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Lesbian/Gay/Bisexual (LGB) Patient Satisfaction with Health Care

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2010

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Abstract

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Lesbian/Gay/Bisexual (LGB) individuals face significant health disparities compared to non-LGB individuals. Lesbians and bisexual women have higher rates of overweight and obesity, have riskier health behaviors and have lower use of preventative services. Further, gay and bisexual men have a higher prevalence of HIV/AIDS and substance use/abuse disorders, as well as higher rates of psychiatric morbidity. Little is known about the patient satisfaction of LGB individuals, a measure that is used as an indicator of health care quality. Studies have shown that higher patient satisfaction is associated with improved health outcomes. To study the patient satisfaction of this population, data from the 2013-2014 National Health Interview Survey (NHIS) was utilized. The study sample included adults age 18-64 who have had health care in the last 12 months. An ordered logistic model controlling for covariates was used to predict patient satisfaction. To test whether geographic region moderated this relationship, an interaction term between LGB status and geographic region was added to the model. This study hypothesized that LGB individuals would have lower rates of satisfaction compared to heterosexuals. Additionally, based on state policies protecting people based on sexual orientation, the study predicted that LGB individuals living in the Midwest or South would have lower rates of satisfaction with health care compared to those living in the Northeast or West. The study found no difference in satisfaction for LGB individuals and heterosexuals and no difference by region for LGB individuals' patient satisfaction. These results may show a recent improvement in the health care setting, leading to a future reduction health disparities of this group. Results also show a growing acceptance of LGB rights, finding no regional differences in satisfaction among this population. Implications of this study show the importance of current policies and practices that support training health care professionals to treat their LGB patients and that these policies should be enhanced to continue to meet the needs of this population.

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Chapter 1: Introduction

Overview

Lesbian, gay, and bisexual (LGB) individuals face significant health disparities compared to non-LGB individuals. For example, lesbians and bisexual women have higher rates of overweight and obesity, have riskier health behaviors (Diamant, Wold, Spritzer, & Gelberg, 2000; Valanis et al., 2000), and have lower use of preventative services (Buchmueller & Carpenter, 2010; Hutchinson, Thompson, & Cederbaum, 2006; Tracy, Lydecker, & Ireland, 2010; Tracy, Schluterman, & Greenberg, 2013). Gay and bisexual men have a higher prevalence of HIV/AIDS (Centers for Disease Control and Prevention, 2014) and substance use/abuse disorders, as well as higher rates of psychiatric morbidity (Wolitski, 2008). LGB individuals also have historically faced discrimination and continue to deal with stigma, factors that have partly led to these disparities (Institute of Medicine, 2011).

The causes of these health disparities in the LGB community are not well understood and this lack of understanding may be due to limited LGB health research. One source of these disparities may be low levels of patient satisfaction with health care among LGB individuals. Patient satisfaction, a measure of health care quality, may serve as a barrier to receipt of care leading to these health disparities. Patient satisfaction reflects an individual's experiences with their care, and a low level of satisfaction may be an indicator of a lower quality of care. Studies have shown that higher patient satisfaction is associated with improved health outcomes (Kane, Maciejewski, & Finch, 1997; Siriwardena, 2014; Woolley, Kane, Hughes, & Wright, 1978).

Patient Satisfaction of the LGB Population

To address the health disparities among the LGB population, it is critical to better understand the issues affecting their level of patient satisfaction. High patient satisfaction has been shown to be associated with better health outcomes (Kane et al., 1997; Siriwardena, 2014; Woolley et al., 1978). This may be due to improved communication between patient and provider, as well as higher levels of trust in the provider. Low patient satisfaction may therefore reflect poor communication and trust issues leading to worse health outcomes. In addition, improved communication can lead to improved health behaviors, such as preventative service use (Flach et al., 2004). Lower satisfaction can therefore result in poor health behaviors, leading to poor health outcomes. Poor health outcomes can result in a burden on the health care system, since these bad outcomes can require high treatment and disease management costs. Learning about the patient satisfaction of this group can therefore help to improve LGB individuals' health and lower health care costs (U.S. Department of Health and Human Services, 2014). In addition, stigma and discrimination may be contributing factors to low patient satisfaction and increased health disparities among the LGB community (Bayer, 1987; Harrison & Silenzio, 1996; Institute of Medicine, 2011; Rounds, McGrath & Walsh, 2013). Geography, or where one lives in the United States, may also contribute to low patient satisfaction if there are cultural, social, or even religious influences, as well as laws, in specific regions that support discrimination and homophobia. These attitudes and policies can negatively affect LGB individuals' experiences in the health care setting.

Approach/Rationale

Previous research has highlighted specific health disparities experienced by LGB individuals compared to non-LGB individuals (Austin et al., 2009; Daniel & Butkus, 2015; Katz-Wise et al., 2014). Unfortunately, little has been done to examine why these disparities may exist and what solutions are available to reduce these disparities. The quality of health care delivered to LGB individuals and their resulting level of satisfaction may play a role in these disparities, since low patient satisfaction is associated with poor health outcomes (Kane et al., 1997; Siriwardena, 2014; Woolley et al., 1978). This study sought to understand the patient satisfaction of the United States LGB population compared to the general, non-LGB population. To understand more about how living in different parts of the country may be associated with LGB individual' experiences in the health care setting and their resulting satisfaction, the study looked at the region of residence and how this modifies the relationship between LGB status and patient satisfaction.

Conceptual Framework

To guide the research, the study uses the Andersen Model for Health Care Utilization (Andersen, 1995). This framework posits that an individuals' use of health care services and outcomes (patient satisfaction in this study) is based on their *predisposing, enabling* and *need* characteristics. This framework provides guidance as to how the mechanisms and moderators affect the relationship between sexual orientation and patient satisfaction.

Research Questions

Based on the limited previous research about the LGB population and the lack of knowledge about the source of their health disparities, this study proposes to examine the patient satisfaction of LGB individuals. The primary research question in this study is the following: *Do lesbian/gay/bisexual individuals have lower levels of patient satisfaction compared to heterosexual individuals?* The secondary research question is the following: *Does the geographic region of residence strengthen the negative association between LGB status and patient health care satisfaction?*

The following hypotheses will be tested:

H1. There is a negative association between Lesbian/Gay/Bi-sexual (LGB) status and patient satisfaction with health care.

H2: The negative association between LGB status and patient satisfaction with health care is strengthened by living in the South or Midwest.

Research Design

This study uses a quasi-experimental design to test the research questions. The National Health Interview Survey (2013 and 2014 datasets), a nationally representative sample of the United States, will be used in this study. To answer the research questions, the study used multivariate regression analyses. A multivariate model, controlling for relevant covariates, was constructed to test the patient satisfaction of LGB individuals vs. the control group (heterosexuals). To test whether living in the South or Midwest strengthens the negative relationship between LGB individuals and patient satisfaction,

the model was run with an interaction term between LGB individuals and region of residence.

Study Implications

This research will contribute to our understanding of the LGB population and why they face considerable health disparities compared to non-LGB individuals. Results may expose regional differences in satisfaction among this population. Implications of this study can shape future curriculum for medical school and continuing medical education focusing on the quality of care for LGB individuals. The study will also improve our understanding of the health care needs of this population.

Chapter 2: Literature Review

Introduction

LGB health disparities are rooted in a history of discrimination and stigma faced by this community in the United States (Bayer, 1987). Increasing acceptance has led to more research that has identified significant health disparities for LGB individuals (Bayer, 1987). Few large cohort studies have specifically examined patient satisfaction of this population, an important measure of health care quality, but smaller studies and other related findings suggest LGB individuals have lower patient satisfaction compared to heterosexuals. Living in areas of the country with policies that discriminate against homosexuals may also affect patient satisfaction.

LGBT Health: A Historical Context

According to the Institute of Medicine, “the phrase ‘lesbian, gay, bisexual, and transgender community’ (or ‘LGBT community’) refers to a broad coalition of groups that are diverse with respect to gender, sexual orientation, race/ethnicity, and socioeconomic status...They share the fact that their sexual orientation is not exclusively heterosexual” (IOM, 2011). Sexual orientation “refers to the sex of those to whom one is sexually and romantically attracted” (*Definition of Terms: Sex, Gender, Gender Identity, Sexual Orientation* 2011). Many of the disparities that LGBT individuals face stem from the stigmatization that they have experienced throughout history. This systematic stigmatization affects LGBT individuals’ experiences in society as well as how heterosexual individuals have been taught to treat them. A historical understanding of this stigmatization is helpful in understanding their current health disparities and experiences with the health care system (*The Health of Lesbian, Gay, Bisexual and Transgender People: Building a Foundation for Better Understanding*, 2011). Sodomy was illegal in the United States, and it was only in the 1970s when states started to repeal these laws. In 1987, homosexuality was removed as an illness in the Diagnostic and Statistical Manual of Mental Disorders (DSM). During this time, LGBT individuals continued to face discrimination (Bayer, 1987).

The AIDS epidemic had a major impact on the LGBT community. The trauma of having so many members of the community pass away has had a lasting effect on the mental health of LGB individuals (IOM, 2011). Additionally, AIDS added to the existing stigma around sexual minorities since the disease was originally detected almost exclusively in gay men (G. M. a. J. P. C. Herek, 1999). The aftermath of the epidemic did

lead to some positive changes, fostering unity among the LGBT community and creating a stronger infrastructure to support LGBT health (NRC, 1993).

There is greater acceptance of LGBT individuals illustrated through laws passed in the last twenty years. These include hate crime legislation passed in the 1990s, *Lawrence v. Texas* that struck down sodomy laws across the country in 2003, and the most recent federal legalization of same-sex marriage in 2015 ("*Lawrence v. Texas*," 2003).

Research about this population has continued to increase. The AIDS epidemic eventually lead to significant research about HIV/AIDS (Fundors Concerned about AIDS, 2013). While there has been a dearth of research compared to other minority groups, LGBT research has increasingly become a priority. Today, there is a renewed push to learn more about this population, factors affecting barriers to care and how they are currently experiencing the health care system. This increased focus is illustrated by one of the goals of Healthy People 2020, which is to increase knowledge and reduce disparities in the lesbian/gay/bisexual/transgender (LGBT) population (US Department of Health and Human Services, 2014). The Institute of Medicine (IOM) has also set a similar public health objective (IOM, 2011). In the IOM report, "The Health of Lesbian, Gay, Bisexual, and Transgender People," health care inequalities are a priority research area due to evidence of disparities in LGBT health outcomes. Learning about this population's patient satisfaction may contribute to this understanding of disparities.

LGBT Health Disparities

While disparities exist for the LGBT population as a whole, this research focuses on LGB (Lesbian/Gay/Bisexual) individuals due to the limited Transgender sample available in the datasets. A review of the limited LGB literature suggests that these disparities include evidence that LGB populations experience lower health status (Austin et al., 2009; Daniel & Butkus, 2015; Katz-Wise et al., 2014). Specifically, lesbians and bisexual women have higher rates of overweight and obesity. They also have riskier behaviors including smoking (Diamant et al., 2000; Valanis et al., 2000), as well as inadequate use of preventative health services, such as PAP smears and mammograms (Buchmueller & Carpenter, 2010; Hutchinson et al., 2006; Tracy et al., 2010; Tracy et al., 2013). Studies have found that LGB individuals have a higher prevalence of mental health disorders compared to heterosexual individuals. Particularly, gay and bisexual men have higher rates of body image and eating disorders (Mayer et al., 2008). They also have higher rates of psychiatric morbidity and higher prevalence of substance use/abuse disorders (Wolitski, 2008). Further, gay and bisexual men have high rates of HIV/AIDS. While they only account for about 4% of the male population, they account for 78% of new HIV infections among males and 63% of all new HIV infections (Centers for Disease Control and Prevention, 2014) More information about LGB individuals' satisfaction with their health care may lead to a better understanding of why this group has poorer health outcomes. While studies have consistently found disparities in patient satisfaction for racial/ethnic minority populations (Nápoles, Gregorich, Santoyo-Olsson, O'Brien, & Stewart, 2009), few studies have looked at whether disparities may exist for sexual minorities.

Patient Satisfaction

Patient satisfaction is increasingly being used as a measure of health care quality (Aharony & Strasser, 1993). To construct a theoretical model looking at patient satisfaction for LGB individuals, it is helpful to consider frequently employed theories by LGB research. Commonly used models include the social ecology model (Glass & McAtee, 2006), life course perspective (Elder, 1998) and a minority stress model (Brooks, 1981; Meyer, 1995, 2003). These models can provide an understanding about the stigma these individuals face on multiple levels over their lifetimes, and that this stigma exerts continual stress on LGB individuals (IOM, 2011). These models also explain, along with the historical context of the LGB population, why they may experience lower levels of patient satisfaction when engaging with the health care system. Donabedian's approach to quality assessment in health care is helpful in developing an understanding of patient satisfaction. This model explains that quality can be assessed by looking at the health care structures, processes and outcomes (Donabedian, 1988). This further helps us to understand how different levels of the system can affect quality of care provided to patients. This model is especially useful when thinking through how providers may be less knowledgeable of LBG health and potentially have prejudices, affecting the patient/provider interactions affect for LGB individuals.

