesbians is 48.5 while the mean age of cohabiting gays and lesbians is 43.5. Once age is taken into account, marriage does not have an effect on health. These results show, similarly to the binary self-rated health variable, that

marriage does not affect the odds of having higher self-rated health in my sample of gays and lesbians.

Table 9 presents the ordered logistic regression showing the effect of marriage for lesbians on the 4-category self-rated health. Table 9 shows the odds ratios and Table A.6 in the appendix shows the log odds. In the final model of Table 9, when the presence of children is added as a control, marriage has a significant but negative coefficient of -0.54 ($p<.05$) (in Appendix Table A.6). The odds ratio (OR or Ω) is $e^{-0.54} = 0.583$ ($p<.05$) shown in Model 6. The effect is negative, meaning that married lesbians have lower odds of high self-rated health than cohabiting lesbians, controlling for race, education, total household income, age and children in the household.

This is the opposite of what I expected to find. However, even this result can be affected by small cell sizes. Table 2 shows that there are 13 cohabiting women in the poor or fair health category compared to 20 married women in the unweighted sample. These small cell sizes might affect the results of this regression. Also, the interaction effect in Table 8, comparing the effect of marriage for men and women was not significant, indicates that, similarly to men, marriage does not influence self-rated health for women.

In looking at the controls in this model something interesting is seen in the income levels. While there are no significant coefficients or odds ratios for the rest of the controls there are significant effects for different income levels. Those lesbians in the income bracket representing a yearly household income of $35,000 to $74,999, when compared to those in the lowest income bracket of $0 - $34,999, have a statistically significant coefficient of 1.47 and an odds ratio of 4.33. This means that the odds of reporting higher levels of health are over 4 times as high for those in this income bracket compared to the reference category for income ($p<0.001$). Similar

result is seen in the middle and highest income brackets. Those in the middle bracket (between $75,000 and $99,999 a year), compared to those in the reference category, have a statistically significant coefficient of 1.65 and an odds ratio of 5.22 meaning they have 422% higher odds to have higher self-reported health levels ($p<0.01$). Those making $100,000 or more in annual household income, as compared with the lowest income bracket of $0 to $34,999 yearly income, have an odds ratio of $e^{1.851} = 6.37$ ($p<0.001$). Lesbians in the highest income category have over 6 times higher odds of rating their health in higher levels than lesbians in the lowest income category.

Tables 10 and 11 report the findings of the four category health variable comparing married gays to cohabiting gays (Table 10) and married lesbians to married gay men (Table 11). While these models were easily estimated by *svy: logistic* command in Stata, the nested regression (*nestreg: svy: logistic*) that calculates the change in F-statistic from one model to another failed to work due to small cell sizes. The models do not show any significant odds ratios for the marriage variable. Likewise, when using unadjusted data (not using the *svyset* command), there is no statistical significance in these tables for the effect of marriage on health ($p>.10$). There is no statistical difference in the odds of four-category self-reported health for gay men who are married compared to gay men who are cohabiting ($p>.10$; Table 10) nor for married lesbians when compared to married gay men (Table 11) when only controlling for race, education, income, age, and the presence of children. These data do not support my hypothesis that those in female same-sex marriages have higher self-ratings of health than men in same-sex marriages.

Table 8. Odds Ratios for Four Category Health Variable & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	.86	.85	.80	.66*	.70	.69	.75
	(.16)	(.15)	(.14)	(.13)	(.14)	(.13)	(.22)
Female	.61**	.62*	.65*	.77	.75	.73	.79
	(.12)	(.12)	(.12)	(.15)	(.15)	(.16)	(.22)
Race							
NH Black		.80	1.07	1.68	1.52	1.51	1.50
		(.23)	(.31)	(.55)	(.51)	(.51)	(.51)
Hispanic		1.11	1.27	1.53	1.41	1.42	1.40
		(.27)	(.31)	(.40)	(.36)	(.36)	(.35)
NH Other		1.01	.96	1.12	1.03	1.04	1.04
		(.50)	(.45)	(.54)	(.51)	(.52)	(.51)
College Degree			2.24***	1.64*	1.69*	1.68*	1.70*
			(.46)	(.37)	(.38)	(.38)	(.39)
Annual HH Income in Thousands							
35 - 74				3.00***	3.08***	3.05***	3.07***
				(.92)	(.93)	(.92)	(.94)
75-99				2.14	2.46*	2.46*	2.48*
				(.83)	(.95)	(.95)	(.97)
> 100				4.57***	5.25***	5.23***	5.27***
				(1.64)	(1.89)	(1.89)	(1.92)
Unknown				1.50	1.60	1.61	1.63
				(.91)	(1.00)	(.99)	(1.01)
Age					.98*	.99*	.99*
					(.01)	(.01)	(.01)
Children In HH						1.16	1.16
						(.33)	(.34)
Interaction: Married X Female							.86
							(.35)
/cut1	.08***	.08***	.13***	.30***	.17***	.17***	.18***
	(.02)	(.02)	(.03)	(.10)	(.07)	(.07)	(.08)
/cut2	.37***	.36***	.60**	1.49	.83	.84	.88
	(.06)	(.06)	(.12)	(.46)	(.33)	(.34)	(.37)
/cut3	1.52*	1.52*	2.61***	6.89***	3.84**	3.94**	4.09**
	(.26)	(.26)	(.55)	(2.30)	(1.61)	(1.65)	(1.78)
Change in F-Statistic	.96	1.72	10.88**	4.38**	12.44***	.14	.34
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 9. Odds Ratios for Four Category Health Variable & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married Lesbians	.92	.84	.73	.60*	.62	.58*
	(.22)	(.20)	(.18)	(.15)	(.16)	(.15)
Race						
NH Black		.73	1.03	1.75	1.53	1.49
		(.21)	(.32)	(.65)	(.61)	(.61)
Hispanic		.61	.67	.85	.77	.79
		(.21)	(.25)	(.35)	(.30)	(.31)
NH Other		.74	.80	.87	.82	.86
		(.72)	(.72)	(.57)	(.54)	(.56)
College Degree			2.23**	1.51	1.55	1.54
			(.57)	(.41)	(.43)	(.43)
Annual HH Income in Thousands						
35 - 74				4.46***	4.41***	4.33***
				(1.64)	(1.57)	(1.55)
75-99				4.33**	5.21**	5.22**
				(2.10)	(2.67)	(2.65)
> 100				5.70***	6.36***	6.37***
				(2.37)	(2.62)	(2.62)
Unknown				2.32	2.58	2.65
				(1.94)	(2.25)	(2.24)
Age					.99	.99
					(.01)	(.01)
Children In HH						1.45
						(.43)
/cut1	.14***	.11***	.16***	.39**	.22**	.26**
	(.03)	(.03)	(.05)	(.13)	(.10)	(.12)
/cut2	.61*	.52**	.77	2.11*	1.17	1.41
	(.12)	(.12)	(.20)	(.68)	(.53)	(.65)
/cut3	2.63***	2.24***	3.50***	10.37***	5.81***	7.05***
	(.56)	(.53)	(.97)	(3.54)	(2.63)	(3.23)
Change in F-Statistic	.5	1.11	5.85*	3.13*	7.46**	.34
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Lesbians, N=268.

Table 10. Odds Ratios for Four Category Health Variable & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	.80	.75	.77	.66	.75	.78
	(.22)	(.20)	(.21)	(.18)	(.22)	(.23)
Race						
NH Black		.86	1.05	1.19	1.11	1.08
		(.44)	(.55)	(.70)	(.68)	(.67)
Hispanic		2.05*	2.36*	2.49*	2.26*	2.30*
		(.71)	(.85)	(.95)	(.85)	(.88)
NH Other		1.32	1.14	1.54	1.38	1.37
		(.60)	(.48)	(.93)	(.90)	(.86)
College Degree			2.32**	2.05*	2.19*	2.22*
			(.66)	(.70)	(.75)	(.75)
Annual HH Income in Thousands						
35 - 74				1.14	1.27	1.29
				(.65)	(.72)	(.75)
75-99				.61	.69	.68
				(.35)	(.41)	(.41)
> 100				1.80	2.22	2.28
				(1.04)	(1.34)	(1.43)
Unknown				.39	.40	.39
				(.28)	(.29)	(.28)
Age					.98*	.98*
					(.01)	(.01)
Children In HH						.34
						(.26)
/cut1	.08***	.09***	.15***	.16**	.08***	.07***
	(.02)	(.03)	(.05)	(.09)	(.05)	(.04)
/cut2	.36***	.39***	.67	.72	.36	.35
	(.07)	(.08)	(.18)	(.36)	(.20)	(.20)
/cut3	1.44	1.60*	2.90***	3.32*	1.70	1.66
	(.29)	(.35)	(.80)	(1.68)	(.98)	(.98)

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gay Men, N=237.

Table 11. Odds Ratios for Four Category Health Variable & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	.65	.66	.65	.74	.71	.67
	(.18)	(.18)	(.18)	(.20)	(.20)	(.20)
Race						
NH Black		1.01	1.27	1.80	1.69	1.73
		(.38)	(.46)	(.69)	(.68)	(.69)
Hispanic		1.14	1.35	1.53	1.45	1.44
		(.37)	(.44)	(.52)	(.50)	(.50)
NH Other		.88	.82	.97	.95	.98
		(.72)	(.57)	(.56)	(.56)	(.58)
College Degree			2.05**	1.42	1.47	1.44
			(.56)	(.41)	(.43)	(.43)
Annual HH Income in Thousands				5.14***	5.26***	5.16***
35 - 74						
				(2.31)	(2.34)	(2.33)
75-99				3.77*	4.41*	4.49*
				(2.03)	(2.58)	(2.61)
> 100				5.71***	6.40***	6.38***
				(2.74)	(3.22)	(3.26)
Unknown				4.25	4.68	4.73
				(4.80)	(5.58)	(5.51)
Age					.99	.99
					(.01)	(.01)
Children In HH						1.40
						(.47)
/cut1	.10***	.10***	.16***	.58	.36	.39
	(.03)	(.03)	(.05)	(.29)	(.22)	(.25)
/cut2	.43***	.44***	.71	2.80*	1.73	1.92
	(.09)	(.10)	(.20)	(1.31)	(1.03)	(1.15)
/cut3	1.85**	1.89**	3.12***	12.89***	7.98***	8.88***
	(.41)	(.46)	(.93)	(6.28)	(4.77)	(5.39)

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

4.2.2. Hypertension Diagnosis

The results of the equations in Table 12, as well as the rest of the equations I estimate, are results from binary logistic regressions analyzing the effect of marital status on a binary dependent variable. Where the self-rated health variable had several categories for health, the remaining equations will each measure a dichotomous health status or health behavior. To begin, I estimate whether someone was ever told that they had hypertension, or high blood pressure.

For married gays and lesbians, when compared to cohabiting gays and lesbians, there is no statistical difference ($p>.10$) in the odds of having a diagnosis of high blood pressure (Table 12, all models). However, in Model 6, race and age are important controls. Hispanics, compared to NH Whites, have 58% lower odds of having high blood pressure (OR .42; $p<.05$). And for every year increase in age the odds of having high blood pressure increases by .05 (OR 1.05; $p<.001$).

Even though the marriage effect is not significant, the interaction effect between marital status and sex is positive and significant ($p<.05$). The main effect for marital status (.68; $p>.10$) shows the effect of marital status for gay men. Thus, being married does not affect the odds of having high blood pressure for married gay men. However, the effect of marriage for lesbians is the product of the main effect of marriage (.68) and the interaction effect (.68*3.32=2.26) ($p<.05$). This means that marriage increases the risk of high blood pressure for lesbians. In particular, the odds of high blood pressure are 126% higher for married lesbians than for cohabiting lesbians. This indicates that cohabiting lesbians have lower odds of having high blood pressure than married lesbians.

