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Socioeconomic and Sociocultural Factors Associated with Parenting Choice and Fertility Experience Among Lesbian and Nonlesbian Women

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Abstract

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MSc, Hibernia College, 2009

BS, Trinity College of Vermont, 1985

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Public Health, Epidemiology

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Abstract

Minorities including lesbians may face disparities that contribute to minority stress, which leads to adverse health outcomes. The purpose of this social epidemiology study was to examine the association between insured status, perceived stress, and parental status among lesbians and nonlesbians. The theoretical foundation was minority stress, and the design was quantitative with a convenience sample of women aged 18 years and older. Data on demographics, perceived stress, fertility quality of life, and lesbian identity disclosure were collected via online survey. Among the 314 respondents, 102 self-selected as lesbian (49% parents), and 212 self-selected as nonlesbian (73.1% parents). More than 50% of participants had experience with some type of assisted reproduction (ART). Using the test for association, regardless of parental status or perceived stress, lesbians were more than twice as likely as nonlesbians (18.5% to 8.3%, respectively) to lack fertility treatment coverage; this difference was statistically significant, $p < .05$. Most participants (62.5%) fell in the moderate stress category. There were no statistically significant differences between groups in Fertility Quality of Life scores. Lesbians with children had a greater degree of outness ($p < .001$) compared to lesbians without children. Using logistic regression, insured status ($p = .010$) and perceived stress ($p = .035$) were associated with parenting status. Findings from the current study contribute to understanding minority stress of lesbians related to parenting and ART. Shifting social constructs to improve inclusivity may minimize minority stress and support public health. Assuring reproductive access and favorable social conditions may promote positive change for lesbians considering parenthood.

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Dedication

This work is dedicated to my three sons, who were unknowingly pioneers.

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I am immensely grateful to my committee chair Dr. Jennifer Oliphant for her constant encouragement and belief in me. I thank Dr. Kate Callahan-Myrick, my Committee Member, for her upbeat and positive support in times of doubt, and my University Research Reviewer, Dr. James Rohrer. Your guidance and feedback were invaluable, and I honestly could not have persevered without you having my back.

I extend heartfelt thanks to my friends and extended family who have offered patience and understanding along the way and seem to still be interested in my work after all these years! I would like to thank my two older sons for cheering me on, feeling proud, and making my heart smile, always. I am full of gratitude for my wife believing in and supporting me all along the way. You all played a vital part in this long strange trip and made achieving my goal possible.

A whole lot happened along this journey, including significant life transitions, birth, and death. Never give up and always believe.

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Chapter 1: Introduction to the Study

Women who identify as lesbian may experience stigma and stress, which can have an adverse impact on health (Alencar Albuquerque et al., 2016; Denton, Rostosky, & Danner, 2014; Eliason, 2014; Meyer, 2015). Before the Defense of Marriage Act was overturned in 2015, women in same-sex relationships often lacked access to equal benefits such as health insurance (Perone, 2015). Lack of insurance coverage is a barrier that can contribute to minority stress and lead to health disparities for the population denied. Such barriers contribute to differences in health care access, including reproductive options, and by extension, to minority stress (Flenar, Tucker, & Williams, 2017; Müller, 2017).

Heteronormative thinking and homonegative behaviors may also contribute to minority stress. For example, health care settings still use intake forms with the traditional language of male/husband/father and female/wife/mother (Blanchfield & Patterson, 2015; Bolderston & Ralph, 2016; Levitt, Puckett, Ippolito, & Horne, 2012; Lindley, Walsemann, & Carter, 2013). In a gynecological setting, questions of sexual activity and contraceptive use are symbolic of unconscious (heteronormative) bias and can be awkward for lesbians (Barefoot, Warren, & Smalley, 2017; Foglia & Fredriksen-Goldsen, 2014). However, practitioners should not assume that a woman is straight, heterosexually married, or has traditional sexual intercourse or that lesbians do not want to have children (Polis & Zabin, 2012). This may cause lesbians who are considering or seeking reproductive assistance to experience added stigma and stress as a minority (Bogart, Revenson, Whitfield, & France, 2014; Borneskog, Lampic, Sydsjö, Bladh, &

Svanberg, 2014; Borneskog, Skoog Svanberg, Lampic, & Sydsjö, 2012; Dahl, Fylkesnes, Sørlie, & Malterud, 2013; Munson & Cook, 2016; Rozental & Malmquist, 2015).

Public health includes the development of the social machinery that will ensure to every individual in the community a standard of living adequate for the maintenance of health (Schneider & Schneider, 2016). The current research supports this facet of public health: to ensure quality and equal accessibility of reproductive services for lesbians. Social epidemiology is used to explore the connection between social factors and health experiences and outcomes (Honjo, 2004; von dem Knesebeck, 2015), which was used in this study to address the lack of literature on whether factors exist that contribute to or create minority stress and influence the parenting decisions of lesbians. Examining the parenting choice, reproductive intentions, and fertility experiences of lesbians supports positive social change for this population within reproductive health by providing knowledge that is useful for health care policy makers and insurers to decrease heteronormative practices and improve parity. Health educators and providers like obstetricians and practitioners providing assisted reproductive technology (ART) services can benefit from detailed information about the impact of heterosexism and factors that contribute to minority stress for this population. Ultimately, this will lead to changes that improve the patient/ART experience regardless of sexual orientation.

Further, members of the health care system and policy makers can contribute to positive social change by eliminating heteronormative policies and practices. Doing so can reduce minority stress that affects lesbians in health care by improving access to ART options and improving the lesbian reproductive health experience. Long-term benefits

may include the elimination of disparities, evidenced by increased ART success rates for lesbians and increased satisfaction with the reproductive health care experience. This is aligned with the Centers for Disease Control and Prevention (CDC) National Public Health Action Plan for the Detection, Prevention, and Management of Infertility (CDC, 2014). Changes in policy and practice can support and promote healthy relationships for lesbians and their families. In the interest of public health, reducing the burden and disparities that contribute to minority stress would help ensure equal access and reduced burden and lead to improved reproductive options for lesbians.