To evolve the theoretical perspective of health care quality and outcomes, this study will utilize Andersen Model for Health Care Utilization. This model explains that an individual's use of health services and health outcomes is based on their individual predisposing, enabling and need characteristics (Andersen, 1995). Studies that have

looked at health care utilization and quality among LGB individuals have employed this model as a conceptual framework to guide hypotheses and decisions about included covariates (Li, Matthews, Aranda, Patel, & Patel, 2015; Simpson, Balsam, Cochran, Lehavot, & Gold, 2013; Tjepkema, 2008). This study will therefore be primarily using this framework as a guide to understanding the patient satisfaction of LGB individuals and various factors that may contribute to this relationship.

Patient satisfaction has become an important metric in the health care system to measure patient's experience with health care (Aharony & Strasser, 1993). Donabedian first proposed the importance of the measure of patient satisfaction in 1966. Ware further developed and defined the measure in the late 1970s and early 1980s, developing a scale to measure patient satisfaction (Clapham, Pushman, & Chung, 2010). In 1985, Press Ganey began disseminating surveys to hospitals to measure their patient satisfaction. These surveys were used internally in hospitals for many years (Siegrist, 2013). Finally, illustrating the growing importance of this measure, the Centers for Medicare & Medicaid Services (CMS) implemented the HCAPS survey in 2006 to set a national standard for patient satisfaction data collection and reporting in hospitals ("The HCAHPS Survey – Frequently Asked Questions,").

Like other quality measures, patient satisfaction provides information about how the health care system can be improved. Generally, patient satisfaction can be defined as an individual's "personal evaluation of health care services and providers" (Ware, 1983). It connects the processes of care to the patients' expectations of the care that they receive (Larson, Rovers, & MacKeigan, 2002). Research has shown that positive patient satisfaction has been associated with better outcomes, including reducing illness

symptoms, improving physical function, and overall improved health status (Kane et al., 1997; Siriwardena, 2014; Woolley et al., 1978). Positive patient satisfaction has also been shown to improve outcomes in chronic diseases, such as diabetes (Alazri & Neal, 2003). Moreover, high levels of satisfaction have led to improved safety, including better technical quality of care, adherence to clinical guidelines and fewer adverse events (Doyle, Lennox, & Bell, 2013). In hospitals, positive satisfaction has also been associated with shorter lengths of stay, as well as lower mortality and readmission rates (Tsai, Orav, & Jha, 2015). Patient satisfaction is therefore an important predictor of health outcomes.

LGB Patient Satisfaction with Health Care: What is Known

While there is little research looking at LGB individuals' level of patient satisfaction, a review of the literature finds evidence of lower patient satisfaction for individuals in same-sex couples (Buchmueller & Carpenter, 2010; Clift & Kirby, 2012).. These studies have used nationally representative samples comparing the satisfaction of healthcare with those in same-sex couples to those in heterosexual couples' satisfaction (Buchmueller & Carpenter, 2010; Clift & Kirby, 2012). Compared to individuals in heterosexual couples, individuals in same-sex couples are more likely to be dissatisfied with their interactions with their doctor. Those in same-sex couples are also more likely to be unsatisfied with the length of physician visits and the amount of respect the doctor shows them (Buchmueller & Carpenter, 2010; Clift & Kirby, 2012). These results about individuals in same-sex couples suggest that LGB individuals overall may also have lower satisfaction ratings compared to heterosexual individuals.

Studies that have looked at LGB individuals, rather than those in couples, have reported lower quality of communication and lower levels of trust between patient and provider for LGB patients, both components of patient satisfaction (Chang, Chen, & Lan, 2013; Nápoles et al., 2009). Lesbian and gay patients may be reluctant to openly communicate with physicians (Klitzman & Greenberg, 2002). This could play a role in the low rate of preventative service use among lesbian and bisexual women, as research has found that improved communication is associated with better preventative service use (Flach et al., 2004). This reluctance to communicate may be due to a lack of social concordance with their physicians, meaning that LGB individuals generally see heterosexual, rather than homosexual, health care providers. This lack of shared social experiences can affect the quality of communication (Thornton, Powe, Roter, & Cooper, 2011). Trust in the health care provider can also affect the relationship between physician and patient, and lower levels of trust may be correlated with unmet medical needs (Thom, Kravitz, Bell, Krupat, & Azari, 2002). Research has found that gay and lesbian patients may not trust their providers (Klitzman & Greenberg, 2002), especially if they are worried about discrimination when accessing health care (Harrison & Silenzio, 1996; Rounds, McGrath, & Walsh, 2013).

These low levels of trust and communication quality with providers can lead to nondisclosure of sexual orientation (Klitzman & Greenberg, 2002). If LGB individuals do not disclose their sexual orientation during an appointment, this can limit the doctor's ability to properly advise a patient about health risks specific to the LGB population (Klitzman & Greenberg, 2002). In contrast, individuals who do share their sexual minority status with their doctor are more likely to be satisfied with their providers

(Dardick & Grady, 1980). Gay males who disclose their sexual orientation may be more likely to get an STD test (Dardick & Grady, 1980) and more likely to get an HIV test (Wall, Khosropour, & Sullivan, 2010), illustrating the potential correlation between satisfaction and preventative care service use for LGB individuals. Additionally, one study found that lesbians and bisexual women in Israel who disclose their sexual orientation have higher self-reported health status compared to those that do not (Mor et al., 2015), but are still overall less satisfied than heterosexual women with the Israeli health care system. While the sample was not nationally representative of the Israeli population, this recent study is one of the few that have looked at patient satisfaction rates among LGB individuals. The authors' findings contribute to the evidence of lower satisfaction for this population.

While there is strong evidence to suggest that LGB individuals have lower satisfaction with their health care, no studies have looked specifically at this measure in a nationally representative U.S. sample of LGB individuals. It is important to understand LGB patients' level of satisfaction with their care in order to identify potential differences that exist between LGB patients and heterosexual patients in the health care setting. Policies can then work to address issues in future interventions for this population. Based on this knowledge gap, this study proposes to answer the following question: Do lesbian/gay/bisexual individuals have lower levels of patient satisfaction compared to heterosexual individuals? Results of the study will help to illustrate whether patient satisfaction differs between LGB and heterosexual patients, and if this may lead to health disparities within the LGB community.

Geographic Region

Geographic region may also play a role in the satisfaction of LGB individuals. Overall political differences in regions of the country may affect experiences in the health care system and patient satisfaction for LGB individuals. The Midwest and South have higher rates of Republican voters compared to the Northeast and West (Pew Research Center, 2015). The difference in viewpoints on LGB rights of the two parties' voters can be illustrated by looking at same sex marriage. In 2015, 66% of Democrats favored same sex marriage, while only 32% of Republicans did (Pew Research Center, 2015). A Gallup poll looking at same-sex marriage favorability by region found that 67% in the Northeast and 58% in the West supported same-sex marriage, compared to 53% in the Midwest and 48% in the South (McCarthy, 2014). Therefore, overall attitudes in the Midwest and South, compared to the Northeast and West, may foster a less welcoming atmosphere for LGB individuals in health care settings, leading to lower rates of satisfaction.

Research has shown the importance of social factors on health and this can be extended to social policies (Mark L. Hatzenbuehler, Keyes, & Hasin, 2009). Related to the difference in political party representation, state level policies may also be important. These policies are examples of institutional discrimination, or circumstances at the societal level that can restrict the rights and opportunities for a group (Link & Phelan, 2001). Institutionalized discrimination based on race has been associated with lower health status (Gee, 2002). These policies can include same-sex marriage laws, hate crime legislation and employment discrimination based on sexual orientation. Research has found that these three state-level policies that do not protect sexual minority individuals are associated with increased psychiatric morbidity for LGB individuals (Mark L.

Hatzenbuehler et al., 2009; M. L. Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010; Rostosky, Riggle, Horne, & Miller, 2009). Additional policies related to sexual orientation include hospital visitation rights at hospitals, same-sex couples' adoption rights, discrimination in housing, as well as discrimination in school. There are more of these types of policies in the Northeast and West compared to the Midwest and South ("Gay rights in the US, state by state," 2015). A study in North Carolina found lower health status for the state's LGB population and the authors attributed this partly to the anti-LGB policies in the state and more generally the South (Matthews & Lee, 2014). These studies and policies mean that LGB individuals in states and regions with policies that do not protect them may be resulting in poorer health outcomes for this population. States without these policies may also be creating an environment of increased perceived homophobia by LGB individuals compared to states with policies that protect them. Whether this is affecting patient satisfaction and leading to these poor health outcomes is unknown. This study sets out to answer whether region of residence will affect the patient satisfaction of LGB individuals.

Summary

The history of LGB individuals' experiences in the United States illuminates why they face disparities and differences in quality of care today. Sexual minorities have faced consistent stigma and discrimination in the past and laws and policies have contributed to this. The AIDS epidemic led to many deaths and negative images of the community to the public, while also leading to positive changes through increased attention on LGB health research and health care. Disparities that have come out of this history persist,

especially among preventative service use, obesity and risky health behaviors for lesbians and bisexual women and high rates of HIV/AIDS and mental health issues for gay and bisexual men. Little is known about the patient satisfaction of this population and studies suggest that this is an important predictor of health outcomes, metric of health care quality, and patient experience. Studies have shown that LGB individuals rate their interactions with health care providers lower than heterosexuals, face discrimination in the health care setting and do not trust their doctors. This study therefore proposes to study the patient satisfaction of LGB individuals compared to heterosexuals, among a nationally representative sample. Based on geographic differences in sexual orientation-related policies and prejudices, this study also will look at differences in satisfaction in the South and Midwest compared to the Northeast and West.

Chapter 3 Methods

Introduction

A quasi-experimental design was utilized in this study. To test hypotheses in this study, a conceptual framework was developed drawing from the Andersen Model of Health Care Utilization (Andersen, 1995). The focal relationship is the relationship between sexual orientation and patient satisfaction. Predisposing, enabling and need characteristics will be included in the model. Geographic region was also tested as a moderator in the model. 2013-2014 National Health Interview Survey data was analyzed using a multivariate ordered logistic regression (*Survey Description, National Health Interview Survey 2013; Survey Description, National Health Interview Survey 2014*).

Conceptual Framework

A conceptual framework was developed to inform an analysis of the association between the independent variable, sexual orientation and the dependent variable, patient satisfaction. This study draws from the Andersen Model of Health Care Utilization to develop a conceptual framework that guided the derivation of hypotheses and analytic strategy. Based on this framework, the use of health services is a function of an individual's *predisposing, enabling, and need* characteristics. *Predisposing* characteristics can include age, sex, race and ethnicity. *Enabling* characteristics are the socioeconomic factors that can help or hinder an individual's ability to access services, such as education, income and health insurance (Andersen, 1995). Finally, *need* for health care also affects health service use, often measured by health status. This framework helped to shape regression models, illustrating the hypothesized relationships between key variables and confounders (predisposing, enabling and need characteristics).

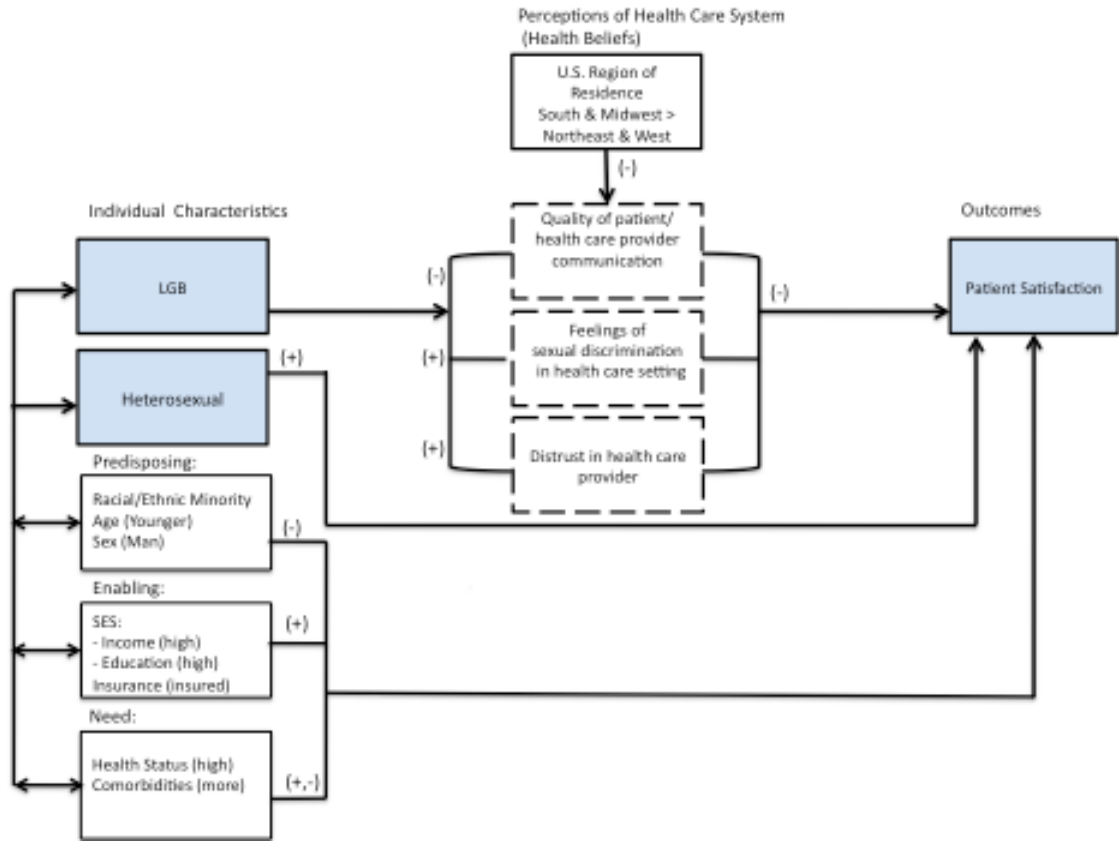


Figure 1. Conceptual Framework: The association between sexual orientation and patient satisfaction and how geographic region moderates the relationship.