I also calculated the predicted probabilities based on this interaction effect (see Table 12.1). While the probability of high blood pressure is generally the same for married gays and

lesbians, and cohabiting gays; it is much lower for cohabiting lesbians. The probability of high blood pressure for cohabiting lesbians is also much lower than the probability of high blood pressure for gays overall. This indicates that cohabiting lesbians have lower instances of high blood pressure than married lesbians and gays, either cohabiting or married. My hypotheses stated that those in same-sex marriages, specifically women in same-sex marriages, would have lower instance of high blood pressure. These data show the opposite result.

Table 13 shows this relationship in greater detail. Married lesbians, compared to cohabiting lesbians, when not adding any controls, have much higher odds, 128% higher odds, of having high blood pressure than cohabiting lesbians (OR 2.28; $p < .05$). When adding in controls for race the logit coefficient (seen in Table A.10) stays statistically significant ($p<.05$). The statistical significance is maintained in each model ($p<.05$), showing that married lesbians have higher odds of having high blood pressure than cohabiting lesbians when controlling for race, education, income, age and the presence of children in the household.

The final model of Table 13[1], Model 6, has an odds ratio ($e^{.806}$) of 2.32. This indicates that lesbians who are married have higher odds of having high blood pressure than lesbians who are cohabiting. In fact, they have 132% higher odds of having been told they have hypertension than cohabiting lesbians. Additionally, every one year increase in age increases the odds of having high blood pressure by 5.7% ($p< .001$). These results do not support my third hypothesis; in fact, it is again the opposite of what I expected to find. Married lesbians have higher odds of having high blood pressure than cohabiting lesbians. Furthermore, the results of Tables 14 and 15 indicate that there is no statistical difference in odds of a hypertension diagnosis between

[1] When not using the svyset command, there is no statistical difference in high blood pressure for married or cohabiting lesbians.

married and cohabiting gay men nor between married lesbians and married gay men when controlling for race, education, income, age or the presence of children. This does not support my fourth hypothesis that married lesbians would have lower incidences of hypertension than married gay men.

Table 12. Odds Ratios for High Blood Pressure & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	1.39	1.36	1.38	1.39	1.14	1.17	.68
	(.30)	(.29)	(.29)	(.31)	(.27)	(.27)	(.23)
Female	.63	.61*	.60*	.64	.65	.68	.34**
	(.16)	(.15)	(.15)	(.16)	(.17)	(.18)	(.13)
Race							
NH Black		.85	.78	.91	1.32	1.32	1.31
		(.39)	(.37)	(.43)	(.68)	(.67)	(.68)
Hispanic		.35**	.33**	.33**	.42*	.42*	.45*
		(.12)	(.12)	(.12)	(.14)	(.14)	(.15)
NH Other		.89	.88	.95	1.14	1.13	1.24
		(.53)	(.50)	(.56)	(.78)	(.77)	(.78)
College Degree			.77	.74	.62	.62	.58*
			(.18)	(.20)	(.17)	(.17)	(.16)
Annual HH Income in Thousands							
35 - 74				1.84	1.96	1.97	1.99
				(.84)	(.97)	(.98)	(1.01)
75-99				2.92*	2.25	2.25	2.23
				(1.39)	(1.14)	(1.13)	(1.16)
> 100				1.66	1.27	1.27	1.25
				(.79)	(.66)	(.66)	(.66)
Unknown				1.22	1.04	1.02	.90
				(.97)	(.88)	(.86)	(.77)
Age					1.06***	1.05***	1.06***
					(.01)	(.01)	(.01)
Children In HH						.76	.72
						(.33)	(.31)
Interaction: Married X Female							3.32*
							(1.66)
Constant	.39***	.46***	.55*	.31**	.03***	.03***	.04***
	(.08)	(.10)	(.14)	(.13)	(.02)	(.02)	(.02)
Change in F-Statistic	3.21*	3.02*	1.32	1.59	39.35***	.42	5.74*
Change in DF	1	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 12.1. Predicted Probability of High Blood Pressure (Based on Model 6 of Table 12)

	Cohabiting	Married
Gays	.34	.27
Lesbian	.17	.29

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 13. Odds Ratios for High Blood Pressure & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married Lesbians	2.28*	2.00*	2.20*	2.27*	2.24*	2.32*
	(.76)	(.65)	(.74)	(.82)	(.82)	(.82)
Race						
NH Black		.89	.71	.70	1.14	1.13
		(.57)	(.48)	(.45)	(.86)	(.86)
Hispanic		.31	.28	.28	.32	.31
		(.20)	(.18)	(.18)	(.23)	(.22)
NH Other		.99	.90	.91	.96	.93
		(1.00)	(.84)	(.86)	(.89)	(.84)
College Degree			.59	.64	.52	.52
			(.21)	(.27)	(.23)	(.24)
Annual HH Income in Thousands						
35 - 74				.70	.75	.76
				(.38)	(.43)	(.44)
75-99				2.21	1.33	1.37
				(1.37)	(.86)	(.85)
> 100				.87	.65	.65
				(.49)	(.41)	(.41)
Unknown				.85	.57	.56
				(.73)	(.58)	(.56)
Age					1.06***	1.06***
					(.01)	(.02)
Children In HH Married Lesbians						.71
						(.38)
	.18***	.22***	.28***	.27**	.02***	.03***
	(.05)	(.06)	(.09)	(.13)	(.02)	(.02)
Change in F-Statistic	6.12*	1.11	2.15	1.22	18.26***	.4
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

Table 14. Odds Ratios for High Blood Pressure & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	.93	.99	.98	.95	.63	.63
	(.26)	(.28)	(.29)	(.29)	(.23)	(.23)
Race						
NH Black		.84	.82	1.76	2.37	2.36
		(.54)	(.54)	(1.18)	(1.55)	(1.54)
Hispanic		.41*	.41*	.40*	.54	.55
		(.18)	(.17)	(.18)	(.25)	(.25)
NH Other		.88	.89	1.01	1.36	1.38
		(.69)	(.69)	(.69)	(1.17)	(1.20)
College Degree			.88	.82	.63	.63
			(.27)	(.30)	(.24)	(.24)
Annual HH Income in Thousands						
35 - 74				48.36***	73.88***	73.56***
				(46.38)	(85.33)	(85.05)
75-99				42.98***	56.89***	56.45***
				(40.88)	(64.95)	(64.46)
> 100				31.23***	35.04**	34.89**
				(31.15)	(41.17)	(40.98)
Unknown				12.45	16.83	16.62
				(18.00)	(24.54)	(24.22)
Age					1.06***	1.06***
					(.01)	(.01)
Children In HH						.84
						(.69)
Constant	.47***	.54**	.58	.02***	.00***	.00***
	(.09)	(.12)	(.19)	(.02)	(.00)	(.00)
Change in F-Statistic	.06	1.35	.17	4.4**	17.61***	.05
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gay Men, N=237.

Table 15. Odds Ratios for High Blood Pressure & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	.91	.81	.81	.90	1.07	1.10
	(.29)	(.26)	(.26)	(.30)	(.41)	(.42)
Race						
NH Black		.58	.51	.60	.66	.65
		(.40)	(.38)	(.42)	(.46)	(.45)
Hispanic		.29*	.26*	.28*	.36	.36
		(.15)	(.14)	(.15)	(.19)	(.19)
NH Other		1.51	1.53	1.76	1.90	1.88
		(1.14)	(1.06)	(1.39)	(1.69)	(1.65)
College Degree			.67	.60	.48	.48
			(.23)	(.26)	(.22)	(.22)
Annual HH Income in Thousands						
35 - 74				1.67	1.70	1.71
				(1.02)	(1.15)	(1.16)
75-99				5.77*	3.92	3.92
				(4.20)	(3.08)	(3.08)
> 100				2.04	1.47	1.47
				(1.46)	(1.18)	(1.19)
Unknown				1.86	1.38	1.36
				(1.84)	(1.52)	(1.50)
Age					1.06***	1.06***
					(.01)	(.01)
Children In HH						.86
						(.43)
Constant	.44***	.55**	.71	.33	.03***	.03***
	(.10)	(.13)	(.22)	(.20)	(.02)	(.03)
Change in F-Statistic	.08	2.25	1.35	2.17	21.89***	.09
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Married Gays and Lesbians, N=266.

4.2.3. Smoking Status

The results of the equations in the next series of tables predict the odds of being a smoker for married gays and lesbians compared to cohabiting gays and lesbians (Table 16), for married lesbians compared to cohabiting lesbians (Table 17), for married or cohabiting gays (Table 18) and finally for married lesbians compared to married gays (Table 19).

Every model in Table 16[2] shows a statistically significant odds ratio for marriage. In Model 6, when controlling for marital status and sex, race, education, income, age and the presence of children, the odds of married gays and lesbians being smokers are 0.42 of those of cohabiting gays and lesbians being smokers, that is their odds are 58% lower ($p<.05$). Model 7 adds in an interaction effect between marital status and sex. The main effect for marriage is significant with an odds ratio of .416 ($p<.05$) however the interaction effect is not significant. This shows that marital status does not affect the odds of being a smoker differently for gays and lesbians.

As for the control variables, NH Blacks have lower odds of being a smoker than NH Whites (OR .21 $p<.05$), as are Hispanics (OR .18 $p<.01$), and Non-Hispanic Others (OR 2.91 $p<.05$). Education and income matter as well here. Those with at least a bachelor's degree have 66% lower odds of being a smoker when controlling for sex, race, income, age and children (OR .35 $p<.01$). Those in the highest income bracket ($100,000 +) have 77% lower odds of being a smoker than those in the lowest income bracket ($34,999 and less) ($p<.01$).

[2] When not weighting the data (i.e., not using the *svyset* command), the statistical difference remains in smoking status for married versus cohabiting gays and lesbians ($p<.01$).

Table 17 presents the predicted odds ratios of smoking for married lesbians compared to cohabiting lesbians. The coefficient for marriage is significant but negative until I enter income into the model. Once all the controls are added, marriage does not impact the odds of being a smoker for lesbians. The final, full model in Table 17, when controlling for race, education, income, age and the presence of children marriage does not affect the odds of being a smoker among lesbians ($p>.10$). However, this may be due to the small cell sizes. As seen in Table 2, there are only 19 married lesbians and 26 cohabiting lesbians who are smokers in the unweighted sample. Even still, these results support my fifth hypothesis that those in same-sex marriages are less likely to engage in risky behaviors such as smoking.

Table 18 shows a reduced n of 231 as opposed to 237 seen elsewhere in this research. Six cases have been removed from this equation due to small cell sizes. The number of gay smokers who listed their income as unknown was zero as shown in Table 18.1. In order to fully analyze smoking status and marital status, these six cases needed to be removed which also leaves out the category of unknown income.

Table 18 presents the predicted log odds of smoking status for married gay men when compared to cohabiting gay men. All of the models show significant odds ratios for marriage meaning that gay married men have lower odds of being a smoker than cohabiting gay men ($p<.05$). In the full model, Model 6[3], the odds ratio ($e^{-.963}$) is .38 meaning that gay men who are married have 62% lower odds of smoking than gay men who are cohabiting ($p<.05$) when

[3] When not using the weighted data (i.e., not using the *svyset* command), the statistical difference remains in smoking status for married versus cohabiting gays ($p<.05$).

controlling for race, education, income, age and the presence of children under the age of 18 in the household.

Table 19 has combined racial categories due to small cell sizes for NH Black smokers. This is shown in Table 19.1. For this reasons I have combined all non-White races together to compare against NH Whites.