This chapter includes background information for context, the problem statement and study purpose, the research questions and hypotheses, the applicable theoretical framework, the nature of the study, definitions used, assumptions, the study's scope, limitations, and anticipated significance.

Background

The lack of literature suggests that lesbians are not routinely studied as a population of women in reproductive health (Eyler, Pang, & Clark, 2014; Marvel et al., 2016; Utamsingh, Richman, Martin, Lattanner, & Chaikind, 2016). Further, discussion of sexual orientation is secondary to traditional care and only followed from self-disclosure rather than being part of the holistic approach to care (Macapagal, Bhatia, & Greene, 2016; Munson & Cook, 2016). But lesbians may face unique needs in reproductive health (Kissin, Boulet, Jamieson, & Assisted Reproductive Technology Surveillance Research Team, 2016; Munson & Cook, 2016). There are factors like insured status, access to a supportive provider, and heteronormative policies and practices that create barriers and

contribute to minority stress for lesbians (Dean, Victor, & Guidry-Grimes, 2016; N. Hsieh & Ruther, 2016; Quinn et al., 2015). The current study was conducted to quantitatively explore factors that may contribute to minority stress in the context of parenting choice and reproductive intentions of lesbians to better assess the impact of this dynamic. For comparison, I included a cohort of nonlesbian women.

A review of the selected literature supports the use of minority stress as a theoretical framework for this study. The purpose was to assess whether heteronormative or homonegative practices and experiences contribute to minority stress and are associated with parenting decisions or reproductive intentions of lesbians (Balsam, Beadnell, & Molina, 2013; Hayman, Wilkes, Halcomb, & Jackson, 2013; Hayman, Wilkes, Jackson, & Halcomb, 2013; N. Hsieh & Ruther, 2016; Knight, Shoveller, Oliffe, Gilbert, & Goldenberg, 2013; Marques, Nogueira, & de Oliveira, 2015; Röndahl, Bruhner, & Lindhe, 2009; Utamsingh et al., 2016). The relationship between fertility intentions and behavior has been understudied, particularly for this population (Chetcuti et al., 2013; Schoen, Astone, Kim, Nathanson, & Fields, 1999). There is surveillance for ART (Sunderam et al., 2013) and public health records that track live births. However, there are no data specific to ART utilization or birthing outcomes among lesbians creating a public health void (Tarín, García-Pérez, & Cano, 2015). In the current study, I explored this research gap to identify areas for change that may improve public health policy and practice by ensuring equal access to quality reproductive health services for lesbians.

Reducing minority stress experienced through heteronormative/homonegative attitudes and barriers to ART access for lesbians can improve the reproductive options and treatment experience for this population. There is a lack of assurance for lesbians in ART quality and accessibility as well as a disparity in the social condition for lesbians, making this a matter of public health (Greenfeld & Seli, 2016; Marvel et al., 2016; S. K. Mishra, 2014; D. Mishra, Akman, & Mishra, 2014). A positive social change outcome of this study includes data to support reproductive intentions for lesbians considering or choosing parenthood.

Problem Statement

The inability to have children is more than a quality of life (QoL) issue because the experience of infertility can have economic, social, psychological, and physical effects. Infertility may be related to a range of factors that are of interest to public health (Warner et al., 2015). The American Society for Reproductive Medicine and the World Health Organization have defined infertility as a disease of the reproductive system (as cited in CDC, 2014). Data from the National Survey for Family Growth estimated that approximately 6% of reproductive-aged women in the United States were infertile. Another 12% reportedly experienced difficulty conceiving or carrying a pregnancy to term (Chandra, Copen, & Stephen, 2013). Further, fertility medications and interventions in assisted reproduction may lead to increased risks of adverse health outcomes for women and potentially for infants born as a result of ART procedures.

Beyond medical considerations of fertility treatment, the decision to become a mother is a deeply personal one for all women, whether by giving birth, co-parenting, or

adoption (Riskind, Patterson, & Nosek, 2013). But the choice to parent, particularly for lesbians, may be affected by social capital and subject to public opinion (Hatzenbuehler, Phelan, & Link, 2013; Kim & Fredriksen-Goldsen, 2016; Rozental & Malmquist, 2015). Lesbians do not always have financial or legal benefits like traditional couples (Butterfield & Padavic, 2014; Hull, 2016; Park, Kazyak, & Slauson-Blevins, 2016; L. Smith, 2013). Insurance coverage, access to providers, and benefits of social support networks may be varied (De Wert et al., 2014; S. Goldberg, 2015; S. K. Mishra, 2014; Rozental & Malmquist, 2015; H. Y. Wu et al., 2016).

Disparities in access to quality care, which may contribute to minority stress and lead to differences in outcomes, are a public health concern (Davies, Rumbold, & Moore, 2017; Marvel et al., 2016; Warner et al., 2015). But the association of minority stress and reproductive intentions of lesbians has been understudied (Blondeel et al., 2016; Carrotte et al., 2016), though lesbians may face socioeconomic and sociocultural disparities such as differences in insurance coverage, health provider access, or social support. In the current study, I examined which factors (i.e., insured status and perception of stress), if any, were associated with the decision to become a parent or with fertility treatment experience (see Warner, Jamieson, & Barfield, 2015).

Purpose of the Study

The purpose of this quantitative social epidemiological study was to determine which, if any, socioeconomic and sociocultural factors are associated with parenting decisions while controlling for sexual orientation. The independent variables included insured status and perceived stress (using the perceived stress scale [PSS]). The

dependent variable was parental status. For those who have considered or sought fertility/infertility treatment, I compared ART experience between lesbians and nonlesbians (Carpinello, Jacob, Nulsen, & Benadiva, 2016; Greenfeld & Seli, 2016; Marvel et al., 2016; Tarín et al., 2015). I also explored the degree of outness among lesbians with and without children. Additional information collected included age, race/ethnicity, education level, employment status, income level, and location (state).