This framework illustrates the relationship between the focal relationship, sexual orientation and patient satisfaction. The model also includes the variables being controlled for in the model, the mechanisms and the moderator. The signs indicate the direction of the relationship between each variable and the outcome variable, patient satisfaction. Additionally, the framework illustrates how mechanisms and a moderator will fit into models to be used in the data analysis. Mechanisms are outlined in a dotted line, as they are unmeasured in this analysis.

Focal Relationship

As highlighted in Figure 1, the focal relationship, or the relationship between the primary independent and dependent variables in this study, is how sexual orientation, heterosexuality or homosexuality/bisexuality, is associated with patient satisfaction. Sexual orientation “refers to the sex of those to whom one is sexually and romantically attracted” (*Definition of Terms: Sex, Gender, Gender Identity, Sexual Orientation* 2011). The dependent variable of the framework, patient satisfaction, can be evaluated by patient characteristics, structure of care (i.e. the organizational structure and type of management), and processes of care (i.e. clinical quality and the effective communication between patient and provider) (Nápoles et al., 2009). Overall, patient satisfaction is defined as someone’s “personal evaluation of health care services and providers (Ware, 1983).” It can also measure the amount of happiness an individual gains from their health care (Robert Wood Johnson Foundation, 2012).

This study hypothesizes that LGB individuals will have lower levels of patient satisfaction compared to heterosexual individuals. This relationship is based on studies that have found same-sex couples have lower levels of patient satisfaction compared to heterosexual couples, as well as studies finding lower levels of physician/patient communication quality and trust among LGB individuals (Buchmueller & Carpenter, 2010; Clift & Kirby, 2012).

Mechanisms

Quality of communication between the patient and provider, feelings of sexual discrimination in the health care setting and distrust in the provider are three mechanisms

in this model (Chang et al., 2013; Harrison & Silenzio, 1996; Klitzman & Greenberg, 2002; Nápoles et al., 2009; Rounds et al., 2013). Previous research has found that LGB patients may be reluctant to openly communicate with physicians (Klitzman & Greenberg, 2002), may be worried about discrimination when accessing health care and have lower levels of trust in health care providers (Rounds et al., 2013). These three mechanisms may lead to a lower level of patient satisfaction for LGB patients compared to heterosexual patients.

Moderator

While the country's attitudes toward sexual minorities continue to evolve, there is still large variation across the United States regarding levels of homophobia (Casazza, 2015; G. M. Herek, 2002; Snively, 2004). This study was unable to capture the city or state level data, but it did include a measure of region (Northeast, South, Midwest, West). In the initial analysis, the region included as a control in the regression. In a secondary analysis, this variable was tested as a moderator on the focal relationship. Based on differences in regions by political affiliation, attitudes toward gay rights, and policies related to sexual orientation ("Gay rights in the US, state by state," 2015; McCarthy, 2014; Pew Research Center, 2015) it was hypothesized that the association between LGB status and lower patient satisfaction would be exacerbated for respondents who live the Midwest or South.

Description of Confounders and Relationship to the Focal Relationship

This analysis included individual level predisposing, enabling, and need characteristics as the primary confounders.

Predisposing Characteristics

Age is a biological construct that encompasses how much time has passed since an individual was born. Prior studies have found that those that are older report better quality of care and experiences with their health care providers (Bottone et al., 2014; Campbell, Ramsay, & Green, 2001; Heje, Vedsted, Sokolowski, & Olesen, 2008), although the relationship may be nonlinear (Kaplan, Gandek, Greenfield, Rogers, & Ware, 1995).

Race is a socio-political construct that can be defined as “phenotypic genetic expression.” Race can predict health risks of different groups and inequalities that result from environmental and social factors (Ford & Kelly, 2005). Ethnicity is a socially constructed category often associated with an individual’s culture or nationality (“An Anthropological Perspective of Ethnicity and Race,”). Numerous studies have shown that racial and ethnic minorities report lower levels of satisfaction (Nápoles et al., 2009). More specifically, minorities experience a poorer communication quality, as well as lower levels of trusts in their physicians when compared to whites (Ashton et al., 2003; Boulware, Cooper, Ratner, LaVeist, & Powe, 2003; Doescher, Saver, Franks, & Fiscella, 2000).

Sex refers to the differentiation between biological men and women (*Definition of Terms: Sex, Gender, Gender Identity, Sexual Orientation* 2011). Previous studies have found that women have better quality of communication than men with providers, as they

tend to engage more with their physicians during visits (Cooper-Patrick, Gallo, Gonzales, & et al., 1999; Kaplan et al., 1995). Women were therefore hypothesized to have higher patient satisfaction than men.

Enabling Characteristics

Socioeconomic status (SES) can be defined as the social position of an individual, relating to power and prestige and is measured by income and education level. SES can also be related to an individual's access to resources ("Socioeconomic Status,"). Studies have found that individuals of a higher socioeconomic status have better perceptions of patient/physician interactions. Specifically, physicians may provide additional details, justifications of decisions and emotional support to patients with a higher SES compared with patients with a lower SES. All of these factors can contribute to higher patient satisfaction (Epstein, Taylor, & Seage Iii, 1985; Kaplan et al., 1995; Shi et al., 2013; Verlinde, De Laender, De Maesschalck, Deveugele, & Willems, 2012). Previous research has also shown that physicians/patient communication quality may be lower for the uninsured, lowering their level of satisfaction (Alexander, Casalino, & Meltzer, 2003).

Need Characteristics

Health status can be defined as "the level of health of the individual, group, or population as subjectively assessed by the individual or by more objective measures" ("Health Status," 1979). The number of comorbidities can also affect need. Studies are inconclusive about how health status affects patient satisfaction. Some studies have found higher satisfaction for healthier individuals, while others report higher satisfaction for those with chronic diseases, and some have found no relationship between health status and patient satisfaction (Cohen, 1996).

Testable Hypotheses

H1. There is a negative association between Lesbian/Gay/Bi-sexual (LGB) status and patient satisfaction with health care.

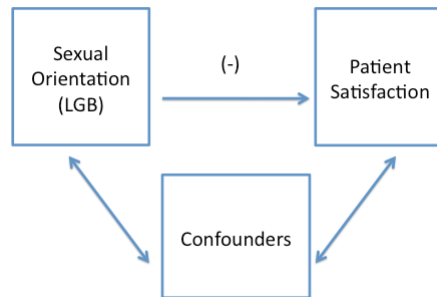


Figure 2: Hypothesized relationship between LGB status and patient satisfaction

H2: Living in the Midwest or South will strengthen the negative association between LGB status and patient satisfaction with health care.

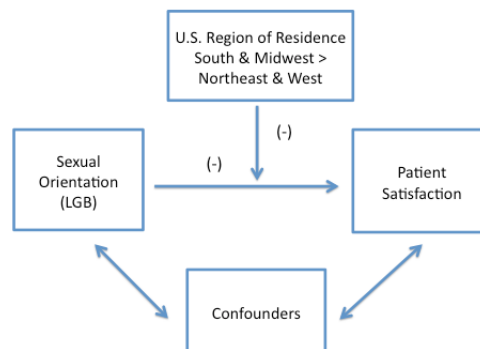


Figure 3: Hypothesized relationship of how region moderates the association between LGB status and patient satisfaction

Dataset

This analysis used the 2013 and 2014 National Health Interview Survey (NHIS) datasets (*Survey Description, National Health Interview Survey 2013*; *Survey Description, National Health Interview Survey 2014*). NHIS is an annual cross-sectional survey representative of the non-institutionalized U.S. population residing in all fifty states and the District of Columbia. The sample does not include individuals that are imprisoned, in active duty in the armed forces, in a long-term care facility, or citizens living outside of the United States.

The NHIS is conducted using a multistage probability design. Minority populations including Hispanic, Black and Asian individuals are oversampled. Trained interviewers from the U.S. Bureau of the Census collect data in person, and enter responses into a computer. The total sample in the 2013 NHIS dataset includes 34,557 individuals aged 18 years and older, representing a sample adult response rate of 61.2%. The total sample in the 2014 NHIS dataset includes 36,697 individuals aged 18 and older, representing 58.9% sample adult response rate.

The NHIS includes a wide range of questions about basic demographic characteristics, physical and mental health status, health behaviors, health care utilization, and respondents' satisfaction with health care. The 2013 survey was the first to include a question about sexual orientation. The decision to use two years of data was due to the limited proportion of the sample who identified as LGB in each year's datasets.

Construct Measurement

Sexual Orientation

Sexual orientation was measured by a question that asked: Which of the following best represents how you think of yourself? A dichotomous variable of LGB or straight was created for those who responded lesbian/gay/bisexual or straight. Transgender individuals are not included in this analysis due to the very small number of individuals who identified as transgender in this dataset.

Patient Satisfaction

Respondents were asked how satisfied they were with their health care in the last 12 months with the following options: 1) very satisfied 2) somewhat satisfied 3) somewhat dissatisfied 4) very dissatisfied. By combining the dissatisfied answers, patient satisfaction was measured as an ordered categorical variable in the following way: 1) very satisfied and 2) somewhat satisfied 3) dissatisfied. Research looking at the breakdown of patient satisfaction survey questions have shown that there is a significant difference between very satisfied and somewhat satisfied (Collins & O’Cathain, 2003). The overall distribution of responses was weighted toward very satisfied (64.24%) or somewhat satisfied (28.71%), meaning a high percentage chose those two responses. Therefore, to analyze the data, the two dissatisfied responses were combined.

Geographic Region

Respondents were coded according to what region they live in the United States. For the secondary analysis examining the region as a moderator, a dichotomous variable was defined in the following way: 1) South and Midwest 2) Northeast and West

Predisposing

Age was measured as a continuous variable (18-64) using self-reported age. Sex was measured using a dichotomous variable of male versus female. Race/ethnicity was assessed using a categorical variable with the following four categories: 1) Hispanic 2) non-Hispanic white 3) non-Hispanic black 4) non-Hispanic other.

Enabling Characteristics

Household income was grouped into the following categories: 1) \$0 -\$49,999 2) \$50,000 -\$99,999 3) \$100,000 and over. While the datasets provide a more detailed breakdown of incomes for some of the sample, other responses are restricted to these broader categories. To limit the amount of sample lost in the analysis, these broader categories were used in the analysis. To measure education, respondents were asked about their highest level of education completed. The following categories were created for this variable based on the respondents' answers: 1) less than high school 2) high school graduate 3) some college 4) college degree 5) graduate degree.

A categorical variable of either uninsured, public or private insurance will be created to measure having health insurance. Since the sample does not include individuals 65 years or older, public insurance will not be broken down further in to types of public insurance. There was a limited amount of individuals with other public insurance besides Medicaid.

Need Characteristics

To measure health status, a self-reported health status question asking about respondent's health was used. A categorical variable was created using the following response options: 1) Excellent 2) Very good 3) Good 4) Fair 5) Poor. Respondents were

also asked if a doctor had ever told them that they had various health conditions during their lifetime. These comorbidities were defined by creating dichotomous (yes or no)

variables for each answer to these questions around the following comorbidities:

- Hypertension
- Coronary Heart Disease
- Angina Pectoris
- Heart Attack
- Heart Condition/Disease
- Stroke
- Emphysema
- COPD
- Asthma
- Ulcer
- Cancer
- Pre-diabetes
- Seizure disorder/epilepsy

Table 1: Construct Measurement

Construct	Measure	Access Variable?	Hypothesized Relationship with Dependent Variable
Patient Satisfaction	Ordered categorical variable: <ul style="list-style-type: none"> • Very satisfied • Somewhat satisfied • Dissatisfied 	No	Patient satisfaction is the dependent variable.
Sexual Orientation	Dichotomous variable: <ul style="list-style-type: none"> • Lesbian/Gay/Bisexual • Heterosexual 	No	Being LGB is negatively associated with patient satisfaction.
Geographic Region	Dichotomous variable: <ul style="list-style-type: none"> • South and Midwest • Northeast and West 	No - Moderator	Living in the South or Midwest will strengthen the negative association between LGB status and patient satisfaction.
Age	Continuous variable: <ul style="list-style-type: none"> • Years of age (18-64) 	Yes - Predisposing	Being older is positively associated with patient satisfaction.
Sex	Dichotomous variable: <ul style="list-style-type: none"> • Male • Female 	Yes - Predisposing	Being female is positively associated with patient

satisfaction.