Table 19.2 shows a similar issue as Table 18.1. There are too few smokers who listed yearly income as unknown. Therefore, just as in Table 18, the unknown category has been removed. Even with these changes in the sample, the coefficients for gender differentiating between married gays and married lesbians are still not statistically significant. For married lesbians compared to married gay men, there is no statistically significant difference ($p>.10$) in the log odds of being a smoker. This is presented in each of the models in Table 19 showing controls for sex, race, education, income, age and the presence of children in the household. While research indicates that lesbians have elevated risk of being a smoker (Gruskin and Gordon 2006), it is possible that the circumstances that led these particular lesbians to be married also led them to avoid or to quit smoking.

Table 16. Odds Ratios for Smoking Status & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	.44**	.41**	.42**	.48**	.47**	.48**	.42*
	(.12)	(.11)	(.12)	(.13)	(.13)	(.13)	(.17)
Female	.82	.84	.71	.59	.59	.64	.57
	(.22)	(.23)	(.20)	(.17)	(.17)	(.20)	(.22)
Race							
NH Black		.51	.31*	.19*	.20*	.21*	.21*
		(.30)	(.18)	(.13)	(.14)	(.15)	(.15)
Hispanic		.28*	.21**	.18**	.18**	.18**	.19**
		(.15)	(.12)	(.10)	(.11)	(.11)	(.11)
NH Other		2.72*	2.84*	2.90	2.96	2.91*	2.98*
		(1.20)	(1.43)	(1.59)	(1.63)	(1.58)	(1.60)
College Degree			.24***	.35**	.34**	.35**	.34**
			(.07)	(.11)	(.11)	(.11)	(.11)
Annual HH Income in Thousands							
35 – 74				.52	.52	.53	.54
				(.23)	(.23)	(.24)	(.24)
75-99				.37	.36	.37	.37
				(.21)	(.21)	(.21)	(.21)
> 100				.24**	.23**	.23**	.23**
				(.13)	(.13)	(.13)	(.13)
Unknown				.20	.20	.20	.19
				(.22)	(.22)	(.21)	(.21)
Age					1.01	1.00	1.00
					(.01)	(.01)	(.01)
Children In HH						.60	.59
						(.28)	(.28)
Interaction: Married X Female							1.35
							(.78)
Constant	.30***	.35***	.82	1.84	1.46	1.55	1.61
	(.07)	(.09)	(.24)	(.85)	(.86)	(.92)	(.98)
Change in F-Statistic	4.73**	4.93**	25.51***	1.95	.38	1.19	.27
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 17. Odds Ratios for Smoking Status & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married	.47*	.38*	.46*	.49	.49	.51
	(.18)	(.14)	(.17)	(.18)	(.18)	(.19)
Race						
NH Black		.57	.32	.26	.27	.28
		(.39)	(.23)	(.23)	(.24)	(.25)
Hispanic		.19*	.15*	.13*	.13*	.13*
		(.14)	(.12)	(.11)	(.11)	(.11)
NH Other		4.19	3.67	3.43	3.45	3.32
		(3.64)	(2.84)	(2.37)	(2.35)	(2.26)
College Degree			.25**	.31*	.31*	.31*
			(.11)	(.14)	(.14)	(.14)
Annual HH Income in Thousands						
35 - 74				.75	.76	.78
				(.40)	(.41)	(.42)
75-99				.42	.41	.42
				(.35)	(.34)	(.35)
> 100				.45	.44	.44
				(.29)	(.29)	(.29)
Unknown				.68	.67	.66
				(.62)	(.62)	(.60)
Age					1.01	1.00
					(.01)	(.02)
Children In HH						.73
						(.35)
Constant	.24***	.30***	.55	.79	.63	.72
	(.06)	(.08)	(.17)	(.40)	(.48)	(.56)
Change in F-Statistic	4.13*	3.01*	9.91**	.47	.14	.41
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Lesbians, N=268.

Table 18. Odds Ratios for Smoking Status & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married	.41*	.39*	.35**	.41*	.39*	.38*
	(.15)	(.14)	(.14)	(.17)	(.15)	(.15)
Race						
NH Black		.43	.28	.08*	.08*	.06*
		(.44)	(.29)	(.09)	(.09)	(.07)
Hispanic		.36	.29	.21*	.21*	.19*
		(.24)	(.20)	(.16)	(.16)	(.16)
NH Other		2.89	3.46	4.24	4.39	5.46
		(2.70)	(4.21)	(5.00)	(5.16)	(5.65)
College Degree			.24**	.38	.37*	.35*
			(.10)	(.19)	(.18)	(.17)
Annual HH Income in Thousands						
35 – 74				.19*	.18*	.16*
				(.15)	(.14)	(.12)
75-99				.15*	.15*	.12*
				(.13)	(.12)	(.11)
> 100				.07**	.06**	.05**
				(.06)	(.06)	(.05)
Age					1.01	1.01
					(.01)	(.01)
Children In HH						.10
						(.20)
Constant	0.33***	0.38***	0.88	5.10*	3.96	5.13
	(0.08)	(0.09)	(0.33)	(3.72)	(3.66)	(4.82)
Change in F-Statistic	5.00*	1.33	13.04***	1.22	.19	1.07
Change in DF	1	3	1	3	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 – 2018 Gay Men, N=231.

Table 18.1. Smoking Status and Income Category Unknown

Income	Smoking Status		Total
	Non-Smoker	Smoker	
Not Unknown	187	44	231
Unknown	6	0	6
Total	193	44	237

Source: NHIS 2016 - 2018 Gays N=237.

Table 19. Odds Ratios for Smoking Status & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	.87	.90	.91	.75	.76	.79
	(.39)	(.41)	(.41)	(.33)	(.33)	(.37)
Race						
Not NH White		.80	1.01	1.20	1.15	1.15
		(.47)	(.64)	(.80)	(.81)	(.81)
College Degree			.29*	.39	.38	.38
			(.15)	(.21)	(.20)	(.20)
Annual HH Income in Thousands						
35 – 74				.70	.70	.70
				(.43)	(.42)	(.43)
75-99				.40	.37	.37
				(.30)	(.29)	(.29)
> 100				.36	.34	.34
				(.23)	(.23)	(.23)
Age					1.01	1.01
					(.02)	(.02)
Children In HH						.82
						(.49)
Constant	.13***	.15***	.24*	.38	.27	.28
	(.04)	(.08)	(.13)	(.28)	(.19)	(.21)
Change in F-Statistic	.1	.15	5.85*	1	.29	.11
Change in DF	1	1	1	3	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Married Gay & Lesbians, N=266.

Table 19.1. Smoking Status and Race: NH Black

Race	Smoking Status		Total
	Non-Smoker	Smoker	
Not NH Black	221	31	252
NH Black	14	0	14
Total	235	31	266

Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

Table 19.2. Smoking Status and Income Category Unknown

Income	Smoking Status		Total
	Non-Smoker	Smoker	
Not Unknown	397	87	484
Unknown	19	2	21
Total	416	89	505

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

4.2.4. Binge Drinking

The results in the final tables estimate marriage effect on binge drinking for gays and lesbians.

There are no statistically significant odds ratios for marriage when analyzing binge drinking for married versus cohabiting gays and lesbians, as seen in Table 20. In Model 6, before the interaction effect is added, the coefficient (see in Table A.17 in the appendix) is positive but insignificant (.38; p>.10). There are only two control variables in Model 6 that are significant. These are age and the presence of children. For every year increase in age the odds of binge drinking decrease by 6% (OR .94 p<.001). The presence of children under the age of 18 in the household reduces the odds of binge drinking by 61% (OR .39 p<.05). Even still, there is no statistical difference (p>.10) in the odds of having at least one session of binge drinking in the past year (Table 20) for married versus cohabiting gays and lesbians when controlling for sex, race, education, income levels, age or the presence of children in the household. The interaction effect (OR 1.23) in Model 7 is also insignificant (p>.10). This indicates that being married does not affect the odds of binge drinking for gays any differently than it does for lesbians.

Similar results are shown in Tables 21, 22 and 23. There is no statistical difference in the odds of binge drinking for married lesbians when compared to cohabiting lesbians, for gay men whether or not they are married or cohabiting, nor for married lesbians compared to married gay men. In other words, married and cohabiting gays and lesbians engage in binge drinking at similar rates.

These results do not support my fifth hypothesis. There may be other, perhaps better, indicators of risky behavior for this population but it is also possible that by the time gays and lesbians in this sample reached a certain age, binge drinking was a thing of the past. One would

like to think that the unpleasant circumstances in life that lead one to binge drinking may not be an issue for these married and cohabiting gays and lesbians.

Table 20. Odds Ratios for Binge Drinking & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	1.03	1.06	1.08	1.06	1.34	1.46	1.32
	(.22)	(.23)	(.24)	(.24)	(.33)	(.37)	(.43)
Female	.83	.84	.81	.82	.76	.91	.81
	(.18)	(.18)	(.17)	(.17)	(.17)	(.21)	(.25)
Race							
NH Black		1.10	.95	.97	.65	.66	.66
		(.40)	(.34)	(.38)	(.28)	(.28)	(.29)
Hispanic		1.63	1.53	1.52	1.12	1.09	1.11
		(.46)	(.43)	(.43)	(.33)	(.32)	(.33)
NH Other		.94	.92	.93	.80	.76	.77
		(.39)	(.39)	(.40)	(.36)	(.34)	(.34)
College Degree			.67	.65	.67	.67	.66
			(.14)	(.15)	(.16)	(.16)	(.16)
Annual HH Income in Thousands							
35 – 74				1.16	1.19	1.24	1.23
				(.43)	(.46)	(.48)	(.49)
75-99				.53	.69	.68	.68
				(.24)	(.32)	(.33)	(.33)
> 100				1.10	1.69	1.71	1.70
				(.45)	(.73)	(.74)	(.74)
Unknown				.69	.77	.71	.71
				(.48)	(.56)	(.52)	(.51)
Age					.95***	.94***	.94***
					(.01)	(.01)	(.01)
Children In HH						.39*	.39*
						(.14)	(.14)
Interaction: Married X Female							1.23
							(.54)
Constant	.66*	.59**	.76	.80	6.42***	7.62***	7.99***
	(.11)	(.11)	(.17)	(.29)	(3.32)	(3.88)	(4.21)
Change in F-Statistic	.39	1.05	3.81	1.28	31.82***	6.46*	.22
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table 21. Odds Ratios for Binge Drinking & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married	1.07	1.23	1.29	1.22	1.36	1.49
	(.32)	(.36)	(.39)	(.37)	(.44)	(.50)
Race						
NH Black		.69	.60	.62	.40	.40
		(.38)	(.34)	(.37)	(.25)	(.25)
Hispanic		2.39*	2.29	2.68*	1.96	1.85
		(1.01)	(.98)	(1.15)	(.87)	(.85)
NH Other		1.40	1.33	1.27	1.23	1.13
		(1.05)	(.96)	(.94)	(.97)	(.88)
College Degree			.75	.66	.67	.66
			(.23)	(.22)	(.22)	(.22)
Annual HH Income in Thousands						
35 - 74				.81	.75	.79
				(.38)	(.35)	(.37)
75-99				.75	1.09	1.11
				(.45)	(.68)	(.72)
> 100				1.33	1.82	1.83
				(.71)	(.96)	(.96)
Unknown				.53	.65	.62
				(.39)	(.49)	(.47)
Age					.96***	.95***
					(.01)	(.01)
Children In HH						.54
						(.19)
Constant	.53**	.43***	.50*	.55	3.36	4.57*
	(.11)	(.10)	(.14)	(.22)	(2.13)	(2.92)
Change in F-Statistic	.06	1.69	.88	.72	12.81***	3.02
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Lesbians, N=268.