Research Questions

Research Question 1 (RQ1): What is the predictive relationship between insured status, perceived stress, and parental status among lesbians and nonlesbians?

$H_0$1: There is no statistically significant difference in the predictive relationship.

H_a1: There is a statistically significant difference in the predictive relationship.

RQ2: For women who have experienced ART, what is the difference in Fertility Quality of Life total, core, and treatment scores between lesbians and nonlesbians?

$H_0$2: There is not a statistically significant difference in the Fertility Quality of Life total, core, and treatment scores among lesbians and nonlesbians.

H_a2: There is a statistically significant difference in the Fertility Quality of Life total, core, and treatment scores among lesbians and nonlesbians.

RQ3: What is the difference in the degree of outness as measured by the A Lesbian Identity Disclosure Assessment-II between lesbians with and without children?

$H_0$3: There is not a statistically significant difference in the degree of outness as measured by the A Lesbian Identity Disclosure Assessment-II among lesbians with and without children.

H_a3: There is not a statistically significant difference in the degree of outness as measured by the A Lesbian Identity Disclosure Assessment-II among lesbians with and without children.

Theoretical and Conceptual Framework

The theoretical framework for this study is minority stress (Meyer, 2015). Lesbians who are considering or seeking reproductive assistance may experience structural (policy-related) or community-level stigma that contributes to minority stress (Puckett, Horne, Herbitter, Maroney, & Levitt, 2017; Schwartz & Baral, 2015). These experiences can create barriers to health-seeking behaviors, which may adversely affect outcomes (Denton et al., 2014). Stressors and discriminatory barriers, whether real or perceived, may impact health and behaviors and outcomes for lesbians (Tracy, Lydecker, & Ireland, 2010; Tracy, Schluterman, & Greenberg, 2013). Researchers have examined minority stress in the context of mental health and substance misuse among lesbians (Flenar et al., 2017; Hatzenbuehler et al., 2013; Lee, Gamarel, Bryant, Zaller, & Operario, 2016; McPhail & Bombak, 2015; Simoni, Smith, Oost, Lehavot, & Fredriksen-Goldsen, 2017). However, in this population, the effects of stigma and stress on reproductive choices and experiences have not been examined. Lesbians should have equal access to treatment options and opportunities for favorable outcomes in becoming parents, making this a matter of public health (Stall et al., 2016; Tornello, Johnson, & O'Connor, 2013).

The decision to become a mother is personal and may go beyond QoL (Bergstrom-Lynch, 2015; Riskind et al., 2013). In general, women with an intention to

parent often attempt to do so (Ajzen & Klobas, 2013). For lesbians who experience disparities, there may be factors beyond the desire to be a parent that influence their intentions and actions (or inaction; Bergstrom-Lynch, 2015; Hatzenbuehler et al., 2013; Warner et al., 2015). The stressors in choosing parenthood may be imbalanced for this population and the path to ART may be perceived as insurmountable (Lo, Chan, & Chan, 2016). I aimed to assess whether there is a difference between lesbian and nonlesbian women in this regard.

The minority stress model can be used to understand the impact of stigma and stress experienced by lesbians on their parenting choices and consideration for seeking ART (Collins, 2017; Hodson, Meads, & Bewley, 2017). When a minority experiences external factors that influence personal care decisions, this creates a disparity that others in the general population do not have to consider (Robinson, Galloway, Bewley, & Meads, 2017). Thus, minority stress is applicable as the framework to address the research questions and hypotheses for this study.

Nature of the Study

The nature of this study was nonexperimental and quantitative. Convenience sampling was used along with an online survey for data collection. The design provided quantitative data to describe the population and parameters assessed. Qualitative studies have used interviews with lesbian couples about their experiences in becoming parents (Chapman, Wardrop, Zappia, Watkins, & Shields, 2012; Luther, 2016; Wall, 2011; Wyverkens et al., 2014). But these studies had small sample sizes, so the ability to generalize findings is limited (Rostosky, Riggle, Rothblum, & Balsam, 2016). In contrast,

the current study design encompassed a broad sample of women, including lesbians and nonlesbians. Data analysis was used to explore associations among the variables while controlling for sexual orientation.

The selected independent variables are among those commonly used when examining health disparities (Shavers, 2007). The independent variables included insured status and perceived stress. The hypothesis was that the independent variables would help explain or predict the dependent variable (outcome). The dependent variable is similar to one used when reporting about heterosexual women who seek ART (Kotelchuck et al., 2014; Lundsberg et al., 2014). The dependent variable of interest in the study was parenting choice (parental status). The Fertility Quality of Life (FertiQoL) scale, which includes total, core, and treatment subscales, was administered to participants who had experience with seeking or undergoing fertility treatment (Boivin, Takefman, & Braverman, 2011). Using the improved A Lesbian Identity Disclosure Assessment (ALIDA-II; van Dam, 2008, 2015), I explored the degree of outness as an indicator of minority stress among lesbians with and without children. I also collected additional demographic, socioeconomic, and sociocultural information.

I collected primary data using an online survey with convenience sampling; I anticipated that snowball recruitment would occur. The study was delivered using a reputable web-based survey administrator (SurveyMonkey). Responses were collected anonymously and stored until I extracted them for analysis. The data set was analyzed using the version of IBM Statistical Package or the Social Sciences (SPSS) software

available at the time (Version 25) through Walden University. The PSS, FertiQoL, and the ALIDA-II were scored based on their respective published instructions.

Definition of Terms

A Lesbian Identification Disclosure Assessment (ALIDA): The ALIDA uses a Likert scale with seven questions to measure the degree of outness or disclosure, social support, and depression (van Dam, 2008, 2015). The version used in the study with permission from the author was the ALIDA-II, which includes questions for parents.