Race/Ethnicity	Categorical variable: <ul style="list-style-type: none"> • Hispanic • Non-Hispanic white • Non-Hispanic black • Non-Hispanic other 	Yes - Predisposing	Being non-white is negatively associated with patient satisfaction.
Income	Categorical variable using following income level values: <ul style="list-style-type: none"> • \$0 - \$49,999 • \$50,000 - \$99,999 • \$100,000 and over 	Yes - Enabling	A higher income is positively associated with patient satisfaction.
Education	Categorical variable: <ul style="list-style-type: none"> • Less than high school • High school graduate • Some college • College degree • Graduate degree 	Yes - Enabling	A higher education level is positively associated with patient satisfaction.
Health Insurance	Categorical variable: <ul style="list-style-type: none"> • Uninsured • Private • Public 	Yes - Enabling	Having health insurance is positively associated with patient satisfaction.
Health Status	Categorical Variable: <ul style="list-style-type: none"> • Excellent • Very Good • Good • Fair • Poor 	Yes - Need	The relationship between health and patient satisfaction is inconclusive.

Dichotomous variables for each of the following condition based on answering “yes” or “no” to being diagnosed with each comorbidity:

- Hypertension
- Coronary Heart Disease
- Angina Pectoris
- Heart Attack
- Heart Condition/Disease
- Stroke
- Emphysema

- COPD
- Asthma
- Ulcer
- Cancer
- Pre-diabetes
- Seizure disorder/epilepsy

Quality of communication between patient and doctor

Unmeasured

No - Mechanism

Quality of communication will mediate relationship between LGB status and patient satisfaction. LGB individuals will have a lower quality of communication and therefore lower patient satisfaction.

Feelings of sexual discrimination in health care setting

Unmeasured

No - Mechanism

Feelings of discrimination will mediate relationship between LGB status and patient satisfaction. LGB individuals will have more feelings of discrimination and therefore lower patient satisfaction.

Distrust in doctor

Unmeasured

No – Mechanism

Distrust in the doctor will mediate relationship between LGB status and patient satisfaction. LGB individuals will have a lower amount of trust in doctor and therefore lower

patient
satisfaction.

Analytic Strategy

The analytic sample was restricted to those who have had health care in the past 12 months and were able to report their patient satisfaction in this timeframe. The analytic sample was also limited to those aged 18-64. The dataset does not include those younger than 18. Patients 65 or older were excluded from the sample, as they are eligible for Medicare and may have different health care utilization behaviors and levels of satisfaction compared to those not eligible or enrolled in Medicare (National Academy of Social Insurance, 1999). Patient satisfaction was analyzed using a categorical variable of very satisfied, somewhat satisfied, and dissatisfied. A sensitivity analysis was also conducted coding patient satisfaction as a dichotomous variable comparing very satisfied to all other responses. The relationship between the dependent and independent variables were tested using a multivariate ordered logistic model. The model included all of the covariates, including the predisposing, enabling and need characteristics and measures of effect were expressed in marginal effects. Sample weights provided in the NHIS data files were also utilized to provide nationally representative estimates. Weights were adjusted to reflect two years of data. All analyses were done using Stata/SE 14.0.

To test whether geographic region moderates the relationship between LGB status and patient satisfaction, an additional model that included an interaction term between LGB status and geographic region (South and Midwest vs. Northeast and West) was used. This model clarified any possible moderating effect that the geographic region may

have on the relationship between LGB status and patient satisfaction. Additional sub-analyses by sex were also done using ordered logistic multivariate models.

Chapter 4 Results

Introduction

The size of analytic sample was 44,972 individuals, with 3% of the sample LGB and 97% heterosexual. The regression sample size was 41,673 individuals with a similar LGB percentage. There is not a national consensus on the LGB percentage of the general U.S. population, but this estimate is close to other approximations (IOM, 2011) The groups had overall similar characteristics, with a few notable differences such as a higher educational achievement and a higher percentage non-Hispanic white in the LGB group. The models found no statistically significant difference in patient satisfaction for LGB individuals compared to heterosexuals and no regional effects on patient satisfaction. Several covariates were associated with patient satisfaction in the overall analysis and in the separate analyses examining males and females.

Descriptive Statistics

The overall analytic sample size was made up of 44,972 adults aged 18-64 who had responses for sexual orientation and patient satisfaction. As shown in Table 2, the regression sample size was 41,673 due to missing covariate responses. The majority of the sample, 97%, is comprised of heterosexual individuals with about 3% of the sample categorized as lesbian, gay or bisexual. A typical respondent on average was 41 years old and was well educated, with about 78% of the sample having more than a high school diploma. The characteristics of the heterosexual and LGB groups were similar overall.

Notable differences include that the LGB sample was younger, with an average age of 38 compared to 41.3 for heterosexuals. LGB individuals had higher educational attainment, with 22.2% with a graduate degree compared to 17.9% for the heterosexual group. Interestingly, despite this higher educational achievement, the LGB group had an overall lower income with 46.1% in the lowest income group (\$0-49,999) compared to 39.7% for heterosexuals. Insurance coverage was similar for both groups, as well as the distribution by region.

Table 2: Characteristics of Regression Sample, NHIS 2013-2014

	Heterosexual (N= 40,439)	Lesbian/Gay/Bisexual (N=1,234)	Total (N=41,673)	P-Value
N Sample	143,574,326	3,996,560	147,570,885	
Age (Mean (SD))	41.3 (13.5)	38.0 (13.3)	41.2	.000
Sex (%)				.693
Female	53.6	54.4	53.7	
Highest Education Level in Family (%)				.020
Less than high school	5.4	4.1	5.3	
High school graduate	17.3	14.1	17.2	
Some college	33.9	33.9	33.9	
College degree	25.6	25.8	25.6	
Graduate degree	17.9	22.2	18.0	
Ethnicity (%)				.010
Hispanic	15.1	13.2	15.0	
Non-Hispanic White	65.8	69.9	65.9	
Non-Hispanic Black	12.6	13.1	12.6	
Non-Hispanic Asian	5.6	2.7	5.6	
Non-Hispanic Other	0.9	1.1	0.9	
Income (%)				.010
\$0 - \$49,999	39.7	46.1	39.9	
\$50,000 - \$99,999	31.9	29.8	31.9	
\$100,000 and over	28.4	24.1	28.3	
Health Insurance (%)				.760
Private Insurance	68.8	68.0	68.8	
Public Insurance	19.3	19.1	19.3	
Uninsured	11.9	12.8	12.0	
Region (%)				.064
Northeast	17.6	18.8	17.6	
Midwest	23.1	18.9	23.0	
South	36.8	36.6	36.8	
West	22.5	25.7	22.6	

Self-Reported Health				.241
Excellent	31.1	29.5	31.1	
Very Good	33.0	31.3	32.9	
Good	24.4	25.7	24.4	
Fair	8.8	11.0	8.9	
Poor	2.7	2.4	2.7	
Comorbidities (% Diagnosed)				
Hypertension	25.2	22.7	25.1	.151
Coronary Heart Disease	2.5	2.3	2.4	.970
Angina Pectoris	1.2	1.5	1.2	.560
Heart Attack	2.0	2.6	2.0	.230
Heart Condition/Disease	5.6	7.4	5.6	.048
Stroke	1.6	2.1	1.6	.283
Emphysema	0.9	0.8	0.9	.524
COPD	2.1	1.7	2.1	.370
Asthma	13.4	18.2	13.5	.000
Ulcer	6.0	8.4	6.1	.017
Cancer	5.7	7.5	5.7	.028
Diabetes	7.4	5.9	7.4	.433
Seizure disorder/epilepsy	1.7	2.2	1.7	.450

The majority of the sample was white with an overall 65.8%, with LGB having a slightly higher percentage of 69.9% compared to 65.8% for heterosexuals. Additionally, the majority of the sample (88.4%) was in good or better health. However, the LGB group had higher rates of certain comorbidities. Some of these comorbidities were particularly prevalent in the sample, with 25.1% diagnosed with hypertension and 13.5% diagnosed with asthma. Asthma rates were higher among LGB individuals with 18.2% compared to 13.4% among heterosexuals. Cancer and heart condition rates were higher for LGB individuals. Also interesting is the high percentage of ulcer diagnosis with 6.1% overall and 8.4% among LGB individuals.

Main Analysis

Table 3 presents results of the multivariate analysis analyzing the association between LGB status and patient satisfaction, as well as the relationship between the covariates and patient satisfaction. Marginal effects were calculated for each outcome

(dissatisfied, somewhat satisfied and very satisfied) of the dependent variable, patient satisfaction. Since the majority of the responses were in the very satisfied category, it is especially worth noticing the difference between this category and the other categories in these results.

Table 3: Marginal effects of weighted ordered logistic regression for association between sexual orientation and patient satisfaction

	Dissatisfied	Somewhat Satisfied	Very Satisfied
LGB	0.0045 [-0.0053,0.0144]	0.0141 [-0.0165,0.0448]	-0.0187 [-0.0592,0.0218]
Sex (Female)	-0.0005 [-0.0034,0.0024]	-0.0015 [-0.0106,0.0076]	0.0020 [-0.0101,0.0140]
Age	-0.0003 ^{***} [-0.0004,-0.0001]	-0.0008 ^{***} [-0.0012,-0.0003]	0.0010 ^{***} [0.0005,0.0016]
Education			
Less than High School	Ref	Ref	Ref
High School Graduate	0.0021 [-0.0040,0.0083]	0.0067 [-0.0125,0.0258]	-0.0088 [-0.0341,0.0166]
Some College	0.0049 [-0.0013,0.0111]	0.0153 [-0.0039,0.0346]	-0.0203 [-0.0457,0.0052]
College Degree	0.0034 [-0.0032,0.0099]	0.0105 [-0.0100,0.0309]	-0.0138 [-0.0408,0.0132]
Graduate Degree	-0.0005 [-0.0080,0.00701]	-0.0015 [-0.0248,0.0218]	0.0020 [-0.0288,0.0327]
Race/Ethnicity			
Hispanic	Ref [*]	Ref [*]	Ref [*]
Non-Hispanic White	-0.0060 [*] [-0.0108,-0.0012]	-0.0187 [*] [-0.0338,-0.0037]	0.0247 [*] [0.0050,0.0440]
Non-Hispanic Black	-0.0014 [-0.0070,0.0042]	-0.0042 [-0.0214,0.0130]	0.0055 [-0.0172,0.0283]
Non-Hispanic Asian	0.0088 [0.00208,0.0154]	0.0272 [0.00657,0.0479]	-0.0360 [-0.0633,-0.0087]
Non-Hispanic Other	-0.0046 [-0.0187,0.0095]	-0.0142 [-0.0581,0.0297]	0.0187 [-0.0392,0.0767]
Income			
\$0-49,999	Ref	Ref	Ref
\$50,000 - \$99,999	-0.0032 [-0.0068,0.0005]	-0.0099 [-0.0213,0.0014]	0.0131 [-0.0018,0.0281]
\$100,000 and over	-0.0219 ^{***} [-0.0269,-0.0168]	-0.0680 ^{***} [-0.0832,-0.0527]	0.0898 ^{***} [0.0696,0.1100]
Insurance			
Uninsured	Ref	Ref	Ref
Private Insurance	-0.0471 ^{***} [-0.0531,-0.0412]	-0.1470 ^{***} [-0.1630,-0.1300]	0.1940 ^{***} [0.1720,0.2160]
Public Insurance	-0.04580 ^{***} [-0.0519,-0.0398]	-0.1430 ^{***} [-0.1600,-0.1250]	0.1880 ^{***} [0.1650,0.2120]
Region			
Northeast	Ref	Ref	Ref
Midwest	-0.0076 ^{**} [-0.0128,-0.0023]	-0.0236 ^{**} [-0.0398,-0.0073]	0.0311 ^{**} [0.0096,0.0527]
South	-0.0051 [*] [-0.0101,-0.0001]	-0.0158 [*] [-0.0314,-0.0002]	0.0208 [*] [0.0002,0.0415]
West	0.0081 ^{**} [0.0026,0.0135]	0.0251 ^{**} [0.0083,0.0420]	-0.0332 ^{**} [-0.0555,-0.0110]
Health Status	Dissatisfied	Somewhat Satisfied	Very Satisfied

Very Good	0.0177*** [0.0138,0.0216]	0.0551*** [0.0429,0.0672]	-0.0728*** [-0.0887,-0.0568]
Good	0.0383*** [0.0340,0.0427]	0.1190*** [0.105,0.133]	-0.1580*** [-0.176,-0.140]
Fair	0.0560*** [0.0496,0.0624]	0.1740*** [0.155,0.193]	-0.2300*** [-0.255,-0.205]
Poor	0.0672*** [0.0572,0.0772]	0.2090*** [0.177,0.240]	-0.2760*** [-0.317,-0.235]
Comorbidities			
Hypertension	0.0047* [0.000719,0.00873]	0.0147* [0.00226,0.0271]	-0.0194* [-0.0358,-0.00298]
Angina pectoris	-0.0018 [-0.0168,0.0131]	-0.0056 [-0.0521,0.0409]	0.0074 [-0.0540,0.0688]
Heart attack	0.0088 [-0.00414,0.0217]	0.0273 [-0.0131,0.0677]	-0.0361 [-0.0894,0.017]
Heart condition/disease	-0.0036 [-0.0103,0.00304]	-0.0113 [-0.0319,0.00944]	0.0149 [-0.0125,0.0422]
Stroke	0.0037 [-0.00827,0.015]	0.0116 [-0.0257,0.0488]	-0.0153 [-0.0646,0.03]
Emphysema	0.0004 [-0.0149,0.0157]	0.0011 [-0.0465,0.0487]	-0.0015 [-0.0644,0.0614]
COPD	-0.0170** [-0.0279,-0.00617]	-0.0530** [-0.0866,-0.0193]	0.0700** [0.0255,0.114]
Asthma	-0.0015 [-0.0059,0.00291]	-0.0047 [-0.0184,0.0090]	0.0062 [-0.0119,0.0243]
Ulcer	-0.0125*** [-0.0190,-0.0060]	-0.0388*** [-0.0590,-0.018]	0.0513*** [0.0246,0.0780]
Cancer	0.0103** [0.0031,0.0174]	0.0319** [0.0097,0.0541]	-0.0422** [-0.0715,-0.0129]
Diabetes	0.0092*** [0.00314,0.0174]	0.0288*** [0.0097,0.0541]	-0.0381*** [-0.0715,-0.0129]
Observations	63414	63414	63414

p-values in parentheses
* *p* < 0.05, ** *p* < 0.01, *** *p* < 0.001

In this analysis, there was not a statistically significant difference between the patient satisfaction of the LGB group compared to the control group, heterosexuals. While the results were not statistically significant, LGB individuals were 1.9 percentage points less likely to report being very satisfied. On the other hand, they were .45 percentage points more likely to report being dissatisfied and 1.4 percentage points more likely to report being somewhat satisfied. In the sensitivity analysis of coding patient satisfaction as a dichotomous variable of either very satisfied or all other responses, there was also not a statistically significant difference between the two groups.