Table 22. Odds Ratios for Binge Drinking & Married vs. Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	.99	1.01	.98	1.00	1.47	1.58
	(.29)	(.29)	(.29)	(.30)	(.48)	(.54)
Race						
NH Black		1.91	1.67	1.94	1.54	1.44
		(1.12)	(.96)	(1.13)	(.98)	(.92)
Hispanic		1.22	1.14	1.08	.74	.74
		(.50)	(.46)	(.44)	(.32)	(.33)
NH Other		.67	.71	.65	.44	.50
		(.36)	(.43)	(.36)	(.33)	(.38)
College Degree			.57	.59	.62	.63
			(.17)	(.22)	(.26)	(.27)
Annual HH Income in Thousands						
35 - 74				1.76	2.57	2.53
				(1.03)	(1.61)	(1.63)
75-99				.39	.50	.46
				(.26)	(.33)	(.32)
> 100				1.10	2.31	2.23
				(.76)	(1.69)	(1.69)
Unknown				1.36	1.35	1.12
				(1.91)	(2.33)	(1.94)
Age					.93***	.93***
					(.01)	(.01)
Children In HH						.08*
						(.10)
Constant	.67*	.62*	.91	.83	9.60**	10.77**
	(.11)	(.12)	(.25)	(.47)	(7.64)	(8.79)
Change in F-Statistic	.00	.72	3.59	2.28	23.25***	4.32*
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gay Men, N=237.

Table 23. Odds Ratios for Binge Drinking & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Married Gays	.86	.88	.89	.90	.76	.90
	(.27)	(.28)	(.29)	(.30)	(.27)	(.32)
Race						
NH Black		.80	.59	.51	.31	.28
		(.54)	(.37)	(.34)	(.21)	(.20)
Hispanic		1.14	.96	.87	.61	.60
		(.42)	(.35)	(.33)	(.24)	(.24)
NH Other		.92	.94	.88	.84	.76
		(.76)	(.71)	(.66)	(.67)	(.60)
College Degree			.42**	.42**	.44**	.45**
			(.11)	(.12)	(.12)	(.13)
Annual HH Income in Thousands						
35 - 74				1.18	1.22	1.23
				(.66)	(.71)	(.74)
75-99				.49	.72	.68
				(.33)	(.52)	(.54)
> 100				.95	1.49	1.46
				(.55)	(.88)	(.89)
Unknown				.31	.34	.31
				(.33)	(.43)	(.40)
Age					.94***	.94***
					(.01)	(.01)
Children In HH						.45
						(.19)
Constant	.66	.65	1.15	1.32	17.85***	23.72***
	(.15)	(.16)	(.35)	(.78)	(14.52)	(20.07)
Change in F-Statistic	.23	.08	10.69**	.95	20.95***	3.65
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Married Gays & Lesbians, N=266.

In this chapter I presented the results of regression equations for the hypotheses outlined in Chapter 3. I discussed the results from testing the effect of marriage on health and health behaviors for gays and lesbians in same-sex marriages and same-sex cohabiting relationships. I detailed the results in terms of the five hypotheses mentioned in Chapter 3: testing the differences in self-rated health, high blood pressure, smoking, and binge drinking. I found support for one hypothesis. This indicates that there is a selection effect for gays and lesbians who married immediately after same-sex marriage was available nationwide. Those who were in worse health and needed access to health care may have been among the first to marry. It is possible that there is a lag effect after marriage for health effect but that in the area of smoking, marriage has a positive affect for gays and lesbians. In the next chapter, Chapter 5, I will discuss conclusions, limitations of this research, implications of this research and where future research should focus regarding same-sex marriage as it impacts health.

5. DISCUSSION

In this chapter I will discuss my conclusions, significance of the research, reflect upon the limitations of the data, and outline future research in the area of demography of sexual orientation and marriage.

5.1. Discussion and Summary

In Chapter 4 I discussed the results of the ordered and binary logistic regression equations estimating a set of dependent variables related to health: two different categorizations of self-rated health, high blood pressure, smoking status and binge drinking. While only one of my hypotheses was supported, the results are important in addressing the current gaps in the literature with respect to health and same-sex marriage. It has become clear that what we do not know about same-sex marriage and health far surpasses what we do know or think we know.

In the first and second sets of equations I hoped to find support for my first two hypotheses that stated that those in same-sex marriages have higher self-rated health than those cohabiting, and that those in female-female marriage have higher self-rated health than those in male-male marriage. When measuring health with a binary self-reported health variable I did not find support for the health benefit of marriage for either gays or lesbians. There is no statistical difference in the health of married or cohabiting gays and lesbians in the pooled regression, no difference in the health of married or cohabiting lesbians, married or cohabiting gay men nor married lesbians compared to married gay men. However, a binary self rated health is a rather rough measure of health (only separating two categories of health) and, therefore, might not be able to reveal the differences between those who are married and those who are not married. Health status is nuanced and measuring it in “good” or “not good”, at least for those in this sample, erases the subtle differences in health for gays and lesbians.

When using a four category health variable those finer details and subtle differences emerge. I find some significant effects for marriage. When comparing married and cohabiting gays and lesbians, cohabiting gays and lesbians seem to be reporting better health before age is controlled ($p<.05$, while controlling for gender, race, education, and income). I suggest that the loss of significance after age is added as a control is to be expected. With age comes a decline in health regardless of marital status, sexual orientation or identity and this decline may be seen in more pronounced ways for aging gays and lesbians (Fredriksen-Goldsen and Muraco 2010).

Moving to the results of married and cohabiting lesbians, lesbians who are cohabiting report better health than married lesbians in the full model with all controls added ($p<.05$). However, in the next equation, there is not a difference in the health between married and cohabiting gay men. Also, in the pooled data, when estimating the interaction effect between gender and marital status, that interaction effect remains non-significant. This means that there is no difference in the effect of marriage for women and men. Only in the separate equations do I see the difference – where marriage leads to lower health outcome for women but does not affect the health of men. There is also no difference in health between married lesbians and married gay men.

There are several reasons why marriage might not yield to significant coefficients for predicting self-rated health in these equations. For example, those who are married are older than those who are cohabiting and, as noted above, with age comes a decline in health. (Hence the significant effect of marriage before controlling for age). This indicates that before I take age into account, the age effect is carried by marriage (therefore showing that those who are married have worse health). Also, it is possible that there is a self-selection bias here. Once marriage became a legal option, those who were older may have jumped on the opportunity to get married

sooner because they needed the legal protections that the marriage gives due to their poorer health (or due to anticipating poorer health in the near future).

Additionally, marriage protections enjoyed by heterosexuals have not had the same amount of time to emerge and become protective for these gays and lesbians. Same-sex marriage has only been available nation-wide for a few years and it is likely that more time will be needed to see these protections emerge in the data regarding gays and lesbians in same-sex marriages. Guner, Kulikova, and Llull (2018) suggest that an accumulation of marriage capital, a measure of how many years a person has been married, is needed before a positive impact on health is seen. An accumulation of 10 years of marriage increases the probability of better health by 3% points. They found that this impact is found for those who married in their 20's as well as those who married in their 40's (Guner, Kulikova, and Llull 2018). However, the impact is not seen until middle age, the same as the average age of gays and lesbians represented in this research. It means that 10 years of marriage may be needed to see the positive impact on health for gays and lesbians. However, for the cohabiting lesbians, it seems as though the protections may already be evident. Perhaps for these lesbians, the impact of living together regardless of marital status, indeed the impact of the same-sex female relationship all together, on health is already seen. It is possible that lesbians who are partnered with other lesbians are experiencing the "Thomas effect" in that the relationship is experienced as "real" and thus is "real" in its consequences (Thomas and Thomas 1928). To test this, further analysis is needed comparing cohabiting lesbians to those not in long-term relationship.

In the third set of equations, I hoped to find support for my third and fourth hypotheses. I suggested that married gays and lesbians would have lower instances of hypertension than those who were cohabiting and that married gay men would be worse off in terms of high blood

pressure than married lesbians. My hypotheses were not supported. In fact, I found that cohabiting lesbians are by far better off than all others in this sample with a much lower predicted probability of having high blood pressure ($p<.05$). Marriage might have a positive impact in hypertension diagnosis for men who are gay and so we may eventually see support for my third hypothesis, but it was not found in this sample. Women who are gay, however, are not so fortunate. Table 13 shows that married lesbians have over 2 times the odds of having high blood pressure than do cohabiting lesbians ($p<.05$). Among cohabiting gays and lesbians, the lesbians are healthier. As marriage works among heterosexuals, cohabitation seems to work for lesbians. The protective effect of cohabitation for lesbians, in this instance, is likely less because of the "Thomas effect" and more likely due to a lack of need for the benefits provided by marriage. It is possible that the selection effect is seen in these data. Those who were needing access to marriage and the associated tangible benefits such as access to health care would have worse health and possibly higher levels of blood pressure. For heterosexuals there is a selection effect where those in better health select in to marriage. It is possible that, as seen in the Frisch and Brønnum-Hansen research, gays and lesbians in worse health are selecting in to marriage (2009) while those who are cohabiting experience better levels of health without a diagnosis of hypertension.

The only hypothesis that is supported in this dissertation is the impact of marriage on smoking status. Married lesbians and gay men are less likely to be smokers than cohabiting gays and lesbians ($p<.05$). The impact of marriage on health appears to work in the area of smoking, since, as a behavior it is easier to change than a health diagnosis such as hypertension. The other health outcomes may show a lag in effect whereas smoking status can be changed relatively faster and so no lag in effect is seen. It is possible that other risky behaviors will ultimately be

found to be diminished in and after marriage. Regardless of what may be in the future, I did not find any difference in the odds of binge drinking. Among those who are binge drinkers there are nearly identical percentages of gays and lesbians. Gay men make up 49% of binge drinkers and lesbians account for 51% of binge drinkers. It may be that gays and lesbians in and out of marriage binge drink at the same rates or it might be that they are all equally unlikely to be binge drinkers.

While the majority of my hypotheses were not supported, I suspect that the continued monitoring of these populations and the above listed health outcomes will begin to show something much different. I expect that increases in self-rated health and decreases in hypertension and risky behaviors will be seen over time as more healthy members of this minority population enter into marriage and restrictions to health care access are removed.

5.1.1. Significance

These results reported in my dissertation contributed significantly to the existing literature on the partnership of lesbians and gay men in America. This dissertation is one of the first times the marriage effect has been examined among partnered gays and lesbians. As mentioned in my introductory chapter, marriage is considered to be beneficial for both partners and therefore we expect to see that those who are married experience higher levels of health, financial stability, and overall life satisfaction but that is not seen in these data. For those gays and lesbians who cohabit but are not married, the cohabiting lesbians are healthier. When compared to cohabiting gays and lesbians, the effect of being a lesbian who cohabits with a romantic partner seems to work the same as marriage among heterosexuals does.

There are several reasons that this could be. It could be that marriage does not work for gays and lesbians in the same way that it works for heterosexuals. It could be that marriage does

not offer the same protections for gays and lesbians. It could also be that those who entered into marriage did so in order to access health benefits that were needed. It is possible that the very reason the fight for same-sex marriage started in Hawaii might be one of the reasons that these people entered in to marriage: as a means to affordably access health care when experiencing a health crisis. It is possible that these people married because they were in poor or fair health and needed the benefits offered in marriage such access to health insurance and health care providers.

Recent research documents the negative impact and stress of occupying a sexual minority status on health (Frost, Lahavot and Meyer 2015). A growing body of research shows that men and women who self-identify as gay, lesbian, bisexual or "mostly heterosexual" have higher risks of binge drinking, high blood pressure, sexually transmitted infections, and are more likely to have unhealthy body mass index scores (Dermody et al. 2014; Hatzenbuehler, McLaughlin and Slopen 2013; Katz-Wise et al. 2014; Mojola and Everett 2012).

This minority status does seem to be working against those in this sample, as we would expect. Those who marry may not yet be experiencing the health benefits of marriage especially if they married as a result of needing access to health care. In essence, the major contribution and significance of this dissertation is that for homosexuals as for heterosexuals, marriage might be the pathway to health, but more time is needed for those health outcomes to materialize.