Assisted reproductive technology (ART): For this work, the term ART is used as a generalized term when referring to assistance with fertility, infertility, or assisted reproduction.

Fertility Quality of Life (FertiQoL) scale: The FertiQoL is a validated tool to reliably measure the impact of fertility and ART on QoL (Boivin et al., 2011). The core module includes Emotional, Mind/Body, Relational, and Social subscales. Environment and Tolerability are treatment module subscales.

LGBT: This abbreviation refers to someone who is part of the lesbian, gay, bisexual, or transgender community.

Perceived Stress Scale (PSS): The PSS is a widely used measure to examine nonspecific self-reported stress (Cohen, Kamarck, & Mermelstein, 1983). The 14-item PSS is considered psychometrically valid. The PSS has been used to explore the etiology of disease as an outcome measure of experienced levels of stress.

Self-rated health (SRH): Self-rating of health is a measure frequently used in epidemiological research (Eriksson, Undén, & Elofsson, 2001). Two questions from the

FertiQoL were not part of the total score: an overall evaluation of physical health and one related to QoL.

Sociocultural status: In the current study, sociocultural status included age, race/ethnicity, SRH, QoL, and PSS level.

Socioeconomic status: For this study, socioeconomic status included self-reporting of insured status, education level, employment status, and income level.

Assumptions

The study was designed based on certain assumptions, for example, that all lesbians and women in general have given thought to parenthood. Whether the women were aware, certain factors play a role in this decision. Not being a parent may be a deliberate choice or, by default, a lack of effort to pursue parenthood. I explored the association between select factors and the parenting decision or reproductive intentions of lesbians compared with nonlesbians. It is essential to understand these factors to enable changes in policies and practices that can improve public health for this population. Structural stigma is a factor in minority stress (Puckett et al., 2017), which could be eliminated through implementing nondiscrimination policies.

There was also an assumption in the current study that access to ART was restrictive for reasons not described elsewhere and that this contributes to a health disparity for lesbians who may consider parenting. Health disparities and equal access are a matter of public health, regardless of the population size that may be affected. With this study, I sought to explore if a disparity exists for lesbians and to identify possible contributing factors to enable changes in policy (access) and practice (experience).

Scope, Limitations, and Delimitations

In this study, I assessed whether insurance status, perceived stress, and self-identification were associated with parental status. I explored ART experience among lesbians and nonlesbians, and I also examined the degree of outness among lesbians with and without children. The FertiQoL Treatment subscale was considered reflective of ART-related stress among those with reproductive/ART experience. This approach was selected because minority stress theory assumes that a problem or disparities presently exist for lesbians considering parenthood or those seeking assisted reproduction.

The limitation of eligible participants (lesbians) and chosen variables may have been biased and threatened internal validity. Broadening the variables may be a potential topic for subsequent research. Threats to external validity may include tools utilized for data collection, selected based on availability, and recruitment method, which could affect the generalizability of findings.

Limitations and Delimitations

One potential limitation of the study was the ability to recruit an adequate sample size within a reasonable period. In this instance, recruitment was not a factor. Others have described inherent limitations to internal or external validity as they relate to the survey method, population under study, and accuracy of retrospective self-reporting (Carrotte et al., 2016; Herman, 2014; McAuliffe, DiFranceisco, & Reed, 2007). Based on this experience, I realized that survey questions needed to be as deliberate as possible.

An additional potential limitation was if only a small, localized sample responded, which would limit the generalizability of the findings (Crouch et al., 2014; Moorhead et

al., 2013). The goal was to promote and actively seek generalized distribution of the invitation to lesbians and nonlesbians. Broad sampling would enable evaluation of the most diverse set of factors that may be influential to the research questions. However, the generalizability may be limited based on the sample, which was not as broad as intended.

Another limitation resulted from a delimitation of the study—utilizing only two categories for respondents: lesbian and nonlesbian. Feedback indicated that this was a challenge for some participants. There was also bias potential in recruiting women who self-select as lesbian and a risk of not engaging those who dislike a particular label or prefer an alternative term (Herman, 2014).

Significance

This study is among the first to quantitatively assess whether factors of insured status and perceived stress differ among lesbians compared with nonlesbian women. The study findings advance knowledge on factors that play a role in the decision-making and intentions of lesbians when considering parenting or assisted reproduction. Qualitative studies exist for this population, as do data on ART and traditional birth statistics, regardless of sexual orientation. Still, a gap remains when it comes to studying lesbians with and without children.

One potential marker of public health change could be the expansion of existing data collection resources to be inclusive of lesbians (Wolff, Wells, Ventura-DiPersia, Renson, & Grov, 2017). Learnings from this study may inform which types of changes are needed in nondiscrimination policies and practices to enhance inclusivity, reduce minority stress, and eliminate the disparity. Doing so can improve human and social

conditions for lesbians considering parenting. Changes from the public health perspective would be evidence of positive social change by reducing or eliminating barriers that lesbians face in seeking ART to create their families. Changes that assure quality and accessibility of health services, including ART, for an underserved population make this a matter of public health.

Summary

Disparities that contribute to minority stress may adversely affect outcomes, making this a matter of public health, but there is a shortage of literature on this topic. In the current study, I explored the predictive relationship between insured status, perceived stress, and parental status, controlling for self-identification. I compared the difference in ART experience among lesbians and nonlesbians using FertiQoL. I also examined the difference in the degree of outness among lesbians with and without children using the ALIDA-II.