Several predisposing characteristics were statistically significant in relation to patient satisfaction. Each year of age increased the chance of being very satisfied by .10

percentage points and decreased the likelihood of being somewhat satisfied by .08 percentage points and being dissatisfied by .03 percentage points. Compared to the Hispanic individuals, non-Hispanic whites were 2.5 percentage points more likely to report being very satisfied. This group was 1.9 percentage points less likely to be somewhat satisfied and .60 percentage points less likely to be dissatisfied. Being non-Hispanic Asian was negatively associated with patient satisfaction with this group three percentage points less likely to report being very satisfied. Alternatively, non-Hispanic Asians were 3.6 percentage points less likely to be very satisfied. This group was 2.7 percentage points more likely to be somewhat satisfied and 0.9 percentage points more likely to be dissatisfied.

The enabling characteristics, such as socioeconomic status and insurance also proved to be associated with self-reported satisfaction. Compared to the lowest income group, an income of less than \$50,000, the highest income group of over \$100,000 was 9.0 percentage points more likely to report being very satisfied. This high income group was 6.8 percentage points less likely to be somewhat satisfied and 2.2 percentage points less likely to be dissatisfied. Compared to the uninsured, individuals who were insured (public or private) were more likely to be very satisfied and less likely to be somewhat or dissatisfied. Compared to those living in the Northeast, those living in Midwest were more likely to very satisfied with their health care by 3.1 percentage points. Those in the Midwest were less likely to be somewhat satisfied by 2.4 percentage points and less likely to be dissatisfied by 0.8 percentage points. Those living in the south were 2.1 percentage points more likely to be very satisfied, 1.6 percentage points less likely to be somewhat satisfied, and 0.5 percentage points less likely to be dissatisfied. Alternatively,

those living in the West were less likely to be very satisfied by 3.3 percentage points. This group was less likely to be somewhat satisfied by 2.5 percentage points and dissatisfied by 0.8 percentage points.

Health status was strongly associated with patient satisfaction, with the four categories (reference category was excellent health) all being statistically significant in relation to patient satisfaction. Each of the lower health statuses had lower likelihoods of reporting being very satisfied and a higher likelihood of being somewhat or dissatisfied. As health decreases, individuals were more likely to be dissatisfied and somewhat satisfied. A few of the comorbidities were related to patient satisfaction. Those diagnosed with hypertension, cancer and diabetes were less likely to report being very satisfied and more likely to report being very or somewhat satisfied, whereas having an ulcer and COPD had the reverse association.

Sub-Analyses

Geographic Moderator

To test the hypothesis that living in the Midwest and South would lower patient satisfaction for LGB individuals compared to LGB individuals living in the Northeast and West, an interaction term between LGB status and living in the Midwest and South was tested in a multivariate analysis. In this analysis, the geographic region was taken out of the regression as a covariate. When this South/Midwest moderator was included in the model, there was not a statistically significant effect of the moderator on patient satisfaction for LGB individuals (data not shown). The geographic region therefore did not moderate this relationship as hypothesized. This means that living in the South and

Midwest did not affect the association between LGB status and patient satisfaction. In sensitivity analysis testing South vs. all other regions, there was also not a statistically significant effect on LGB individuals' patient satisfaction.

Analyses by Sex

Tables 4 and 5 present separate analyses by gender, looking at males in Table 3 and females in Table 4. In these sub-analyses, there were interesting findings worth noting when comparing results of the entire sample. In the analyses examining just males, age was no longer statistically significant in relation to patient satisfaction. Compared to the lowest level of education, individuals with a high school diploma or some college were less likely to be very satisfied. Other differences between the analyses on the whole sample include having a heart attack being negatively associated being very satisfied and having an ulcer no longer being statistically significant. For females, unlike the entire sample, age and being non-Hispanic white did not affect the likelihood of reporting any of the patient satisfaction outcomes for females. Additionally, living in the South and Midwest no longer was no longer associated with patient satisfaction.

Table 4: Marginal effects of weighted ordered logistic regression for association between sexual orientation and patient satisfaction among males

	Dissatisfied	Somewhat Satisfied	Very Satisfied
Gay/Bisexual	-0.0016	-0.0053	0.0068
	[-0.0177,0.0146]	[-0.0592,0.0487]	[-0.0633,0.0770]
Age	-0.0001	-0.0003	0.0004
	[-0.0003,0.0001]	[-0.0010,0.0004]	[-0.0005,0.0013]
Education			
Less than high school	Ref	Ref	Ref
High School Graduate	0.0077	0.0256	-0.0333
	[-0.0022,0.0176]	[-0.0074,0.0587]	[-0.0762,0.0096]
Some College	0.0100*	0.0335*	-0.0435*
	[0.00031,0.0197]	[0.0010,0.0659]	[-0.0856,-0.0013]
College Degree	0.0047	0.0157	-0.0204
	[-0.0059,0.0153]	[-0.0196,0.0510]	[-0.0663,0.0254]
Graduate Degree	-0.0010	-0.0033	0.0043
	[-0.0124,0.0104]	[-0.0413,0.0347]	[-0.0451,0.0536]
Race/Ethnicity			
Hispanic	Ref	Ref	Ref
Non-Hispanic White	-0.0081*	-0.0270*	0.0350*

	[-0.0153,-0.0008]	[-0.0511,-0.0028]	[0.0037,0.0664]
Non-Hispanic Black	-0.0023	-0.0078	0.0101
	[-0.0104,0.0058]	[-0.0347,0.0192]	[-0.0250,0.0452]
Non-Hispanic Asian	0.0079	0.0263	-0.0342
	[-0.0025,0.0183]	[-0.0084,0.0610]	[-0.0793,0.0109]
Non-Hispanic Other	-0.0123	-0.0410	0.0533
	[-0.0335,0.0090]	[-0.1120,0.0296]	[-0.0385,0.1450]
Income			
\$0-49,999	Ref	Ref	Ref
\$50,000 - \$99,999	-0.0016	-0.0052	0.0068
	[-0.0073,0.0042]	[-0.0246,0.0142]	[-0.0184,0.0319]
\$100,000 and over	-0.0210***	-0.0701***	0.0911***
	[-0.0281,-0.0139]	[-0.0939,-0.0464]	[0.0604,0.1220]
Insurance			
Uninsured	Ref	Ref	Ref
Private Insurance	-0.0431***	-0.1440***	0.1870***
	[-0.0516,-0.0345]	[-0.1700,-0.1180]	[0.1530,0.2210]
Public Insurance	-0.0444***	-0.1480***	0.1930***
	[-0.0534,-0.0354]	[-0.1780,-0.1180]	[0.1540,0.2310]
Region			
Northeast	Ref	Ref	Ref
Midwest	-0.0083*	-0.0277*	0.0360*
	[-0.0148,-0.0018]	[-0.0496,-0.0058]	[0.0076,0.0643]
South	-0.0069*	-0.0231*	0.0300*
	[-0.0127,-0.0012]	[-0.0424,-0.0038]	[0.0050,0.0550]
West	0.0069*	0.0229*	-0.0297*
	[0.0002,0.0135]	[0.0010,0.0448]	[-0.0582,-0.0012]
Health Status			
Excellent	Ref	Ref	Ref
Very Good	0.0163***	0.0543***	-0.0706***
	[0.0105,0.0220]	[0.0351,0.0735]	[-0.0954,-0.0457]
Good	0.0349***	0.1170***	-0.1520***
	[0.0287,0.0411]	[0.0953,0.1380]	[-0.1790,-0.1250]
Fair	0.0512***	0.1710***	-0.2220***
	[0.0424,0.0600]	[0.1420,0.2000]	[-0.2590,-0.1850]
Poor	0.0580***	0.1940***	-0.2520***
	[0.04550,0.0705]	[0.1530,0.2350]	[-0.3040,-0.1990]
Comorbidities			
Hypertension	0.0035	0.0118	-0.0153
	[-0.0020,0.0090]	[-0.0066,0.0301]	[-0.0392,0.0086]
Angina pectoris	-0.0089	-0.0296	0.0385
	[-0.0275,0.0100]	[-0.0919,0.0327]	[-0.0425,0.1190]
Heart attack	0.0197**	0.0656**	-0.0853**
	[0.0056,0.0337]	[0.0182,0.1130]	[-0.1470,-0.0239]
Heart condition/disease	-0.0084	-0.0280	0.0364
	[-0.0180,0.0012]	[-0.0602,0.0041]	[-0.0053,0.0782]
Stroke	-0.0009	-0.0030	0.0039
	[-0.0160,0.0143]	[-0.0536,0.0477]	[-0.0619,0.0696]
Emphysema	0.0029	0.0095	-0.0124
	[-0.0187,0.0245]	[-0.0625,0.0816]	[-0.1060,0.0812]
COPD	-0.0193*	-0.0644*	0.0837*
	[-0.0349,-0.0037]	[-0.1160,-0.0126]	[0.0163,0.1510]
Asthma	-0.0012	-0.0040	0.0052
	[-0.0080,0.0056]	[-0.0269,0.0188]	[-0.0244,0.0349]
Ulcer	-0.0066	-0.0221	0.0288
	[-0.0159,0.0027]	[-0.0530,0.0087]	[-0.0114,0.0689]
Cancer	0.0105	0.0351	-0.0456
	[-0.0008,0.0218]	[-0.0026,0.0728]	[-0.0946,0.0033]
Diabetes	0.0096**	0.0320**	-0.0416**
	[0.0023,0.0168]	[0.0077,0.0563]	[-0.0731,-0.0101]
Observations	28414	28414	28414

p-values in parentheses
^{*} *p* < 0.05, ^{**} *p* < 0.01, ^{***} *p* < 0.001

Table 5: Marginal effects of weighted ordered logistic regression for association between sexual orientation and patient satisfaction among females