5.2. Limitations

The research reported in this dissertation is not without considerable limitations. First, the data do not allow me to analyze gays and lesbians based on their sexual behavior, sexual or romantic attractions. I was restricted to measure whether a person is a lesbian or a gay male only on the basis of whether the person self-identified as a homosexual and not as a heterosexual and whether or not they were in a living arrangement with a same-sex partner either through

marriage or cohabitation. This is not ideal. Current research employs several definitions of sexual orientation, as mentioned in an earlier chapter with some researchers using as many as seven different dimensions (Bogaert 2012; Laumann et al. 1994). Most research on sexual orientation aims to measure sexual orientation with one's self-reported sexual identity, sexual behavior, and sexual attraction; those represent the so called "trifecta" of sexual orientation (Laumann et al. 1994). Using this trifecta of measurements to identify non-heterosexuals leads to a more holistic understanding of a person's sexual orientation. There is sometimes a gay/lesbian effect on the outcome when using one of the dimensions, while there is not an effect on the outcome measuring orientation with another of the three dimensions. Without having any of the other dimensions in the data to allow a broad understanding of a respondent's sexual orientation and identity, I am limited in my analysis and conclusions. I am limited to only addressing health outcomes based on self-reported sexual orientation.

Another limitation is the over-representation of non-Hispanic Whites with high levels of education in the sample. Both of these characteristics alone have been shown to positively impact health outcomes throughout the life course (Gorman et al. 2015). As mentioned in a pervious chapter, other researchers have found the same over-representation in different nationally representative samples. It is possible that while education can lead to higher levels of income post graduation, access to disposable income and fewer family responsibilities in terms of unplanned pregnancies may lead to higher levels of education or at least educational access. It is worth noting that an analysis that includes higher representation of NH-Blacks and Hispanics as well as more nuanced levels of education, or at least more divers racial representation in the higher education and income levels, should result in very different health outcomes. It is expected that worse health outcomes would be found for those in lower levels of socioeconomic

status, however, men in same-sex marriages are less likely to be in lower SES categories compared to married men who are married to women (Badgett 2018). While the limitation of overrepresentation of well educated, affluent, white respondents surely impacted the results, only further research on this topic will help to tease apart the distinctions between sexual orientation, marriage, and health. By using an intersectional approach to address these differences, we can better understand who is more likely to marry in terms of racial minorities and those in the working class. Feminist literature indicates that when looking at heterosexual couples, these groups are less likely to marry (Raley, Sweeney, and Wondra 2015) and it is important to determine how racial minority status, SES, and sexual minority status intersect with health. Those with different disadvantageous characteristics may experience health differently. For example, a lesbian of a minority race may have a lower health status due to race rather than minority sexual orientation status. It is also possible that the effect of sexual identity would be amplified for minority racial groups. The inability to examine this sample in a way that can take into account the intersectionalities is a limitation that future research should strive to overcome.

Finally, I was limited by the small sample size of partnered gays and lesbians, regardless of marital status. I had just over 500 respondents in the data that spanned 3 years. I had 268 partnered lesbians and 237 partnered gay men. My small sample sizes made it more difficult to find effects that were statistically significant in the different relationship groupings. This limits the reliability and ability to generalize my findings, especially any findings that fail to reject the null hypothesis. The small sample size limits the statistical power and the ability to determine differences between the groups. A larger sample size might well show very different results in statistical significance for many of the equations.

5.3. Future Research

Future research on the impact of marriage for gay men and lesbians should continue to look at health as an outcome. As social acceptance for gays and lesbians fluctuates in America, research should look at health outcomes in different regions for those who marry and those who cohabit. The rise in social acceptance and civil rights in the early 2000's has led to an enhanced visibility of gays and lesbians in national surveys and a rise in the number of estimated gays and lesbians in the general population (Newport 2018). Along with the enhanced visibility of gays and lesbians in surveys, there is greater visibility of gays and lesbians, especially those who marry, in society and in our communities. This raised visibility can lead to increased levels of discrimination largely due to sexual orientation and marital status (Donnelly, Robinson, and Umberson 2018). Simply by being in a same-sex marriage couples have "outed" themselves and made themselves greater targets for discrimination. With the changing political and social landscapes, as we enter a new decade, research on gays and lesbians may show drastically different results. It will be especially important to continue to research and follow the health outcomes of these populations if the civil rights granted in 2015 are restricted or overturned by future court rulings.

This dissertation uses only a few health-related outcomes to measure the impact of marriage on health. More research needs to be conducted on this topic with the addition of other outcomes and risk behaviors to more fully determine whether marriage has an effect on health for same-sex couples. Other potentially telling health risk variables include but are not limited to illicit drug use, extra-marital sexual relations including casual sexual relationships as well as long term sexual relationships without the knowledge of both spouses, excessive speeding while driving, driving without the use of seat belts, and the presence or absence of regular health habits

such as exercise and doctor visits. Other health outcome variables that can be explored in the NHIS are adult BMI calculation, disability status, heart disease, onset diabetes, cancer diagnosis, and mental health outcomes including depression. This dissertation is only scratching the surface of analyzing how marriage affects the health of same-sex couples.

Furthermore, additional research using the vast NHIS data could include an analysis of health outcomes of same-sex couples compared to those who identify as gay or lesbian but are not in domestic relationships, either cohabitation or marriage. Research that includes an examination of bisexuals who are married or cohabiting with same-sex partners could also give insight to possible marriage protections for a population who consistently experiences worse health and SES outcomes when compared to all other relationships and orientation groups. While that was not possible with this research due to small cell sizes and the intentional exclusion of those who did not respond as identifying as either gay or lesbian, a broadened definition of sexual orientation that uses relationship status as a proxy could allow for interesting research and telling results. Furthermore, a study similar to the 2009 study by Frisch and Brønunm-Hansen could be conducted looking at lesbians and gays in same-sex marriage but comparing the health outcomes to heterosexuals in opposite sex marriages.

Additionally, analyses undertaken in the future should also address some of the sample size limitations listed previously. Perhaps as we move farther away from the 2015 SCOTUS ruling, there will be more representation of gays and lesbians who are married or cohabiting in nationally representative surveys. Research with larger samples will be helpful in better understanding the overall impact of relationship status for this population.

Though my findings with regard to a diagnosis of hypertension were not statistically significant when looking at the differences between married and cohabiting gays and lesbians, it

appears as though high blood pressure is more likely for cohabiting gay men than for cohabiting lesbians, and more likely for married lesbians than for cohabiting lesbians. Recent research on blood pressure and union type indicates that men who date men have higher diastolic blood pressure (DBP) than men who date women. However, lesbians who cohabit with same-sex partners and parenting lesbians have lower DBP than women who date or cohabit with the opposite-sex (Frech, Lynch and Barr 2015). I suspect that as we examine these relationships closer, we will see this trend of better health outcomes for partnered lesbians when compared to others in all other union types. This is an important issue that needs further research in order to understand the social impact of sexual orientation and relationship status as it effects health outcomes.

5.4. Reflection

In my examinations of the health outcomes and risky behaviors of lesbians and gay men, I notice an important trend. Though the findings are not statistically significant, cohabiting lesbians have a lower probability of smoking and binge drinking than do cohabiting gay men. They also have lower probability of having high blood pressure. While they may not have a higher probability than gay men of rating their health as very good or excellent, the factors that contribute to better health are working in their favor. These results do not speak directly to my hypotheses that asserted that those in marriages will have higher ratings of self-health than those who are not married but they do present an interesting possibility for the future of lesbians in and out of marriage. It is possible that these health behaviors may translate into a longer and healthier lifespan for lesbians as compared to gay men. If, when controlling for education, income, race, Hispanic ethnicity, and the presence or absence of children, lesbians still have better health

outcomes than their gay male counterparts, in and out of marriage, we will see something interesting emerging in the demographic trends.

This may be further indicated as the marriages that were entered in to as soon as legally possible in order to access health care, in an effort to ease negative health situations, find better health status through access granted by marriage. If those seeking marriage as a means to mitigate poor health ultimately see their health get better and more healthy gays and lesbians select in to marriage, the health disparities between gays and lesbians will widen or grow.

Among married heterosexuals, men benefit more than women from the health-promoting effects of marriage (Read and Gorman 2010). Future research may show that self-rated health improves for lesbians who are married as their actual health behaviors and health outcomes continue to show that they are faring better than gay men. I argue that it is women who make marriage healthy for men in heterosexual marriages, and, thus, they also will likely make marriage healthy for women in female same-sex marriages. This will create a Lesbian Paradox.

This paradox will be much like the Latino Epidemiological Paradox. The Latinx population in the U.S. experience lower socioeconomic levels than non-Hispanic Whites. However, they have health outcomes that meet or exceed the outcomes of non-Hispanic Whites. They also experience lower mortality rates than non-Hispanic Whites. This phenomenon is opposite of what is expected for this population and has been named the Latino Epidemiological Paradox or the Hispanic Paradox (Franzini, Ribble and Keddie 2001).

Decades of research have suggested that the health outcomes and mortality for the American Latinx population are much like the outcomes and mortality rates and risks of non-Hispanic Whites (McCarthy 2015). This has been found in empirical research repeatedly even though the Latinx population is much more similar to non-Hispanic Blacks, socioeconomically

(Hummer et al. 2007). This paradox shows that Latinos/as have advantages in health outcomes and mortality rates even though they have higher levels of disadvantages such as poverty, restricted access to health care, and lower levels of education (Douglas and Saenz 2008; Saenz 2010; Saenz and Morales 2012).

I believe that future research will show that health outcomes for lesbians who marry will be significantly better than those for gay men who marry. However, both groups will continue to be better off than gay men who cohabit. This theory is supported by the predicted probabilities shown in Table 12.1. Cohabiting lesbians have the lowest probability of having high blood pressure. As these lesbians select into marriage, I expect that we will see that they experience better health outcomes than gay men who cohabit or marry. That, coupled with the health improvements expected for those lesbians who selected in to marriage as a way to access health care, should create a category of married persons with excellent health, low levels of risky health behaviors, and ultimately longer lives: A Lesbian Paradox.

This is the final chapter in my dissertation examining the impact on health of marriage for gays and lesbians. This final chapter offered conclusions, limitations of the research, and a few ideas for future research. In this chapter I also detailed the emergence of a new demographic phenomenon, the Lesbian Paradox.