In this chapter, I introduced the study with some background, described the problem statement and study purpose, and provided the research questions and hypotheses, the theoretical framework, the nature of the study, definitions used, assumptions, the study's scope, limitations, and significance of the study. In Chapter 2, I provide a review of the literature to support the study. Topics focus on aspects that may contribute to minority stress and disparities for lesbians, including access (and barriers) to health care (and ART), general knowledge about fertility, the process for documenting infertility, legal matters and considerations that are unique to same-sex families, studies on the alternative insemination experience, evidence around internal and external

homophobia, the importance of a support network for lesbians and their families, and literature related to the changing nature of family. The review of the literature provided a framework for identifying factors that contribute to minority stress along with a glimpse into the lesbian experiences that create disparate impacts when it comes to considering or experiencing ART. The lack of literature similar to the current examination was evident.

Chapter 2: Literature Review

Introduction

There is an assumption that women who want children can have them and that those who do not have children do so by choice (Polis & Zabin, 2012). However, the ability to have children represents more than a QoL issue (Davies et al., 2017; Marvel et al., 2016; Warner et al., 2015). Individuals and couples who face fertility challenges may experience adverse social, economic, psychological, and physical effects (Warner et al., 2015). The National Survey of Family Growth reported that 12% of reproductive-aged women had experienced difficulty conceiving or carrying a pregnancy to term during their lifetime (Chandra et al., 2013; Warner et al., 2015). Further, nonstandard family units, including single women, unmarried heterosexual couples, and lesbian and gay couples, have benefited from fertility programs (Alencar Albuquerque et al., 2016; De Wert et al., 2014; Petersen, 2002). But there may be disparities in insurance coverage, access to services, and treatment options for same-sex partners, making this a matter of public health (Park et al., 2016).

Within U.S. society, there has been a shift in the ethical debate about the definition of family. Results from the National Survey of Family Growth (2002 and 2006–2010) estimated that 1.3% of nearly 16,000 women aged 20–44 years were lesbian. Of these, roughly 23% were parents versus 68% of heterosexual women and 56% of bisexual women (Brewster, Tillman, & Jokinen-Gordon, 2014). Research has repeatedly shown that children raised in alternative families fare as well as those from traditional families (Bos, van Gelderen, & Gartrell, 2015; Fedewa, Black, & Ahn, 2015; Richards,

Rothblum, Beauchaine, & Balsam, 2016). However, this population continues to face additional burdens when seeking health care (De Wert et al., 2014; S. K. Mishra, 2014; Pennings, 2015), and lesbians potentially face a lack of equal opportunity for childbearing (Tasker & Patterson, 2007). The additional emotional and mental health consequences lesbians experience make this a matter of public health (Hatzenbuehler et al., 2013; Pratesi, 2012; Thomas, Quinn, Butler, Fryer, & Garza, 2011).

As a minority, women who identify as lesbians experience stigma and stress, which has an inverse association with aspects of health (Robinson et al., 2017; Simoni et al., 2017). Looking across health indicators by sexual orientation, lesbians have reported increased health risks (Baams, Grossman, & Russell, 2015; Estrich, Gratzer, & Hotton, 2014; Fredriksen-Goldsen, Emlet et al., 2013; Fredriksen-Goldsen, Kim, Barkan, Muraco, & Hoy-Ellis, 2013; N. Hsieh & Ruther, 2016; Lindley et al., 2013; Shindel et al., 2012). Behaviors like smoking, excessive drinking, and being overweight/obesity appeared to contribute to poorer health among lesbians (Fredriksen-Goldsen, Kim et al., 2013; Simoni et al., 2017). Research has also shown that lesbians have a higher risk of cardiovascular disease and disability and higher rates of poor mental health (Fredriksen-Goldsen, Kim et al., 2013; Fredriksen-Goldsen, Kim, Barkan, Balsam, & Mincer, 2010). However, the assumption that lesbian health is women's health does not consider the unique health risks and health care needs of lesbians (Hayman, Wilkes, Halcomb, & Jackson, 2015; Hayman, Wilkes, Jackson, & Halcomb, 2013). Thus, an intersectional approach can be used to understand multidimensional populations that have a mix of

social identities, which may include gender, race/ethnicity, and sexual orientation (Colpitts & Gahagan, 2016; N. Hsieh & Ruther, 2016; Logie & Rwigema, 2014).

An intersectional approach to research is needed to characterize the impact of minority stress experienced by lesbians and members of the gay community (Max, Stark, Sung, & Offen, 2016), especially regarding parenting and fertility. Choosing to become a mother through birthing, surrogacy, co-parenting, or adoption is deeply personal for all women (Riskind et al., 2013). The decision to attempt in vitro fertilization (IVF) or utilize ART does not guarantee pregnancy, and not all pregnancies result in live births (Dar et al., 2015; Dembinska, 2012; Eyler et al., 2014). The process can be lengthy, expensive, and stressful on the individual as well as the couple's relationship, regardless of sexuality (Borneskog, Lampic, Sydsjö, Bladh, & Svanberg, 2014; Borneskog et al., 2012). Though lesbian mothers may share some of the norms of daily life with other moms, they are marginalized due to their nonheterosexual identity (Hayman, Wilkes, Jackson et al., 2013). Lesbians who are considering or seeking reproductive assistance may be at increased risk for experiences of stigma and stress (Schwartz & Baral, 2015).

More research is needed to familiarize health care professionals with the unique concerns and challenges of lesbian family planning (Lo et al., 2016). The choice to become a parent may be affected by social capital and subject to public opinion, particularly for lesbians (Hatzenbuehler et al., 2013; Rozental & Malmquist, 2015). One of the most critical questions for this and future studies is to identify which factors shape the parenting decision-making of lesbians (Mezey, 2013). This study was intended to explore how minority stressors and discriminatory barriers, whether real or perceived,

were associated with the health and behavior of lesbians compared with nonlesbians in the context of considering parenting and among those with experience seeking assisted reproduction (see Fredriksen-Goldsen et al., 2010). There is no literature on the consequences of minority stress and added burdens for this sexual minority (Schwartz & Baral, 2015). This research is necessary to improve public health (equal access to reproductive choices) and reduce minority stress (Averitt Taylor, 2014).