	Dissatisfied	Somewhat Satisfied	Very Satisfied
Lesbian/Bisexual	0.0091 [-0.0029,0.0211]	0.027 [-0.0088,0.0628]	-0.0361 [-0.0839,0.0117]
Age	-0.0004 ^{***} [-0.0006,-0.0002]	-0.0011 ^{***} [-0.0017,-0.0006]	0.0015 ^{***} [0.0008,0.0022]
Education			
Less than High School	Ref	Ref	Ref
High School Graduate	-0.0021 [-0.0105,0.0064]	-0.0062 [-0.0312,0.0188]	0.0083 [-0.0251,0.0417]
Some College	0.0013 [-0.0067,0.0093]	0.0039 [-0.0199,0.0276]	-0.0052 [-0.0369,0.0266]
College Degree	0.0033 [-0.0053,0.0118]	0.0096 [-0.0157,0.0350]	-0.0129 [-0.0467,0.0210]
Graduate Degree	0.0011 [-0.0089,0.0112]	0.0034 [-0.0264,0.0332]	-0.0045 [-0.0444,0.0354]
Race/Ethnicity			
Hispanic	Ref	Ref	Ref
Non-Hispanic White	-0.0040 [-0.0097,0.0018]	-0.0117 [-0.0290,0.0056]	0.0156 [-0.0074,0.0387]
Non-Hispanic Black	-0.0002 [-0.0097,0.0018]	-0.0006 [-0.0290,0.0056]	0.0008 [-0.0074,0.0387]
Non-Hispanic Asian	0.0010 [*] [0.0008,0.0183]	0.0283 [*] [0.0023,0.0543]	-0.0379 [*] [-0.0726,-0.0031]
Non-Hispanic Other	0.0021 [-0.0197,0.0239]	0.0062 [-0.0583,0.0708]	-0.0083 [-0.0947,0.0780]
Income			
\$0-49,999	Ref	Ref	Ref
\$50,000 - \$99,999	-0.0050 [*] [-0.0099,-0.0002]	-0.0148 [*] [-0.0290,-0.0007]	0.0198 [*] [0.0008,0.0388]
\$100,000 and over	-0.0224 ^{***} [-0.0292,-0.0156]	-0.0664 ^{***} [-0.0859,-0.0469]	0.0888 ^{***} [0.0627,0.1150]
Insurance			
Uninsured	Ref	Ref	Ref
Private Insurance	-0.0504 ^{***} [-0.0580,-0.0429]	-0.1490 ^{***} [-0.1690,-0.1290]	0.2000 ^{***} [0.1730,0.2260]
Public Insurance	-0.0472 ^{***} [-0.0547,-0.0397]	-0.1400 ^{***} [-0.1610,-0.1180]	0.1870 ^{***} [0.1590,0.2150]
Region			
Northeast	Ref	Ref	Ref
Midwest	-0.0070 [-0.0141,0.0001]	-0.0207 [-0.0417,0.0003]	0.0277 [-0.0004,0.0558]
South	-0.0035 [-0.0101,0.0032]	-0.0103 [-0.0300,0.0095]	0.0137 [-0.0127,0.0401]
West	0.0091 [*] [0.0021,0.0162]	0.0270 [*] [0.0064,0.0476]	-0.0361 [*] [-0.0637,-0.0085]
Health Status			
Excellent	Ref	Ref	Ref
Very Good	0.0186 ^{***} [0.0134,0.0239]	0.0552 ^{***} [0.0397,0.0707]	-0.0738 ^{***} [-0.0944,-0.0533]
Good	0.0411 ^{***}	0.1220 ^{***}	-0.1630 ^{***}

	[0.0355,0.0467]	[0.1050,0.1380]	[-0.1840,-0.1410]
Fair	0.0596***	0.1770***	-0.2360***
	[0.0507,0.0686]	[0.1530,0.2010]	[-0.2680,-0.2040]
Poor	0.0743***	0.2200***	-0.2940***
	[0.0587,0.0900]	[0.1740,0.2660]	[-0.3550,-0.2340]
Comorbidities			
Hypertension	0.0060*	0.0177*	-0.0237*
	[0.0006,0.0114]	[0.0019,0.0336]	[-0.0450,-0.0025]
Angina pectoris	0.0087	0.0257	-0.0344
	[-0.0154,0.0327]	[-0.0453,0.0967]	[-0.1290,0.0606]
Heart attack	-0.0101	-0.0300	0.0401
	[-0.0342,0.0140]	[-0.1010,0.0411]	[-0.0550,0.1350]
Heart condition/disease	0.0007	0.0019	-0.0026
	[-0.0094,0.0107]	[-0.0279,0.0317]	[-0.0425,0.0373]
Stroke	0.0082	0.0242	-0.0323
	[-0.0093,0.0256]	[-0.0276,0.0760]	[-0.1020,0.0369]
Emphysema	0.0001	0.0002	-0.0003
	[-0.0228,0.0230]	[-0.0676,0.0681]	[-0.0910,0.0905]
COPD	-0.0158*	-0.0468*	0.0626*
	[-0.0316,-0.0000]	[-0.0935,-0.0001]	[0.0002,0.1250]
Asthma	-0.0016	-0.0046	0.0062
	[-0.0073,0.0043]	[-0.0219,0.0126]	[-0.0169,0.0292]
Ulcer	-0.0172***	-0.0509***	0.0681***
	[-0.0258,-0.0086]	[-0.0764,-0.0254]	[0.0341,0.1020]
Cancer	0.0103*	0.0305*	-0.0408*
	[0.0016,0.0190]	[0.0045,0.0565]	[-0.0755,-0.0061]
Diabetes	0.0086*	0.0254*	-0.0340*
	[0.0012,0.0160]	[0.0034,0.0474]	[-0.0634,-0.0046]
Observations	35000	35000	35000

p-values in parentheses
 $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Chapter 5 Discussion

Introduction

This primary purpose of this study was to examine possible differences in patient satisfaction between LGB individuals and heterosexuals. These results would add to an understanding of LGB health disparities and any current gaps in health care quality for LGB individuals. This is the first nationally representative study to examine the patient satisfaction of LGB individuals. This study found no difference in patient satisfaction for LGB individuals compared to heterosexuals, and no difference in patient satisfaction among LGB individuals based on geographic region. These results may represent a recent improvement for LGB individuals in the health care setting due to an increase in provider

training and awareness of LGB health in recent years (AAMC, 2014), that may eventually lead to a reduction in health disparities. Continued health care professional training on how to best care for their LGB patients is important. Limitations in data collection methods specific to the LGB population should be improved upon in future research, as well as incorporating qualitative research.

Summary

This is the first study to use a nationally representative sample to compare the patient satisfaction of LGB individuals compared to heterosexuals. In this analysis examining the association between patient satisfaction and LGB status, there was no statistical difference detected between the LGB individuals and heterosexuals. Therefore, LGB individuals did not report lower satisfaction with their health care compared to heterosexuals. There was also not a statistical significant effect on LGB individuals' satisfaction for those living in the South and Midwest compared to the West and East. Hence living in the Midwest and South did not strengthen any negative level of patient satisfaction for LGB individuals.

In the study, LGB individuals were as satisfied with their health care as heterosexuals. These results show that a lower level of patient satisfaction may not be the source of the LGB health disparities. Previous research and evidence suggested that satisfaction would be lower for LGB individuals, but much of this research was several years old. The data used in this study are very recent, collected in 2013 and 2014. Recent studies analyzing access to care for LGB individuals have found lower rates of uninsurance and higher percentage with a usual source of care (Skopec & Long, 2015).

This study was completed before same sex marriage was legalized in the United States, so access may continue to improve for this population relating to improved access to health insurance (Skopec & Long, 2015). Therefore, a possible explanation for this study's results is that there may have been an improvement in the health care setting. Health care professionals may have been better trained to treat their LGB patients in recent years through initiatives from the American Medical Association and the GLMA: Health Professionals Advancing LGBT Equality ("About GLMA," ; "LGBT Resources," 2016), improving previously low levels of trust and communication. The growing acceptance of LGB rights including the legalization of same sex marriage and anti-discrimination policies in the health care setting ("James OBERGEFELL, et al., petitioners v. Richard HODGES, Director, Ohio Department of Health, et al.," 2015; Kates & Ranji, 2014) may also explain the results of this study. While experiences in the health care setting and therefore patient satisfaction may have increased in recent years for LGB individuals, health disparities do persist in this population. These health outcomes may improve over time with improving patient satisfaction, but more research is also needed to understand these disparities.

The LGB respondents in this survey were relatively young with average age of 38 years old and had a high level of education with about 82% having more than a high school diploma. Having a relatively young LGB sample may have lead to increased patient satisfaction. Younger LGB individuals may have been exposed to less stigma and discrimination over their lifetime compared to those older than the 38 years old average of the sample. They may be more comfortable in the health care setting and discussing their health with their provider. This study was unable to measure urbanicity, but based

on the breakdown of the LGB sample, it is likely that many of these individuals were living in urban areas as these areas tend to have a higher educated and younger population compared to rural areas (Eberhardt MS, 2001). Those living in urban areas may have more access to the LGB specific health initiatives that are currently in place, as well as access to LGB friendly providers, increasing their patient satisfaction. Those living in more rural areas may be less satisfied and have less access to LGB-directed health care. Understanding rural/urban differences for LBG individuals in patient satisfaction therefore would be an important next step in this research.

Related to this difference in geography, living in different regions of the country was associated with patient satisfaction for the total sample, but geographic region did not modify the relationship between LGB status and patient satisfaction. Again, an interpretation of these results may be that overall national level acceptance started to improve, reducing differences by regions that LGB individuals may experience in the health care setting. However, the broad categories of regions may also have contributed to these null findings, as variations may be more strongly detected by state and within states.

There were strong associations between several covariates and patient satisfaction that are worth discussing. Older individuals were more likely to be very satisfied, possibly related to the fact that older people are more comfortable engaging with their providers who they have been seeing for a long time. They may also have more practical views of their health and expectations for their doctors (Heje et al., 2008). Older patients also prefer to allow their doctors to make decisions and are less likely to question their medical care (Ende, Kazis, Ash, & Moskowitz, 1989), possibly resulting in higher

satisfaction. Additionally, SES factors such as insurance and income may lead individuals to being more satisfied, which confirms previous research (Alexander et al., 2003; Epstein et al., 1985; Kaplan et al., 1995; Shi et al., 2013; Verlinde et al., 2012). These results confirm the need to improve the quality of patient/provider encounters and improve satisfaction for those with lower SES. This study mirrored previous studies finding that non-Hispanic whites have higher patient satisfaction (Nápoles et al., 2009) than minorities, illustrating the importance of improving health care quality for minorities. Since lower satisfaction is associated with poor health outcomes, improving their satisfaction is important to improving the health of racial/ethnic minorities. With previously mixed results about how health affects satisfaction, it is worth noting the consistent pattern in this study that found better health and fewer comorbidities overall were associated with higher patient satisfaction. This may mean that sicker people in this sample had more complex and difficult interactions with their physician, resulting in lower satisfaction. However, having ulcer and COPD were positively associated with satisfaction, so more research is needed to understand how satisfaction is associated with health status.

In the sub-analyses, the age of males was not significantly associated with satisfaction, yet having lower education was associated with lower satisfaction, unlike the results in the total sample. This may illustrate a particular importance of additional years of education for males in terms of improving satisfaction. For women, being non-Hispanic white was not associated with their patient satisfaction. This finding would be interesting to explore further in future research looking at the intersection of gender and race/ethnicity in terms of patient satisfaction. Learning about why there may be fewer

racial/ethnic differences for women may help us to better understand this previous research finding that non-Hispanic whites generally have higher satisfaction overall (Nápoles et al., 2009).

Strengths and Limitations

This study has a number of strengths. First, there have been no previous studies using nationally representative data to examine LGB individuals' experiences, rather than same-sex couples, with the health care system overall. There are also very few studies of any sample size that have looked specifically at LGB individual's level of patient satisfaction with health care. In addition, the sensitive analysis that included patient satisfaction coded as very satisfied vs. other responses bolsters these results, as this analysis also produced no statistical significant difference between the two groups. An additional sensitivity analysis examining the effect of living in just the South also strengthens these findings. Finally, the use of a geographic region added greater nuance to these analyses, testing the impact of living in different regions of the country on LGB patient satisfaction.

Several limitations are also noted. First, the National Health Interview Survey (NHIS) is cross-sectional, so the study was unable to establish causality in these relationships. Additionally, the three mechanisms including quality of patient/health care provider communication, feelings of discrimination in the health care setting, and distrust in the health care provider, were unmeasured. Therefore, these constructs' direct effects were not tested. There are a few potential biases to note. The data were also self-reported, so there is the possibility of a self-report bias (Cook, 2010; Hill HA, 2000). There is the

potential of a selection bias resulting from restricting the analytic sample to those that have had health care in the last 12 months. It is possible that these individuals were more engaged in the system and had a higher patient satisfaction overall.

As previously discussed, a state-specific or within-state analysis could have better illuminated a moderating effect on LGB individuals' satisfaction. However in this study, the broader category of region was used in the analysis due to the limitations of the available data. This data also did not have a measure of urbanicity, which limits this analysis. Similarly, the broader income brackets also was a limitation in the analysis.

The measure of patient satisfaction used in this study is also a limitation. In the NHIS, the construct is defined by one question. Therefore, this study was unable to get at the nuances of patient satisfaction, including specifics about the ease of scheduling an appointment, experience in the doctor's office, interaction with the provider and follow-up communication with the provider. Using patient satisfaction measures in future research with this type of data would be provide a deeper understanding of this group's experiences with the health care setting. More generally, connecting clinical outcomes data could strengthen patient satisfaction measures that only include patient experience data. Especially when trying to understand LGB individuals' health disparities, having these types of clinical indicators would be helpful.

Finally, it is important to discuss potential issues with the data as they apply specifically to the LGB population. First, while using two years of data did allow for a larger sample size, the LGB sample size was still a very small proportion of the entire sample (about 3%). Unlike other minority groups, LGB individuals were not oversampled in these datasets, which limits the scope of this analysis. Additionally, there

are data collection concerns specific to the LGB population, particularly a potential reluctance to disclose their sexual orientation in a survey (IOM, 2011). This may be due to concerns about stigma and prejudice, as well as a desire to remain private about their sexual orientation (Institute of Medicine, 2011). This means that the subsample identified as LGB in this study may not fully represent the LGB sample in the NHIS datasets. It is possible that there was a substantial number of individuals put in the heterosexual group that were actually LGB. If LGB individuals' satisfaction is actually lower as hypothesized, that would mean that the LGB group's satisfaction was artificially inflated and therefore reducing a potential difference between the two groups. This would be a misclassification bias toward the null. An example that illustrates this potential misclassification is the higher percentage of LGB individuals with some college, college degree, and graduate degree compared to heterosexuals. There is no reason to think there would be a difference in education between these two groups, illustrating the potential that less educated LGB individuals did not identify as LGB in the survey.