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APPENDIX A

Table A.1. Coefficients for Binary Health Variable & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	-0.12	-0.19	-0.29	-0.24	-0.27	-0.36	-0.12
	(0.20)	(0.20)	(0.21)	(0.21)	(0.21)	(0.33)	(0.20)
Female	-0.47*	-0.42	-0.26	-0.27	-0.32	-0.42	-0.47*
	(0.23)	(0.23)	(0.24)	(0.24)	(0.25)	(0.34)	(0.23)
Race							
NH Black		-0.04	0.28	0.73	0.64	0.64	0.64
		(0.48)	(0.49)	(0.52)	(0.53)	(0.52)	(0.52)
Hispanic		-0.06	0.09	0.17	0.09	0.10	0.12
		(0.28)	(0.28)	(0.31)	(0.31)	(0.31)	(0.31)
NH Other		0.40	0.46	0.61	0.57	0.59	0.60
		(0.58)	(0.53)	(0.54)	(0.54)	(0.54)	(0.54)
College Degree			0.85**	0.62*	0.64*	0.64*	0.63*
			(0.23)	(0.26)	(0.26)	(0.26)	(0.26)
Annual HH Income in Thousands							
35 - 74				1.16**	1.17**	1.16**	1.16**
				(0.37)	(0.36)	(0.36)	(0.36)
75-99				0.90	1.00*	1.00*	1.00*
				(0.46)	(0.46)	(0.46)	(0.45)
> 100				1.28**	1.38**	1.38**	1.38**
				(0.43)	(0.42)	(0.42)	(0.42)
Unknown				0.29	0.35	0.37	0.36
				(0.63)	(0.64)	(0.64)	(0.64)
Age					-0.01	-0.01	-0.01
					(0.01)	(0.01)	(0.01)
Children In HH						0.28	0.27
						(0.36)	(0.36)
Interaction: Married X Female							0.18
							(0.46)
Constant	0.97***	0.45*	-0.46	0.02	-0.03	0.01	0.97***
	(0.18)	(0.22)	(0.37)	(0.50)	(0.50)	(0.50)	(0.18)
Change in F-statistic	2.49	.19	14.4**	3.51**	2.80	.62	.14
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table A.2. Coefficients for Binary Health Variable & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married Lesbian	0.06	-0.02	-0.16	-0.21	-0.17	-0.22
	(0.27)	(0.27)	(0.28)	(0.28)	(0.29)	(0.30)
Race						
NH Black		0.18	0.56	1.16	1.03	1.00
		(0.56)	(0.57)	(0.68)	(0.72)	(0.71)
Hispanic		-0.52	-0.41	-0.40	-0.55	-0.50
		(0.45)	(0.48)	(0.54)	(0.54)	(0.52)
NH Other		0.08	0.24	0.50	0.50	0.55
		(0.82)	(0.77)	(0.69)	(0.69)	(0.69)
College Degree			0.84**	0.57	0.60	0.61
			(0.28)	(0.35)	(0.35)	(0.36)
Annual HH Income in Thousands						
35 - 74				1.82***	1.82***	1.80***
				(0.52)	(0.51)	(0.52)
75-99				1.49*	1.66**	1.65**
				(0.60)	(0.62)	(0.61)
> 100				1.47**	1.58**	1.58**
				(0.52)	(0.51)	(0.51)
Unknown				0.85	0.96	0.99
				(0.76)	(0.78)	(0.76)
Age					-0.02	-0.01
					(0.01)	(0.01)
Children In HH						0.39
						(0.36)
Constant	0.40	0.51*	0.08	-1.02*	-0.40	-0.60
	(0.21)	(0.24)	(0.28)	(0.43)	(0.63)	(0.64)
Change in F-statistic	.05	.55	8.95**	3.41*	1.90	1.17
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Lesbians, N=268.

Table A.3. Coefficients for Binary Health Variable & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	-0.33	-0.40	-0.38	-0.47	-0.41	-0.39
	(0.31)	(0.31)	(0.31)	(0.31)	(0.32)	(0.32)
Race						
NH Black		-0.36	-0.15	-0.16	-0.20	-0.24
		(0.61)	(0.63)	(0.69)	(0.71)	(0.72)
Hispanic		0.56	0.71	0.70	0.64	0.65
		(0.41)	(0.43)	(0.45)	(0.45)	(0.45)
NH Other		0.85	0.76	1.02	0.97	1.04
		(0.90)	(0.80)	(0.97)	(0.97)	(0.95)
College Degree			0.87**	0.78*	0.82*	0.83*
			(0.33)	(0.39)	(0.39)	(0.39)
Annual HH Income in Thousands						
35 – 74				-0.17	-0.14	-0.17
				(0.65)	(0.66)	(0.67)
75-99				-0.33	-0.28	-0.32
				(0.70)	(0.71)	(0.72)
> 100				0.31	0.40	0.38
				(0.71)	(0.73)	(0.76)
Unknown				-1.43	-1.44	-1.53
				(1.05)	(1.04)	(1.04)
Age					-0.01	-0.01
					(0.01)	(0.01)
Children In HH						-0.82
						(0.83)
Constant	1.08***	1.02***	0.46	0.55	0.95	1.02
	(0.21)	(0.22)	(0.29)	(0.59)	(0.67)	(0.69)
Change in F-Statistic	1.14	.96	7.08**	1.60	1.09	.98
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gay Men, N=237.

Table A.4. Coefficients for Binary Health Variable & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	-0.30	-0.28	-0.30	-0.12	-0.12	-0.29
	(0.31)	(0.33)	(0.33)	(0.34)	(0.34)	(0.37)
Race						
NH Black		0.40	0.66	1.11	1.11	1.23
		(0.75)	(0.73)	(0.75)	(0.76)	(0.75)
Hispanic		0.11	0.26	0.31	0.31	0.33
		(0.41)	(0.42)	(0.48)	(0.49)	(0.48)
NH Other		0.23	0.22	0.54	0.54	0.64
		(0.83)	(0.72)	(0.67)	(0.67)	(0.67)
College Degree			0.71*	0.47	0.47	0.46
			(0.30)	(0.35)	(0.35)	(0.37)
Annual HH Income in Thousands						
35 - 74				1.92***	1.92***	1.98***
				(0.56)	(0.56)	(0.57)
75-99				1.70*	1.70*	1.80*
				(0.70)	(0.70)	(0.70)
> 100				1.59*	1.59*	1.65*
				(0.65)	(0.65)	(0.67)
Unknown				1.14	1.14	1.26
				(1.00)	(1.01)	(1.00)
Age					-0.00	0.00
					(0.01)	(0.01)
Children In HH						0.88
						(0.46)
Constant	0.76***	0.70**	0.25	-1.22	-1.22	-1.56
	(0.22)	(0.25)	(0.31)	(0.64)	(0.82)	(0.83)
Change in F-Statistic	.91	.13	5.73*	3.26*	0.00	3.72
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

Table A.5. Coefficients for Four Category Health Variable & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	-0.15	-0.16	-0.22	-0.41*	-0.35	-0.37	-0.29
	(0.18)	(0.18)	(0.18)	(0.19)	(0.19)	(0.19)	(0.29)
Female	-0.49**	-0.48*	-0.43*	-0.27	-0.29	-0.32	-0.24
	(0.19)	(0.19)	(0.19)	(0.20)	(0.20)	(0.21)	(0.28)
Race							
NH Black		-0.22	0.07	0.52	0.42	0.41	0.41
		(0.29)	(0.29)	(0.32)	(0.34)	(0.34)	(0.34)
Hispanic		0.10	0.24	0.43	0.34	0.35	0.33
		(0.24)	(0.25)	(0.26)	(0.26)	(0.26)	(0.25)
NH Other		0.01	-0.04	0.12	0.03	0.04	0.04
		(0.49)	(0.47)	(0.48)	(0.50)	(0.50)	(0.49)
College Degree			0.81***	0.49*	0.52*	0.52*	0.53*
			(0.20)	(0.23)	(0.23)	(0.23)	(0.23)
Annual HH Income in Thousands							
35 - 74				1.10***	1.12***	1.12***	1.12***
				(0.31)	(0.30)	(0.30)	(0.31)
75-99				0.76	0.90*	0.90*	0.91*
				(0.39)	(0.39)	(0.39)	(0.39)
> 100				1.52***	1.66***	1.65***	1.66***
				(0.36)	(0.36)	(0.36)	(0.36)
Unknown				0.40	0.47	0.48	0.49
				(0.61)	(0.62)	(0.62)	(0.62)
Age					-0.02*	-0.01*	-0.01*
					(0.01)	(0.01)	(0.01)
Children In HH						0.15	0.15
						(0.29)	(0.29)
Interaction: Married X Female							-0.15
							(0.40)
/cut1	-2.49***	-2.49***	-2.03***	-1.19***	-1.80***	-1.77***	-1.74***
	(0.21)	(0.21)	(0.23)	(0.33)	(0.42)	(0.42)	(0.44)
/cut2	-1.01***	-1.01***	-0.51**	0.40	-0.19	-0.17	-0.13
	(0.16)	(0.16)	(0.19)	(0.31)	(0.40)	(0.40)	(0.42)
/cut3	0.42*	0.42*	0.96***	1.93***	1.35**	1.37**	1.41**
	(0.17)	(0.17)	(0.21)	(0.33)	(0.42)	(0.42)	(0.44)
Change in F-Statistic	.96	1.72	10.88**	4.38**	12.44***	.14	.34
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table A.6. Coefficients for Four Category Health Variable & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married Lesbians	-0.09	-0.18	-0.32	-0.51*	-0.48	-0.54*
	(0.24)	(0.24)	(0.24)	(0.25)	(0.26)	(0.26)
Race						
NH Black		-0.31	0.03	0.56	0.42	0.40
		(0.29)	(0.31)	(0.37)	(0.40)	(0.41)
Hispanic		-0.49	-0.41	-0.16	-0.27	-0.24
		(0.35)	(0.37)	(0.41)	(0.40)	(0.39)
NH Other		-0.30	-0.22	-0.14	-0.20	-0.15
		(0.97)	(0.91)	(0.66)	(0.66)	(0.65)
College Degree			0.80**	0.41	0.44	0.43
			(0.26)	(0.27)	(0.28)	(0.28)
Annual HH Income in Thousands						
35 - 74				1.49***	1.48***	1.47***
				(0.37)	(0.36)	(0.36)
75-99				1.47**	1.65**	1.65**
				(0.48)	(0.51)	(0.51)
> 100				1.74***	1.85***	1.85***
				(0.42)	(0.41)	(0.41)
Unknown				0.84	0.95	0.98
				(0.83)	(0.87)	(0.85)
Age					-0.02	-0.01
					(0.01)	(0.01)
Children In HH						0.37
						(0.29)
/cut1	-1.99***	-2.17***	-1.81***	-0.94**	-1.54**	-1.36**
	(0.25)	(0.27)	(0.29)	(0.34)	(0.46)	(0.47)
/cut2	-0.49*	-0.66**	-0.26	0.75*	0.16	0.35
	(0.20)	(0.23)	(0.26)	(0.32)	(0.45)	(0.46)
/cut3	0.97***	0.81***	1.25***	2.34***	1.76***	1.95***
	(0.21)	(0.23)	(0.28)	(0.34)	(0.45)	(0.46)
Change in F-Statistic	.5	1.11	5.85*	3.13*	7.46**	.34
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Lesbians, N=268.

Table A.7. Coefficients for Four Category Health Variable & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	-0.22	-0.29	-0.26	-0.41	-0.29	-0.25
	(0.28)	(0.27)	(0.27)	(0.28)	(0.29)	(0.30)
Race						
NH Black		-0.15	0.05	0.18	0.11	0.08
		(0.51)	(0.53)	(0.58)	(0.61)	(0.62)
Hispanic		0.72*	0.86*	0.91*	0.81*	0.83*
		(0.34)	(0.36)	(0.38)	(0.38)	(0.38)
NH Other		0.28	0.13	0.43	0.32	0.32
		(0.46)	(0.42)	(0.60)	(0.65)	(0.62)
College Degree			0.84**	0.72*	0.78*	0.80*
			(0.29)	(0.34)	(0.34)	(0.34)
Annual HH Income in Thousands						
35 - 74				0.13	0.24	0.25
				(0.57)	(0.57)	(0.58)
75-99				-0.50	-0.37	-0.39
				(0.58)	(0.60)	(0.61)
> 100				0.59	0.80	0.82
				(0.58)	(0.60)	(0.63)
Unknown				-0.94	-0.91	-0.94
				(0.71)	(0.71)	(0.72)
Age					-0.02*	-0.02*
					(0.01)	(0.01)
Children In HH						-1.07
						(0.76)
/cut1	-2.47***	-2.40***	-1.89***	-1.86**	-2.56***	-2.61***
	(0.28)	(0.28)	(0.33)	(0.55)	(0.60)	(0.61)
/cut2	-1.03***	-0.94***	-0.40	-0.33	-1.02	-1.05
	(0.19)	(0.20)	(0.27)	(0.49)	(0.56)	(0.57)
/cut3	0.37	0.47*	1.07***	1.20*	0.53	0.51
	(0.20)	(0.22)	(0.28)	(0.51)	(0.58)	(0.59)

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gay Men, N=237.