This chapter provides a comprehensive review of current literature related to lesbian health disparities and the health care experience as well as aspects women may consider in making decisions about parenthood. This assimilated review provides a basis for the study. Publications supporting the use of minority stress as a theoretical framework to assess whether sociocultural status, socioeconomic status, heteronormative or homonegative experiences are contributing factors were included (Balsam et al., 2013; Hayman, Wilkes, Halcomb, & Jackson, 2013; Head & Noar, 2014; N. Hsieh & Ruther, 2016; Knight et al., 2013; Marques et al., 2015; Röndahl et al., 2009; Utamsingh et al., 2016). Also included was literature that supports the successful use of Internet-based surveys in this population.

Literature Search Strategy

I selected peer-reviewed journal articles for creating this literature review and included alternative publications from agencies considered to be field experts (e.g., CDC). Search sources included Google Scholar, PubMed, LGBT Life, MaryAnn Liebert Publishers, CINAHL, Cochrane Database of Systematic Reviews, MEDLINE, SocINDEX, and the CDC. Utilizing these sources, I was able to identify and access

documents via the Walden University Library, academic, government, or other institutional websites.

I utilized keyword searches to identify articles relevant to the current study. These included but were not limited to *epidemiology, heteronormative/homonegative, lesbian, health, healthcare access, provider attitudes, quantitative, survey, repro*/reproduction, fertility, infertility, same-sex/sexual orientation/ID, lesbian parent/mother, non-biological parent, insurance/insured status, cost of fertility,* and *ethics*. My search also included keyword phrase combinations. As an example, a PubMed term searching yielded the following (number of relevant articles):

- CDC_fertility (two)
- Epi_Lesbi_Health_Repro (87)
- Heteronormative_Homonegative (22)
- Lesbian_Health_Disparit* (10)
- Lesbian_Quant_Parent (six)
- Lesbian_Relationship (three)
- Lesbian_Repro* (87)
- Lesbian_Survey_*fertil* (eight)
- Reproduct*_Lesbian_Attitudes (25)
- Sex ID_Survey (two)
- Stress_Lesbian_Health (four)

Criteria for Inclusion

A source or literature article was included based on consideration of the following:

1. The source was contemporaneous and published within the time frame of 2013 to present. Older publications were incorporated based on the lack of more current articles confirmed by adjusting the search date window (expanded and narrowed, e.g., 2014, 2012, 2010, unlimited).
2. The literature source was peer reviewed or published by a reliable agency with expertise in the topic area.
3. The literature source was considered relevant to the research topic, population of interest, research method, or research questions.
4. The literature source was in English.

Exclusion Criteria

The following exclusion criteria helped to ensure the literature review was accurate and reflective of the topic:

1. The source failed to meet any of the inclusion criteria.
2. The literature source was redundant with other references included in the review.
3. The publication failed to represent or align with the planned research parameters.
4. In general, the literature source lacked quality.

Theoretical Framework

One reason to utilize theory in research is so evidence-based learning can be used in a systematic approach to decision-making and to improve policy (French et al., 2012; Montano & Kasprzyk, 2015). This rationale supports fertility-related research in general and when considering those who are part of a sexual minority such as members of the LGBT community (N. Hsieh & Ruther, 2016; Lo et al., 2016). Despite the use of theories, there is still a gap in translation of evidence from clinical research into routine practice by health care professionals (French et al., 2012; Head & Noar, 2014). Previous studies have described the conversion of fertility intention to behavior but not for the lesbian population (Bachrach & Morgan, 2013; N. Hsieh & Ruther, 2016; Lo et al., 2016).

For this study, the theory that contributed to the conceptual framework was minority stress (Montano & Kasprzyk, 2015). Minority stress has been well studied among sexual minorities, including lesbians. Minority stress has been used to study health-related behaviors such as cervical cancer screening, tobacco use, alcohol or drug addiction/education, condom use, and intention to exercise (Baams et al., 2015; Head & Noar, 2014; Tracy et al., 2013). Researchers have also applied minority stress in examining practitioner attitudes and behaviors, which may be a factor in the lesbian health care experience (Lo et al., 2016; Simoni et al., 2017; Thomas et al., 2011). However, minority stress has not been evaluated among lesbians deciding to become parents or to seek assisted reproduction (Homma, Saewyc, & Zumbo, 2016; N. Hsieh & Ruther, 2016; Lee et al., 2016). There is no evidence of quantitative research to examine

fertility intentions or actions/outcomes focused on lesbians (Ajzen & Klobas, 2013; Head & Noar, 2014; Mencarini et al., 2015). In the present study, I explored sociocultural and socioeconomic factors like perceived stress and insured status as indicators of minority stress for the predictive relationship with parenting status among lesbian and nonlesbian women.

Minority stress theory suggests that population subsets, such as lesbians, may have a disproportionate risk for mental and physical health conditions due to their minority status (Baams et al., 2015; Lee et al., 2016; Lick, Durso, & Johnson, 2013; Meyer, 2015). For example, literature has described lesbians as having an increased risk for certain conditions (Lindley et al., 2013; Malterud et al., 2009; Rostosky et al., 2016; Schwartz & Baral, 2015). Additionally, lesbians may lack access to insurance/health care coverage as a result of discrimination policies (Balsam et al., 2013; Rostosky et al., 2016). Heteronormative and homonegative behavior within the health care setting are also part of the structural stigma that contributes to minority stress (Hayman, Wilkes, Halcomb, & Jackson, 2013; Knight et al., 2013; Law, Mathai, Veinot, Webster, & Mylopoulos, 2015; Marques et al., 2015; Röndahl et al., 2009; Tarasoff, Epstein, Green, Anderson, & Ross, 2014; Utamsingh et al., 2016). Lesbians are likely to experience minority stress when seeking ART (Balsam et al., 2013; Fredriksen-Goldsen, Kim et al., 2013; Hatzenbuehler et al., 2013; S. K. Mishra, 2014). Experiences can affect self-efficacy, perceived susceptibility to bias, discrimination, judgment, and possible differences in quality of care or availability of treatment options (Eyler et al., 2014; N. Hsieh & Ruther, 2016; Lo et al., 2016; Logie & Rwigema, 2014; Ross et al., 2014).