Implications

Findings from this research provide several important implications specific to the scope of LGBT health research and the current disparities within the population. If LGB individuals do have sufficient satisfaction with their care, they may be having good experiences with their health care professionals. Current efforts to train health care professionals about LGBT should be continued and enhanced. As previously mentioned, health care professional organizations are continuing to work to improve the treatment of this population. Educational organizations like the American Association of Medical

Colleges (AAMC) have also started to stress the importance of health care professional education. In 2014, they released *Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming, or Born with DSD: A Resource for Medical Educators* (AAMC, 2014), a report to help medical schools implement education specific to treating this population. This report is the first to create more formal curriculum about LGBT health for Medical schools. Previous to this report, smaller initiatives have been completed. The GLMA has been working to improve provider training since its inception in 1981, including providing a 10-year training plan to improve LGBT health, as part of Healthy People 2010. In 2007, the Human Rights Campaign Foundation created the Healthcare Equality Index to promote the care of LGBT individuals by healthcare organizations. More informally, community health centers and organizations have been working for many years to train health care providers on LGBT health (AAMC, 2014). With this report and guidance now in place, medical education about LGBT health should continue to be improved upon in the coming years.

With current health disparities among this population, it may take time for this improved health professional education to lead to improved health. This study only included LGB individuals who had health care in the past 12 months and it may be that LGB individuals not seeking health care need additional attention with continued improvement in health outreach to the LGB community. Therefore, in addition to continued provider education, LGB advocacy groups should work to reach those LGB individuals who are not seeking care, who perhaps fear discrimination. This could be done through conducting health related events attended by doctors and nurses, as well as

proving information about practices that have providers specifically trained to treat LGB patients. The group, GLMA: *Health Professionals Advancing LGBT Equity*, is currently providing an example of this kind of database. Other advocacy groups could utilize this database of LGBT friendly providers in their area to encourage this population to seek health care. Similarly, future research about this group may need to improve sampling methods to collect a more representative sample of the LGB population.

This study aligns with the Healthy People 2020 goal to increase our understanding of this population and their health disparities. It may reflect progress in the health care setting, and future improvement in disparities as these initiatives continue to grow and improve. HHS therefore should continue to promote LGB health initiatives that are working to improve provider training and understanding of this population. To better meet the goals, this study tell us that more research is needed into the nuances of their experiences in the health care setting in order to confirm the results of this study and understand better what is working and not working to improve the care of this population since LGB health disparities do persist.

Recommendations for Future Research

There are several many opportunities for future research. Future national studies may want to consider oversampling LGB individuals, as they do with other minority groups. This would reduce internal validity concerns of data that contains a very small percentage of LGB individuals. If there are LGB individuals in the NHIS datasets who did not identify as LGB, this issue will hopefully continue to improve in future datasets. There is continued social and cultural acceptance of sexual minorities illustrated by the

legalization of same-sex marriage ("James OBERGEFELL, et al., petitioners v. Richard HODGES, Director, Ohio Department of Health, et al.," 2015). In addition, the Affordable Care Act prohibited discrimination based on sexual orientation for programs receiving federal funds like Medicare or Medicaid, as well as requiring hospitals and long-term care facilities to allow visitation for same-sex couples (Kates & Ranji, 2014). These policies and improvements in the health care setting may mean that more individuals will increasingly over time feel comfortable disclosing their sexual orientation in studies. Since patient satisfaction may not be the source of this population's health disparities, further research is needed to understand why these negative health outcomes and behaviors persist. Additional studies looking at differences geographically by state, within state or by urbanicity would also be interesting.

In addition to improved quantitative data, qualitative research would also add to our understanding of LGB individuals' satisfaction with their health care. An explanatory mixed method design with qualitative research following this study may be especially helpful in understanding the unexpected results of this study finding no difference in patient satisfaction. Conducting focus groups with LGB individuals and interviews with their providers may lead to a greater understanding of this group's patient satisfaction and why they may be satisfied, but still be facing health disparities. While this study can provide generalizable results to the population, additional qualitative data can provide insights into LGB experiences with their providers, as well as the providers' perspective on how they treat their LGB patients. We could learn more about how often sexual orientation is disclosed in visits by patients and how comfortable providers feel in

providing care specific to LGB patients. This can help us to better understand the nuances of LGB individuals' patient satisfaction.

Conclusion

Prior to this study, we knew very little about differences that existed between LGB and heterosexual patients in terms of patient satisfaction. This study found no difference in patient satisfaction between these two groups during 2013 and 2014. Using recent data, this study illustrates that conditions in the health care setting may have improved for the LGB population, potentially leading to a reduction in health disparities in the future. Results from this study show the importance of current policies and practices that support training health care professionals to treat their LGB patients and that these policies should be enhanced to continue to meet the needs of this population. Future studies should improve and expand the data collection methods and procedures for this population. Mixed methods approaches that incorporate qualitative research in particular would contribute to an understanding of this study and additional details about LGB individuals' experiences in the health care setting.

References

- About GLMA. Retrieved from <http://www.glma.org/index.cfm?fuseaction=Page.viewPage&pageId=532>
- Aharony, L., & Strasser, S. (1993). Patient satisfaction: what we know about and what we still need to explore. *Med Care Rev*, 50(1), 49-79.
- AIDS, F. C. A. (2003). *HIV/AIDS philanthropy: History and current paramaters, 1981-2000*. New York: Funders Concerned About AIDS
- Alazri, M. H., & Neal, R. D. (2003). The association between satisfaction with services provided in primary care and outcomes in Type 2 diabetes mellitus. *Diabet Med*, 20(6), 486-490.
- Alexander, G., Casalino, L. P., & Meltzer, D. O. (2003). Patient-physician communication about out-of-pocket costs. *Jama*, 290(7), 953-958. doi:10.1001/jama.290.7.953
- Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *J Health Soc Behav*, 36(1), 1-10.
- An Anthropological Perspective of Ethnicity and Race. *Anthropological Perspectives* Retrieved from <http://uwfox.uwc.edu/academics/depts/ant/perspective.html>
- Ashton, C. M., Haidet, P., Paterniti, D. A., Collins, T. C., Gordon, H. S., O'Malley, K., . . . Street, R. L., Jr. (2003). Racial and ethnic disparities in the use of health services: bias, preferences, or poor communication? *J Gen Intern Med*, 18(2), 146-152.
- Austin, S. B., Ziyadeh, N. J., Corliss, H. L., Haines, J., Rockett, H. R., Wypij, D., & Field, A. E. (2009). Sexual orientation disparities in weight status in adolescence: findings from a prospective study. *Obesity (Silver Spring)*, 17(9), 1776-1782. doi:10.1038/oby.2009.72
- Bayer, R. (1987). *Homosexuality and American psychiatry: The politics of diagnosis* (Revised Edition ed.). Princeton, NJ: Princeton University Press
- Bottone, F. G., Musich, S., Wang, S. S., Hommer, C. E., Yeh, C. S., & Hawkins, K. (2014). Obese older adults report high satisfaction and positive experiences with care. *BMC Health Serv Res*, 14, 220. doi:10.1186/1472-6963-14-220
- Boulware, L. E., Cooper, L. A., Ratner, L. E., LaVeist, T. A., & Powe, N. R. (2003). Race and trust in the health care system. *Public Health Rep*, 118(4), 358-365.
- Brooks, V. R. (1981). *Minority stress and lesbian women* (V. R. Brooks Ed.). Lexington, MA: Lexington Books.
- Buchmueller, T., & Carpenter, C. S. (2010). Disparities in health insurance coverage, access, and outcomes for individuals in same-sex versus different-sex relationships, 2000-2007. *Am J Public Health*, 100(3), 489-495. doi:10.2105/ajph.2009.160804
- Campbell, J. L., Ramsay, J., & Green, J. (2001). Age, gender, socioeconomic, and ethnic differences in patients' assessments of primary health care. *Quality in Health Care*, 10(2), 90-95. doi:10.1136/qhc.10.2.90
- Casazza, S. P., Ludwig, Emily, Cohn, Tracy J. (2015). Heterosexual Attitudes and Behavioral Intentions Toward Bisexual Individuals: Does Geographic Area Make a Difference? *Journal of Bisexuality*, 15(4).

- Chang, C. S., Chen, S. Y., & Lan, Y. T. (2013). Service quality, trust, and patient satisfaction in interpersonal-based medical service encounters. *BMC Health Serv Res*, 13, 22. doi:10.1186/1472-6963-13-22
- Changing Attitudes on Gay Marriage*. (2015). Retrieved from <http://www.pewforum.org/2015/07/29/graphics-slideshow-changing-attitudes-on-gay-marriage/>
- Clapham, P. J., Pushman, A. G., & Chung, K. C. (2010). A systematic review of applying patient satisfaction outcomes in plastic surgery. *Plast Reconstr Surg*, 125(6), 1826-1833. doi:10.1097/PRS.0b013e3181d51276
- Clift, J. B., & Kirby, J. (2012). Health care access and perceptions of provider care among individuals in same-sex couples: findings from the Medical Expenditure Panel Survey (MEPS). *J Homosex*, 59(6), 839-850. doi:10.1080/00918369.2012.694766
- Cohen, G. (1996). Age and health status in a patient satisfaction survey. *Social Science & Medicine*, 42(7), 1085-1093. doi:[http://dx.doi.org/10.1016/0277-9536\(95\)00315-0](http://dx.doi.org/10.1016/0277-9536(95)00315-0)
- Collins, K., & O’Cathain, A. (2003). The continuum of patient satisfaction—from satisfied to very satisfied. *Social Science & Medicine*, 57(12), 2465-2470. doi:[http://dx.doi.org/10.1016/S0277-9536\(03\)00098-4](http://dx.doi.org/10.1016/S0277-9536(03)00098-4)
- Cook, C. (2010). Mode of administration bias. *The Journal of Manual & Manipulative Therapy*, 18(2), 61-63. doi:10.1179/106698110X12640740712617
- Cooper-Patrick, L., Gallo, J. J., Gonzales, J. J., & et al. (1999). RAce, gender, and partnership in the patient-physician relationship. *Jama*, 282(6), 583-589. doi:10.1001/jama.282.6.583
- Daniel, H., & Butkus, R. (2015). Lesbian, Gay, Bisexual, and Transgender Health Disparities: Executive Summary of a Policy Position Paper From the American College of PhysiciansLGBT Health Disparities. *Ann Intern Med*, 163(2), 135-137. doi:10.7326/M14-2482
- Dardick, L., & Grady, K. E. (1980). Openness between gay persons and health professionals. *Ann Intern Med*, 93(1), 115-119.
- Definition of Terms: Sex, Gender, Gender Identity, Sexual Orientation* (2011). Retrieved from <http://www.apa.org/pi/lgbt/resources/sexuality-definitions.pdf>
- Diamant, A. L., Wold, C., Spritzer, K., & Gelberg, L. (2000). Health behaviors, health status, and access to and use of health care: a population-based study of lesbian, bisexual, and heterosexual women. *Arch Fam Med*, 9(10), 1043-1051.
- Disparities in Health and Health Care: Five Key Questions and Answers* (2012). Retrieved from
- Doescher, M. P., Saver, B. G., Franks, P., & Fiscella, K. (2000). Racial and ethnic disparities in perceptions of physician style and trust. *Arch Fam Med*, 9(10), 1156-1163.
- Donabedian, A. (1988). The quality of care. How can it be assessed? *Jama*, 260(12), 1743-1748.
- Doyle, C., Lennox, L., & Bell, D. (2013). A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *BMJ Open*, 3(1). doi:10.1136/bmjopen-2012-001570
- Eberhardt MS, I. D., Makuc DM, et al. . (2001). *Health, United States, 2001 With Urban and Rural Health Chartbook*. Retrieved from Hyattsville, Maryland:

- Elder, G. H. (1998). The life course as developmental theory. *Child Development*, 69(1).
- Ende, J., Kazis, L., Ash, A., & Moskowitz, M. A. (1989). Measuring patients' desire for autonomy: decision making and information-seeking preferences among medical patients. *J Gen Intern Med*, 4(1), 23-30.
- Epstein, A. M., Taylor, W. C., & Seage Iii, G. R. (1985). Effects of patients' socioeconomic status and physicians' training and practice on patient-doctor communication. *Am J Med*, 78(1), 101-106. doi:[http://dx.doi.org/10.1016/0002-9343\(85\)90469-3](http://dx.doi.org/10.1016/0002-9343(85)90469-3)
- Flach, S. D., McCoy, K. D., Vaughn, T. E., Ward, M. M., BootsMiller, B. J., & Doebbeling, B. N. (2004). Does Patient-centered Care Improve Provision of Preventive Services? *J Gen Intern Med*, 19(10), 1019-1026. doi:10.1111/j.1525-1497.2004.30395.x
- Ford, M. E., & Kelly, P. A. (2005). Conceptualizing and Categorizing Race and Ethnicity in Health Services Research. *Health Serv Res*, 40(5 Pt 2), 1658-1675. doi:10.1111/j.1475-6773.2005.00449.x
- Gay rights in the US, state by state. (2015). *LGBT Rights* Retrieved from <http://www.theguardian.com/world/interactive/2012/may/08/gay-rights-united-states>
- Gee, G. C. (2002). A multilevel analysis of the relationship between institutional and individual racial discrimination and health status. *Am J Public Health*, 92(4), 615-623.
- Glass, T. A., & McAtee, M. J. (2006). Behavioral science at the crossroads in public health: extending horizons, envisioning the future. *Soc Sci Med*, 62(7), 1650-1671. doi:10.1016/j.socscimed.2005.08.044
- Harrison, A. E., & Silenzio, V. M. B. (1996). COMPREHENSIVE CARE OF LESBIAN AND GAY PATIENTS AND FAMILIES. *Primary Care: Clinics in Office Practice*, 23(1), 31-46. doi:[http://dx.doi.org/10.1016/S0095-4543\(05\)70259-1](http://dx.doi.org/10.1016/S0095-4543(05)70259-1)
- Hatzenbuehler, M. L., Keyes, K. M., & Hasin, D. S. (2009). State-Level Policies and Psychiatric Morbidity In Lesbian, Gay, and Bisexual Populations. *American Journal of Public Health*, 99(12), 2275-2281. doi:10.2105/AJPH.2008.153510
- Hatzenbuehler, M. L., McLaughlin, K. A., Keyes, K. M., & Hasin, D. S. (2010). The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: a prospective study. *Am J Public Health*, 100(3), 452-459. doi:10.2105/ajph.2009.168815
- The HCAHPS Survey – Frequently Asked Questions. Retrieved from <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Downloads/HospitalHCAHPSFactSheet201007.pdf>
- The Health of Lesbian, Gay, Bisexual and Transgender People: Building a Foundation for Better Understanding*. (2011). Retrieved from Washington, DC: Health Status. (1979). 2015 MESH: MESH Descriptor Data Retrieved from http://www.nlm.nih.gov/cgi/mesh/2015/MB_cgi
- Heje, H. N., Vedsted, P., Sokolowski, I., & Olesen, F. (2008). Patient characteristics associated with differences in patients' evaluation of their general practitioner. *BMC Health Serv Res*, 8, 178-178. doi:10.1186/1472-6963-8-178

- Herek, G. M. (2002). Heterosexuals attitudes toward bisexual men and women in the United States. *J Sex Res*, 39(4), 264-274. doi:10.1080/00224490209552150
- Herek, G. M. a. J. P. C. (1999). Sex differences in how heterosecuals think about lesbians and gay men: Evidience from survey context effects. *Journal of Sex Research*, 36(4), 348-360.
- Hill HA, K. D. (2000). Bias in observational studies. In B. J. Gail MH (Ed.), *Encyclopedia of epidemiologic methods* (pp. 94-100). Chichester, U.K.: John Wiley & Sons.
- Hutchinson, M. K., Thompson, A. C., & Cederbaum, J. A. (2006). Multisystem Factors Contributing to Disparities in Preventive Health Care Among Lesbian Women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 35(3), 393-402. doi:10.1111/j.1552-6909.2006.00054.x
- Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who are LGBT, Gender Nonconforming, or Born with DSD: A Resource for Medical Educators.* (2014). Retrieved from
- James OBERGEFELL, et al., petitioners v. Richard HODGES, Director, Ohio Department of Health, et al., No. 14-556 (Supreme Court of United States 2015).
- Kane, R. L., Maciejewski, M., & Finch, M. (1997). The Relationship of Patient Satisfaction with Care and Clinical Outcomes. *Med Care*, 35(7), 714-730. Retrieved from http://journals.lww.com/lww-medicalcare/Fulltext/1997/07000/The_Relationship_of_Patient_Satisfaction_with_Care.5.aspx
- Kaplan, S. H., Gandek, B., Greenfield, S., Rogers, W., & Ware, J. E. (1995). Patient and visit characteristics related to physicians' participatory decision-making style. Results from the Medical Outcomes Study. *Med Care*, 33(12), 1176-1187.
- Kates, J., & Ranji, U. (2014). *Health Care Access and Coverage for the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community in the United States: Opportunities and Challenges in a New Era.* Retrieved from <http://kff.org/disparities-policy/perspective/health-care-access-and-coverage-for-the-lesbian-gay-bisexual-and-transgender-lgbt-community-in-the-united-states-opportunities-and-challenges-in-a-new-era/>
- Katz-Wise, S. L., Blood, E. A., Milliren, C. E., Calzo, J. P., Richmond, T. K., Gooding, H. C., & Austin, S. B. (2014). Sexual orientation disparities in BMI among U.S. adolescents and young adults in three race/ethnicity groups. *J Obes*, 2014, 537242. doi:10.1155/2014/537242
- Klitzman, R. L., & Greenberg, J. D. (2002). Patterns of Communication Between Gay and Lesbian Patients and Their Health Care Providers. *J Homosex*, 42(4), 65-75. doi:10.1300/J082v42n04_04
- Larson, L. N., Rovers, J. P., & MacKeigan, L. D. (2002). Patient satisfaction with pharmaceutical care: update of a validated instrument. *J Am Pharm Assoc (Wash)*, 42(1), 44-50.
- Lawrence v. Texas, 539 C.F.R. (2003).
- Lesbian, Gay, Bisexual, and Transgender Health.* (2014). Retrieved from
- LGBT Resources. (2016). Retrieved from <http://www.ama-assn.org/ama/pub/about-ama/our-people/member-groups-sections/glb-t-advisory-committee/glb-t-resources.page?>

- Li, C.-C., Matthews, A. K., Aranda, F., Patel, C., & Patel, M. (2015). Predictors and Consequences of Negative Patient-Provider Interactions Among a Sample of African American Sexual Minority Women. *LGBT Health, 2*(2), 140-146. doi:10.1089/lgbt.2014.0127
- Link, B. G., & Phelan, J. C. (2001). Conceptualizing Stigma. *Annual Review of Sociology, 27*(1), 363-385. doi:doi:10.1146/annurev.soc.27.1.363
- Matthews, D. D., & Lee, J. G. (2014). A profile of North Carolina lesbian, gay, and bisexual health disparities, 2011. *Am J Public Health, 104*(6), e98-e105. doi:10.2105/ajph.2013.301751
- Mayer, K. H., Bradford, J. B., Makadon, H. J., Stall, R., Goldhammer, H., & Landers, S. (2008). Sexual and gender minority health: what we know and what needs to be done. *Am J Public Health, 98*(6), 989-995. doi:10.2105/ajph.2007.127811
- McCarthy, J. (2014). Same-Sex Marriage Support Reaches New High at 55%. <http://www.gallup.com/poll/169640/sex-marriage-support-reaches-new-high.aspx> Retrieved from <http://www.gallup.com/poll/169640/sex-marriage-support-reaches-new-high.aspx>
- Medicare and the American Social Contract* (1999). Retrieved from 1776 Massachusetts Avenue, NW, Suite 615, Washington, DC 20036:
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *J Health Soc Behav, 36*(1), 38-56.
- Meyer, I. H. (2003). Minority stress and mental health in gay men In L. D. G. a. D. C. Kimmel (Ed.), *Psychological perspectives on lesbian, gay, and bisexual experiences* (2nd ed. ed., pp. 699-731). New York: Columbia University Press
- Mor, Z., Eick, U., Wagner Kolasko, G., Zviely-Efrat, I., Makadon, H., & Davidovitch, N. (2015). Health status, behavior, and care of lesbian and bisexual women in Israel. *J Sex Med, 12*(5), 1249-1256. doi:10.1111/jsm.12850
- Nápoles, A. M., Gregorich, S. E., Santoyo-Olsson, J., O'Brien, H., & Stewart, A. L. (2009). Interpersonal Processes of Care and Patient Satisfaction: Do Associations Differ by Race, Ethnicity, and Language? *Health Serv Res, 44*(4), 1326-1344. doi:10.1111/j.1475-6773.2009.00965.x
- NRC. (1993). *The social impact of AIDS in the United States*. Washington, DC: National Academy Press
- Rostosky, S. S., Riggle, E. D., Horne, S. G., & Miller, A. D. (2009). Marriage amendments and psychological distress in lesbian, gay, and bisexual (LGB) adults. *Journal of Counseling Psychology, 56*(1), 56.
- Rounds, K. E., McGrath, B. B., & Walsh, E. (2013). Perspectives on provider behaviors: a qualitative study of sexual and gender minorities regarding quality of care. *Contemp Nurse, 44*(1), 99-110. doi:10.5172/conu.2013.44.1.99
- Shi, L., Lebrun-Harris, L. A., Daly, C. A., Sharma, R., Sripipatana, A., Hayashi, A. S., & Ngo-Metzger, Q. (2013). Reducing disparities in access to primary care and patient satisfaction with care: the role of health centers. *J Health Care Poor Underserved, 24*(1), 56-66. doi:10.1353/hpu.2013.0022
- Siegrist, J., Richard Bolton (2013). Patient Satisfaction: History, Myths, and Misperceptions. *AMA Journal of Ethics, 15*(11), 982-987.

- Simpson, T. L., Balsam, K. F., Cochran, B. N., Lehavot, K., & Gold, S. D. (2013). Veterans administration health care utilization among sexual minority veterans. *Psychol Serv, 10*(2), 223-232. doi:10.1037/a0031281
- Siriwardena, A. N. G., Steve (2014). Patient Perspectives on Quality *Quality in Primary Care*(22), 11-15.
- Skopec, L., & Long, S. K. (2015). Lesbian, Gay, And Bisexual Adults Making Gains In Health Insurance And Access To Care. *Health Aff (Millwood), 34*(10), 1769-1773. doi:10.1377/hlthaff.2015.0826
- Snively, C. A., Kreuger, Larry, Streachm John J, Watt, Wilson, Chadha, Janice. (2004). Understanding Homophobia. *Journal of Gay & Lesbian Soical Services, 17*(1), 59-81. doi:10.1300/J041v17n01_05
- Socioeconomic Status. *Psychology Topics* Retrieved from <http://www.apa.org/topics/socioeconomic-status/>
- Survey Description, National Health Interview Survey* (2013).
- Survey Description, National Health Interview Survey* (2014).
- Thom, D. H., Kravitz, R. L., Bell, R. A., Krupat, E., & Azari, R. (2002). Patient trust in the physician: relationship to patient requests. *Fam Pract, 19*(5), 476-483.
- Thornton, R. L., Powe, N. R., Roter, D., & Cooper, L. A. (2011). Patient-physician social concordance, medical visit communication and patients' perceptions of health care quality. *Patient Educ Couns, 85*(3), e201-208. doi:10.1016/j.pec.2011.07.015
- Tjepkema, M. (2008). Health care use among gay, lesbian and bisexual Canadians. *Health Rep, 19*(1), 53-64.
- Tracy, J. K., Lydecker, A. D., & Ireland, L. (2010). Barriers to cervical cancer screening among lesbians. *J Womens Health (Larchmt), 19*(2), 229-237. doi:10.1089/jwh.2009.1393
- Tracy, J. K., Schluterman, N. H., & Greenberg, D. R. (2013). Understanding cervical cancer screening among lesbians: a national survey. *BMC Public Health, 13*, 442. doi:10.1186/1471-2458-13-442
- Tsai, T. C., Orav, E. J., & Jha, A. K. (2015). Patient satisfaction and quality of surgical care in US hospitals. *Ann Surg, 261*(1), 2-8. doi:10.1097/sla.0000000000000765
- Valanis, B. G., Bowen, D. J., Bassford, T., Whitlock, E., Charney, P., & Carter, R. A. (2000). Sexual orientation and health: comparisons in the women's health initiative sample. *Arch Fam Med, 9*(9), 843-853.
- Verlinde, E., De Laender, N., De Maesschalck, S., Deveugele, M., & Willems, S. (2012). The social gradient in doctor-patient communication. *Int J Equity Health, 11*, 12. doi:10.1186/1475-9276-11-12
- Wall, K. M., Khosropour, C. M., & Sullivan, P. S. (2010). Offering of HIV screening to men who have sex with men by their health care providers and associated factors. *J Int Assoc Physicians AIDS Care (Chic), 9*(5), 284-288. doi:10.1177/1545109710379051
- Ware, J. E., Synder MK, Wright WR, et al. (1983). Definign and Measuring patient satisfaction with medical care. *Eval. Program Plan, 6*, 247-263.
- Wolitski, R. J., Stall, Ron, Valdiserri, Ronald O. (2008). *Unequal Opportunity: Health Disparities Affecting Gay and Bisexual Men in the United States*. 198 Madison Avenue, New York, New York 10016: Oxford University Press.

Woolley, F. R., Kane, R. L., Hughes, C. C., & Wright, D. D. (1978). The effects of doctor-patient communication on satisfaction and outcome of care. *Social Science & Medicine. Part A: Medical Psychology & Medical Sociology*, 12(0), 123-128. doi:[http://dx.doi.org/10.1016/0271-7123\(78\)90039-1](http://dx.doi.org/10.1016/0271-7123(78)90039-1)