Table A.8. Coefficients for Four Category Health Variable & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	-0.43	-0.41	-0.43	-0.30	-0.34	-0.41
	(0.27)	(0.28)	(0.27)	(0.28)	(0.29)	(0.31)
Race						
NH Black		0.01	0.24	0.59	0.53	0.55
		(0.37)	(0.37)	(0.38)	(0.40)	(0.40)
Hispanic		0.13	0.30	0.43	0.37	0.37
		(0.32)	(0.32)	(0.34)	(0.34)	(0.35)
NH Other		-0.12	-0.20	-0.03	-0.05	-0.02
		(0.82)	(0.70)	(0.58)	(0.59)	(0.59)
College Degree			0.72**	0.35	0.38	0.36
			(0.27)	(0.29)	(0.29)	(0.30)
Annual HH Income in Thousands						
35 - 74				1.64***	1.66***	1.64***
				(0.45)	(0.45)	(0.45)
75-99				1.33*	1.48*	1.50*
				(0.54)	(0.59)	(0.58)
> 100				1.74***	1.86***	1.85***
				(0.48)	(0.50)	(0.51)
Unknown				1.45	1.54	1.55
				(1.13)	(1.19)	(1.16)
Age					-0.01	-0.01
					(0.01)	(0.01)
Children In HH						0.34
						(0.34)
/cut1	-2.28***	-2.25***	-1.82***	-0.54	-1.03	-0.93
	(0.27)	(0.28)	(0.33)	(0.50)	(0.62)	(0.63)
/cut2	-0.83***	-0.81***	-0.35	1.03*	0.55	0.65
	(0.21)	(0.23)	(0.28)	(0.47)	(0.59)	(0.60)
/cut3	0.62**	0.64**	1.14***	2.56***	2.08***	2.18***
	(0.22)	(0.24)	(0.30)	(0.49)	(0.60)	(0.61)

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

Table A.9. Coefficients for High Blood Pressure & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	0.33	0.31	0.32	0.33	0.13	0.15	-0.39
	(0.21)	(0.21)	(0.21)	(0.22)	(0.24)	(0.23)	(0.34)
Female	-0.45	-0.50*	-0.52*	-0.45	-0.43	-0.38	-1.08**
	(0.25)	(0.25)	(0.25)	(0.25)	(0.26)	(0.27)	(0.39)
Race							
NH Black		-0.16	-0.25	-0.09	0.28	0.28	0.27
		(0.46)	(0.47)	(0.48)	(0.51)	(0.51)	(0.52)
Hispanic		-1.06**	-1.11**	-1.10**	-0.87*	-0.87*	-0.80*
		(0.35)	(0.35)	(0.36)	(0.34)	(0.34)	(0.34)
NH Other		-0.12	-0.12	-0.05	0.13	0.12	0.22
		(0.59)	(0.57)	(0.59)	(0.68)	(0.68)	(0.63)
College Degree			-0.26	-0.30	-0.48	-0.48	-0.55*
			(0.23)	(0.27)	(0.27)	(0.28)	(0.28)
Annual HH Income in Thousands							
35 - 74				0.61	0.67	0.68	0.69
				(0.46)	(0.50)	(0.50)	(0.51)
75-99				1.07*	0.81	0.81	0.80
				(0.48)	(0.51)	(0.50)	(0.52)
> 100				0.51	0.24	0.24	0.22
				(0.48)	(0.52)	(0.52)	(0.53)
Unknown				0.20	0.04	0.02	-0.11
				(0.80)	(0.84)	(0.84)	(0.86)
Age					0.05***	0.05***	0.06***
					(0.01)	(0.01)	(0.01)
Children In HH						-0.28	-0.33
						(0.43)	(0.43)
Interaction: Married X Female							1.20*
							(0.50)
Constant	-0.95***	-0.77***	-0.60*	-1.18**	-3.46***	-3.40***	-3.21***
	(0.20)	(0.21)	(0.26)	(0.42)	(0.56)	(0.57)	(0.58)
Change in F-Statistic	3.21*	3.02*	1.32	1.59	39.35***	.42	5.74*
Change in DF	1	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table A.10. Coefficients for High Blood Pressure & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married Lesbians	0.82*	0.69*	0.79*	0.82*	0.81*	0.84*
	(0.33)	(0.33)	(0.34)	(0.36)	(0.36)	(0.35)
Race						
NH Black		-0.11	-0.34	-0.35	0.13	0.13
		(0.64)	(0.68)	(0.64)	(0.76)	(0.76)
Hispanic		-1.18	-1.28	-1.29	-1.14	-1.16
		(0.64)	(0.66)	(0.67)	(0.70)	(0.70)
NH Other		-0.01	-0.10	-0.10	-0.04	-0.08
		(1.01)	(0.94)	(0.95)	(0.93)	(0.91)
College Degree			-0.53	-0.45	-0.65	-0.65
			(0.36)	(0.42)	(0.44)	(0.45)
Annual HH Income in Thousands						
35 - 74				-0.36	-0.29	-0.27
				(0.54)	(0.57)	(0.58)
75-99				0.79	0.29	0.31
				(0.62)	(0.64)	(0.62)
> 100				-0.14	-0.43	-0.43
				(0.56)	(0.63)	(0.64)
Unknown				-0.16	-0.57	-0.58
				(0.85)	(1.01)	(1.01)
Age					0.06***	0.06***
					(0.01)	(0.01)
Children In HH						-0.34
						(0.54)
Constant	-1.73***	-1.52***	-1.27***	-1.32**	-3.83***	-3.65***
	(0.28)	(0.28)	(0.32)	(0.48)	(0.77)	(0.85)
Change in F-Statistic	6.12*	1.11	2.15	1.22	18.26***	.4
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Married Gays and Lesbians, N=266.

Table A.11. Coefficients for High Blood Pressure & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	-0.07	-0.01	-0.02	-0.05	-0.46	-0.46
	(0.28)	(0.29)	(0.29)	(0.30)	(0.37)	(0.37)
Race						
NH Black		-0.17	-0.20	0.56	0.86	0.86
		(0.64)	(0.66)	(0.67)	(0.65)	(0.65)
Hispanic		-0.88*	-0.90*	-0.92*	-0.61	-0.61
		(0.44)	(0.43)	(0.45)	(0.45)	(0.45)
NH Other		-0.13	-0.11	0.01	0.31	0.32
		(0.78)	(0.77)	(0.68)	(0.86)	(0.87)
College Degree			-0.12	-0.20	-0.46	-0.46
			(0.31)	(0.36)	(0.38)	(0.38)
Annual HH Income in Thousands						
35 - 74				3.88***	4.30***	4.30***
				(0.96)	(1.16)	(1.16)
75-99				3.76***	4.04***	4.03***
				(0.95)	(1.14)	(1.14)
> 100				3.44***	3.56**	3.55**
				(1.00)	(1.18)	(1.17)
Unknown				2.52	2.82	2.81
				(1.45)	(1.46)	(1.46)
Age					0.06***	0.06***
					(0.01)	(0.01)
Children In HH						-0.17
						(0.82)
Constant	-0.75***	-0.62**	-0.54	-3.99***	-6.74***	-6.72***
	(0.20)	(0.23)	(0.32)	(0.92)	(1.34)	(1.34)
Change in F-Statistic	.06	1.35	.17	4.4**	17.61***	.05
Degrees of Freedom	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gay Men, N=237.

Table A.12. Coefficients for High Blood Pressure & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	-0.09	-0.22	-0.21	-0.11	0.06	0.09
	(0.32)	(0.33)	(0.33)	(0.34)	(0.38)	(0.38)
Race						
NH Black		-0.54	-0.68	-0.50	-0.41	-0.43
		(0.68)	(0.75)	(0.70)	(0.69)	(0.69)
Hispanic		-1.25*	-1.33*	-1.29*	-1.02	-1.02
		(0.51)	(0.52)	(0.55)	(0.52)	(0.52)
NH Other		0.41	0.43	0.57	0.64	0.63
		(0.75)	(0.70)	(0.79)	(0.89)	(0.88)
College Degree			-0.41	-0.52	-0.73	-0.73
			(0.35)	(0.43)	(0.45)	(0.45)
Annual HH Income in Thousands						
35 - 74				0.51	0.53	0.54
				(0.61)	(0.67)	(0.68)
75-99				1.75*	1.37	1.37
				(0.73)	(0.79)	(0.79)
> 100				0.71	0.39	0.39
				(0.71)	(0.80)	(0.81)
Unknown				0.62	0.32	0.31
				(0.99)	(1.10)	(1.10)
Age					0.06***	0.06***
					(0.01)	(0.01)
Children In HH						-0.15
						(0.50)
Constant	-0.82***	-0.60**	-0.34	-1.12	-3.68***	-3.62***
	(.10)	(.13)	(.22)	(.20)	(.02)	(.03)
Change in F-Statistic	(0.22)	(0.23)	(0.32)	(0.61)	(0.93)	(0.95)
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Married Gays and Lesbians, N=266.

Table A.13. Coefficients for Smoking Status & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	-0.81**	-0.90**	-0.86**	-0.74**	-0.76**	-0.73**	-0.88*
	(0.28)	(0.27)	(0.28)	(0.28)	(0.27)	(0.27)	(0.40)
Female	-0.20	-0.17	-0.35	-0.53	-0.53	-0.45	-0.57
	(0.27)	(0.27)	(0.29)	(0.30)	(0.30)	(0.30)	(0.39)
Race							
NH Black		-0.68	-1.19*	-1.66*	-1.63*	-1.58*	-1.57*
		(0.60)	(0.60)	(0.71)	(0.72)	(0.71)	(0.70)
Hispanic		-1.26*	-1.54**	-1.72**	-1.69**	-1.70**	-1.67**
		(0.54)	(0.55)	(0.57)	(0.58)	(0.58)	(0.59)
NH Other		1.00*	1.05*	1.07	1.08	1.07*	1.09*
		(0.44)	(0.50)	(0.55)	(0.55)	(0.54)	(0.54)
College Degree			-1.44***	-1.05**	-1.07**	-1.06**	-1.07**
			(0.28)	(0.33)	(0.33)	(0.33)	(0.33)
Annual HH Income in Thousands							
35 – 74				-0.65	-0.65	-0.63	-0.61
				(0.44)	(0.44)	(0.45)	(0.44)
75-99				-0.99	-1.02	-1.00	-0.99
				(0.57)	(0.57)	(0.57)	(0.57)
> 100				-1.43**	-1.48**	-1.47**	-1.47**
				(0.53)	(0.55)	(0.55)	(0.55)
Unknown				-1.60	-1.61	-1.63	-1.65
				(1.10)	(1.09)	(1.08)	(1.10)
Age					0.01	0.00	0.00
					(0.01)	(0.01)	(0.01)
Children In HH						-0.51	-0.52
						(0.47)	(0.46)
Interaction: Married X Female							0.30
							(0.58)
Constant	-1.19***	-1.04***	-0.20	0.61	0.38	0.44	0.48
	(0.23)	(0.24)	(0.30)	(0.46)	(0.59)	(0.59)	(0.61)
Change in F-Statistic	4.73**	4.93**	25.51***	1.95	.38	1.19	.27
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table A.14. Coefficients for Smoking Status & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married	-0.76*	-0.96*	-0.78*	-0.70	-0.71	-0.67
	(0.38)	(0.37)	(0.37)	(0.37)	(0.37)	(0.37)
Race						
NH Black		-0.56	-1.13	-1.36	-1.30	-1.26
		(0.69)	(0.72)	(0.89)	(0.90)	(0.89)
Hispanic		-1.67*	-1.92*	-2.07*	-2.03*	-2.03*
		(0.77)	(0.81)	(0.84)	(0.84)	(0.84)
NH Other		1.43	1.30	1.23	1.24	1.20
		(0.87)	(0.77)	(0.69)	(0.68)	(0.68)
College Degree			-1.39**	-1.18*	-1.19*	-1.18*
			(0.44)	(0.46)	(0.46)	(0.46)
Annual HH Income in Thousands						
35 - 74				-0.29	-0.28	-0.25
				(0.54)	(0.54)	(0.54)
75-99				-0.86	-0.89	-0.86
				(0.84)	(0.84)	(0.84)
> 100				-0.79	-0.83	-0.82
				(0.64)	(0.67)	(0.67)
Unknown				-0.38	-0.40	-0.42
				(0.91)	(0.93)	(0.92)
Age					0.01	0.00
					(0.01)	(0.01)
Children In HH						-0.31
						(0.48)
Constant	-1.41***	-1.20***	-0.60	-0.23	-0.46	-0.33
	(0.23)	(0.28)	(0.32)	(0.50)	(0.76)	(0.78)
Change in F-Statistic	4.13*	3.01*	9.91**	.47	.14	.41
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Lesbians, N=268.