The PSS was introduced by Cohen et al. in 1983 as a psychometrically valid instrument to measure perceived stress. Before the PSS, there was a lack of objective and subjective measures to meaningfully gather information about the relationship between stress and disease pathology. The perception of stress may increase disease risk and influence physical disease pathogenesis by contributing to feelings of anxiety and depression (Cohen & Janicki-Deverts, 2012). Stress impacts QoL, health intentions, and behaviors, which supports the use of the PSS as a measure in the current study. Three versions of the PSS are in use (PSS-4, PSS-10, and PSS-14) and have been translated and validated across a range of population subsets (Cohen, Janicki-Deverts, & Miller, 2007; Cohen & Janicki-Deverts, 2012; Cohen et al., 1983). Though the initial study used phone interviews (Cohen et al., 1988), most of the subsequent works have utilized an Internet survey (Nielsen et al., 2016). The PSS-14 was used (with permission) to assess perceived stress among lesbians and nonlesbians.

Environmental stigma and discriminatory policies and practices have a direct effect on the psychological response to stress (Baams et al., 2015; Puckett et al., 2017). Experiences like these lead to excessive health risks, which are a matter of public health (Bogart et al., 2014; Quinn et al., 2015; Rozental & Malmquist, 2015). In challenging previous cultural norms within the health care experience, particularly in the realm of assisted reproduction, lesbians are contributing to breaking boundaries with new approaches to medical practice emerging (Corbett, Frecker, Shapiro, & Yudin, 2013; Eyler et al., 2014). Additional research, like the information learned from this study, will

provide the evidence needed for bringing about positive social change for lesbians considering parenthood and seeking assisted reproduction.

Parenting Decision: Lesbians Considering Parenthood

Identity theory and symbolic interaction can shape the meaning of parenthood for individuals, couples, and society (Gates, 2015). Choosing childlessness has slowly grown to be acceptable (Gobbi, 2013; Polis & Zabin, 2012). The heteronormative assumption has been that anyone who wants a child should and can have one, and those who do not have a child should want to (Daniluk & Koert, 2013; Daniluk, Koert, & Cheung, 2012; Lo et al., 2016). But this attitude diminishes the experience of fertility and reproductive options like IVF or ART (Eggert, Engeli, Patternote, & Tremblay, 2015; Polis & Zabin, 2012).

Reproductive health practitioners may overlook the unique needs of lesbians as a sexual minority (Blanchfield & Patterson, 2015; S. M. Johnson, 2012; Schwartz & Baral, 2015). Lesbians may experience stigma and stress, which can adversely impact health and marginalize lesbians and their families (Power et al., 2010; Shields et al., 2012). The desire to parent drives women, including lesbians, to seek reproductive assistance. However, more research is needed to assess the unique reproductive needs of lesbians (Baiocco & Laghi, 2013; Blondeel et al., 2016; Hayman, Wilkes, Jackson et al., 2013; N. Hsieh & Ruther, 2016; Munson & Cook, 2016).

A variety of factors are associated with the decision of any woman, including those at the margin, to have children or remain child-free (Henehan, Rothblum, Solomon, & Balsam, 2007; Polis & Zabin, 2012; Schwartz & Baral, 2015; Wall, 2013). For

lesbians, personal issues may include internalized heterosexism or homophobia and feelings about the need to come out or self-identify as a lesbian in the process (Chapman et al., 2012; Rozental & Malmquist, 2015). Also, there are potential risks (personal, professional, societal) to be considered (Puckett et al., 2017). Access to a network of support, intimate relationship status, and work-related issues may factor in along with race/ethnicity, socioeconomic status, and gender/sexual orientation (Costa & Bidell, 2016; Grafsky & Steelman, 2015).

According to a publication by Perrin, Siegel, and the Committee on Psychosocial Aspects of Child Family Health of the American Academy of Pediatrics (2013), existing lesbian mothers reported concerns about whether the community would acknowledge their relationship. Others found that this experience may vary depending on where the same-sex parented family lives (Biblarz & Savci, 2010; Gates, 2015; Grafsky & Steelman, 2015). The concern about being received as a family within a community may influence the choices and experiences of women seeking reproductive assistance (Hayman, Wilkes, Halcomb et al., 2013; Hayman, Wilkes, Jackson et al., 2013; Yager, Brennan, Steele, Epstein, & Ross, 2010).

Lesbians were unrecognized as legally married before 2015. They lacked on par legal recognition, which may have prevented same-sex partners from accessing benefits like health insurance and fertility coverage (Buchmueller & Carpenter, 2010; Buffie, 2011; Greenfeld & Seli, 2016; Gutiérrez & Suárez Becerra, 2012; Rostosky et al., 2016). The cost of medically assisted reproduction is high and can be a source of stress (Kissin et al., 2016; A. K. Wu, Odisho, Washington, Katz, & Smith, 2014; Wykes, 2012; Yager

et al., 2010). The disparity in access to insurance or fertility coverage unique to lesbians compared with nonlesbian counterparts may compound the experience of minority stress (Blanchfield & Patterson, 2015; Kissin et al., 2016; Macapagal et al., 2016; Murphy, 2015; Schwartz & Baral, 2015; Sunderam et al., 2015).