Table A.15. Coefficients for Smoking Status & Married vs Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married	-0.89*	-0.93*	-0.93*	-0.90*	-0.95*	-0.96*
	(0.37)	(0.36)	(0.36)	(0.43)	(0.40)	(0.40)
Race						
NH Black		-0.85	-0.85	-2.53*	-2.53*	-2.76*
		(1.03)	(1.03)	(1.10)	(1.12)	(1.15)
Hispanic		-1.02	-1.02	-1.58*	-1.56*	-1.65*
		(0.67)	(0.67)	(0.76)	(0.77)	(0.81)
NH Other		1.06	1.06	1.45	1.48	1.70
		(0.94)	(0.94)	(1.18)	(1.18)	(1.03)
College Degree				-0.96	-0.99*	-1.05*
				(0.50)	(0.48)	(0.48)
Annual HH Income in Thousands						
35 – 74				-1.65*	-1.69*	-1.86*
				(0.77)	(0.77)	(0.79)
75-99				-1.87*	-1.92*	-2.11*
				(0.85)	(0.85)	(0.90)
> 100				-2.68**	-2.75**	-2.96**
				(0.83)	(0.86)	(0.89)
Age					0.01	0.01
					(0.01)	(0.01)
Children In HH						-2.30
						(1.96)
Constant	-1.12***	-0.98***	-0.98***	1.63*	1.38	1.63
	(0.24)	(0.24)	(0.24)	(0.73)	(0.92)	(0.94)
Change in F-Statistic	5.00*	1.33	13.04***	1.22	.19	1.07
Change in DF	1	3	1	3	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Gay Men, N=231.

Table A.16. Coefficients for Smoking Status & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Female	-0.14	-0.11	-0.10	-0.28	-0.27	-0.23
	(0.45)	(0.45)	(0.45)	(0.44)	(0.43)	(0.47)
Race						
Not NH White		-0.23	0.01	0.18	0.14	0.14
		(0.58)	(0.63)	(0.67)	(0.70)	(0.70)
College Degree			-1.24*	-0.95	-0.98	-0.97
			(0.51)	(0.55)	(0.54)	(0.54)
Annual HH Income in Thousands						
35 – 74				-0.36	-0.35	-0.35
				(0.61)	(0.60)	(0.60)
75-99				-0.93	-0.99	-1.00
				(0.77)	(0.79)	(0.79)
> 100				-1.01	-1.07	-1.07
				(0.64)	(0.66)	(0.66)
Age					0.01	0.01
					(0.02)	(0.02)
Children In HH						-0.20
						(0.60)
Constant	-2.04***	-1.89***	-1.43*	-0.96	-1.32	-1.27
	(0.33)	(0.54)	(0.55)	(0.73)	(0.71)	(0.74)
Change in F-Statistic	.1	.15	5.85*	1	.29	.11
Change in DF	1	1	1	3	1	1

Standard errors in parentheses; DF = degrees of freedom

*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.

Source: NHIS 2016 – 2018 Married Gay & Lesbians, N=266.

Table A.17. Coefficients for Binge Drinking & Married vs Cohabiting Gays and Lesbians

	M1	M2	M3	M4	M5	M6	M7
Married	0.03	0.06	0.08	0.06	0.29	0.38	0.28
	(0.22)	(0.22)	(0.22)	(0.23)	(0.25)	(0.25)	(0.33)
Female	-0.19	-0.17	-0.21	-0.20	-0.27	-0.10	-0.21
	(0.21)	(0.21)	(0.21)	(0.21)	(0.23)	(0.23)	(0.30)
Race							
NH Black		0.10	-0.05	-0.03	-0.44	-0.41	-0.41
		(0.36)	(0.36)	(0.39)	(0.43)	(0.43)	(0.43)
Hispanic		0.49	0.43	0.42	0.11	0.08	0.11
		(0.28)	(0.28)	(0.28)	(0.29)	(0.30)	(0.29)
NH Other		-0.07	-0.08	-0.07	-0.23	-0.27	-0.26
		(0.42)	(0.43)	(0.43)	(0.46)	(0.45)	(0.44)
College Degree			-0.40	-0.43	-0.40	-0.40	-0.41
			(0.20)	(0.24)	(0.24)	(0.24)	(0.25)
Annual HH Income in Thousands							
35 – 74				0.14	0.17	0.21	0.21
				(0.37)	(0.39)	(0.39)	(0.39)
75-99				-0.63	-0.37	-0.39	-0.39
				(0.44)	(0.46)	(0.48)	(0.48)
> 100				0.10	0.52	0.54	0.53
				(0.41)	(0.43)	(0.43)	(0.44)
Unknown				-0.37	-0.26	-0.34	-0.34
				(0.69)	(0.73)	(0.73)	(0.72)
Age					-0.05***	-0.06***	-0.06***
					(0.01)	(0.01)	(0.01)
Children In HH						-0.94*	-0.94*
						(0.37)	(0.37)
Interaction: Married X Female							0.21
							(0.44)
Constant	-0.42*	-0.53**	-0.27	-0.23	1.86***	2.03***	2.08***
	(0.17)	(0.19)	(0.23)	(0.36)	(0.52)	(0.51)	(0.53)
Change in F-Statistic	.39	1.05	3.81	1.28	31.82***	6.46*	.22
Change in DF	2	3	1	4	1	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gays and Lesbians, N=505.

Table A.18. Coefficients for Binge Drinking & Married vs Cohabiting Lesbians

	M1	M2	M3	M4	M5	M6
Married	0.07	0.21	0.26	0.20	0.31	0.40
	(0.29)	(0.29)	(0.30)	(0.31)	(0.33)	(0.33)
Race						
NH Black		-0.38	-0.50	-0.47	-0.92	-0.92
		(0.55)	(0.57)	(0.59)	(0.63)	(0.63)
Hispanic		0.87*	0.83	0.99*	0.67	0.62
		(0.42)	(0.43)	(0.43)	(0.44)	(0.46)
NH Other		0.33	0.28	0.24	0.21	0.12
		(0.75)	(0.73)	(0.74)	(0.79)	(0.78)
College Degree			-0.29	-0.42	-0.40	-0.41
			(0.31)	(0.34)	(0.33)	(0.33)
Annual HH Income in Thousands						
35 - 74				-0.21	-0.28	-0.24
				(0.47)	(0.47)	(0.46)
75-99				-0.29	0.09	0.11
				(0.60)	(0.62)	(0.65)
> 100				0.29	0.60	0.61
				(0.54)	(0.53)	(0.52)
Unknown				-0.63	-0.42	-0.47
				(0.72)	(0.75)	(0.75)
Age					-0.05***	-0.05***
					(0.01)	(0.01)
Children In HH						-0.61
						(0.35)
Constant	-0.63**	-0.83***	-0.69*	-0.60	1.21	1.52*
	(0.21)	(0.23)	(0.28)	(0.41)	(0.63)	(0.64)
Change in F-Statistic	.06	1.69	.88	.72	12.81***	3.02
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Lesbians, N=268.

Table A.19. Coefficients for Binge Drinking & Married vs. Cohabiting Gays

	M1	M2	M3	M4	M5	M6
Married Gays	-0.01	0.01	-0.02	-0.00	0.38	0.46
	(0.30)	(0.29)	(0.29)	(0.30)	(0.33)	(0.34)
Race						
NH Black		0.65	0.52	0.66	0.43	0.36
		(0.58)	(0.57)	(0.58)	(0.63)	(0.64)
Hispanic		0.20	0.13	0.08	-0.30	-0.29
		(0.41)	(0.41)	(0.40)	(0.44)	(0.44)
NH Other		-0.40	-0.34	-0.43	-0.83	-0.69
		(0.54)	(0.60)	(0.55)	(0.75)	(0.76)
College Degree			-0.56	-0.52	-0.48	-0.46
			(0.30)	(0.37)	(0.42)	(0.43)
Annual HH Income in Thousands						
35 - 74				0.57	0.95	0.93
				(0.59)	(0.63)	(0.65)
75-99				-0.94	-0.70	-0.78
				(0.67)	(0.67)	(0.70)
> 100				0.09	0.84	0.80
				(0.69)	(0.73)	(0.76)
Unknown				0.31	0.30	0.11
				(1.41)	(1.73)	(1.74)
Age					-0.07***	-0.07***
					(0.01)	(0.01)
Children In HH						-2.53*
						(1.22)
Constant	-0.40*	-0.47*	-0.10	-0.18	2.26**	2.38**
	(0.17)	(0.19)	(0.27)	(0.56)	(0.80)	(0.82)
Change in F-Statistic	.00	.72	3.59	2.28	23.25***	4.32*
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Gay Men, N=237.

Table A.20. Coefficients for Binge Drinking & Married Lesbians vs Married Gays

	M1	M2	M3	M4	M5	M6
Married Gays	-0.15	-0.13	-0.12	-0.10	-0.27	-0.10
	(0.32)	(0.32)	(0.32)	(0.33)	(0.35)	(0.36)
Race						
NH Black		-0.22	-0.53	-0.66	-1.17	-1.26
		(0.68)	(0.64)	(0.67)	(0.67)	(0.71)
Hispanic		0.13	-0.04	-0.14	-0.50	-0.51
		(0.37)	(0.37)	(0.38)	(0.40)	(0.40)
NH Other		-0.08	-0.06	-0.13	-0.18	-0.27
		(0.82)	(0.75)	(0.75)	(0.79)	(0.79)
College Degree			-0.87**	-0.86**	-0.82**	-0.80**
			(0.27)	(0.29)	(0.28)	(0.28)
Annual HH Income in Thousands						
35 - 74				0.17	0.20	0.21
				(0.55)	(0.58)	(0.60)
75-99				-0.72	-0.33	-0.38
				(0.68)	(0.73)	(0.79)
> 100				-0.05	0.40	0.38
				(0.58)	(0.59)	(0.61)
Unknown				-1.18	-1.08	-1.16
				(1.07)	(1.25)	(1.26)
Age					-0.06***	-0.06***
					(0.01)	(0.01)
Children In HH						-0.81
						(0.42)
Constant	-0.41	-0.42	0.14	0.27	2.88***	3.17***
	(0.23)	(0.25)	(0.31)	(0.59)	(0.81)	(0.85)
Change in F-Statistic	.23	.08	10.69**	.95	20.95***	3.65
Change in DF	1	3	1	4	1	1

Standard errors in parentheses; DF = degrees of freedom
*** p<.001, ** p<.01, * p<.05 Calculated using survey estimation weighting.
Source: NHIS 2016 - 2018 Married Gays & Lesbians, N=266.