In addition to the potential financial burden, the experience of the clinic environment and interactions with staff may have an adverse association with the stress or comfort level of lesbians in this process (Carrotte et al., 2016; Colpitts & Gahagan, 2016; Corbett et al., 2013; Dean et al., 2016; Fish & Williamson, 2016; Hayman, Wilkes, Halcomb et al., 2013; Hayman, Wilkes, Jackson et al., 2013; Heyes, Dean, & Goldberg, 2016; Heyes & Thachuk, 2015; Knight et al., 2013; Lee et al., 2016; Macapagal et al., 2016; Marques et al., 2015; McManus, Hunter, & Renn, 2006; Quinn et al., 2015; Röndahl et al., 2009; Ross et al., 2014; Utamsingh et al., 2016). It is still common practice to assume heterosexuality, as is evident on intake forms. Also, asking lesbian couples “who is the mother?” adds evidence that societal norms have not yet shifted (Hayman, Wilkes, Jackson, & Halcomb, 2013). There are research gaps in exploring the association between health/reproductive care and the LGBT family experience within society (Chapman et al., 2012).

Choosing Parenthood

There is a range of considerations for lesbians considering parenthood (Hull, 2016; Polis & Zabin, 2012; Ravelingien et al., 2015; Rostosky et al., 2016; Wojnar, 2007; A. Wu, Elliott, Katz, & Smith, 2013; A. K. Wu et al., 2014; Yager et al., 2010). Aside from who will carry and how they will become parents, lesbians likely think about the

support system available throughout the process (Reed, Miller, Valenti, & Timm, 2011; Vanfraussen, Ponjaert-Kristoffersen, & Brewaeys, 2003; Wall, 2013). While many questions are familiar to all potential parents, some are faced uniquely by lesbians as a sexual minority. Considerations include and are not limited to the following: Is the couple legally married, or able to be? Do they have adequate health insurance? Is fertility coverage a benefit under the plan, and if so, what are the coverage limits (Hamilton & McManus, 2012)? Does the policy provide coverage for same-sex partners? Does it cover fertility for same-sex couples? Is there a nearby fertility clinic or supportive practice? Should they consider cross-border reproductive care (Ethics Committee of the American Society for Reproductive Medicine, 2013b)? What is the impact on work time? Is there parental leave for one or both parents? How will QoL be affected through the process? Is the community where they live likely to be supportive? Will there be other parents and children for their family to relate to? Will the schools support the family as a whole and the child as an individual (A. Goldberg, Moyer, Black, & Henry, 2015; Perrin et al., 2013; Rostosky et al., 2016; Vanfraussen et al., 2003; Vonk, 2004; Wall, 2011)?

Among considerations in the decision-making process for lesbian couples is who will conceive and bear the child/children (Bos, 2013; Costa & Bidell, 2016; Somers et al., 2017). Theoretically, each partner could give birth, and in a relatively small percentage of couples, this has been the case, often with the older woman giving birth first (Baetens, Camus, & Devroey, 2003; Somers et al., 2017). A desire to experience pregnancy and childbirth and to have a genetic connection have been reported as reasons why lesbians pursue ART over adoption (A. Goldberg & Allen, 2012; A. Goldberg & Scheib, 2015;

Peel, 2010; Pennings, 2015; Somers et al., 2017). Age and employment status reportedly factor into deciding who will attempt pregnancy (Bos, van Balen, van den Boom, & Sandfort, 2004). Lesbians have unique considerations that their heterosexual counterparts likely do not face.

Bos (2013) compared lesbian mothers who did get pregnant with those who did not. The former group spent more time thinking about why they wanted to become mothers, expressed the feeling that they needed to "give up almost everything" to get pregnant, and more frequently equated parenthood with life fulfillment. This evidence suggests that the hurdles are high and only those most determined will succeed, which contradicts the idea of equal access within the framework of public health (Campbell, 2013; Germanos, Deacon, & Mooney-Somers, 2015; Kissin et al., 2016; Massetti, Ragan, Thomas, & Ryerson, 2015).

Health Care and Reproduction: Lesbian (Heteronormative and Homonegative) Experiences of Access and Barriers

Farrow (2015) defined heteronormativity as "the mundane production of heterosexuality as the normal, natural, taken for granted sexuality" (p. 26), further describing how this leads to exclusion and marginalization of those who are nonheterosexual. Heteronormativity plays out in every aspect of society, including the health care experience. Health risks and health outcomes are known to be affected by sexual minority health experience, including access to health care (N. Hsieh & Ruther, 2016). Members of the LGBT community lack access to health care and disclosure of sexual orientation can adversely impact the health care experience (Carrotte et al., 2016;

Eliason, 2014; Farrow, 2015; Germanos et al., 2015; Homma et al., 2016; Law et al., 2015; Lee et al., 2016; Macapagal et al., 2016; Quinn et al., 2015; van Dam, 2014). Reasons for lack of access may include poverty, gender-specific care, insurance ineligibility (marriage inequality), or fear of disclosure, all potentially leading to derogatory experiences or refusal of care by providers. Researchers have studied the experience of stigma as a barrier at an individual level, but a gap remains in assessing the association of societal conditions (policies and practices) on health outcomes for stigmatized groups (Hatzenbuehler et al., 2013; Massetti et al., 2015).

A publication from the Ethics Committee of the American Society for Reproductive Medicine (2013b) noted that there is no evidence to support restricted access to ART and that all programs should treat requests equally regardless of marital status or sexual orientation. Objection to homosexuality or single parenthood on moral grounds is not an acceptable reason for limiting access to reproduction (Alencar Albuquerque et al., 2016; Baiocco & Laghi, 2013; Cannold & Gillam, 2002; De Wert et al., 2014; Mathieu, 2013). There is no confirmation of these equal access theories. In fact, Durso and Meyer (2013) examined the predictors and patterns of sexual orientation disclosure to health care providers among lesbian, gay, and bisexual adults and found that bisexual men and women had higher rates of nondisclosure than lesbians or gay men (Durso & Meyer, 2013). The present study gathered some data on if and how equal access is a challenge based on the lesbian experience.

Knowledge About Fertility and Infertility

Most adults have a basic understanding of human reproduction (Daniluk & Koert, 2013; Daniluk et al., 2012; Kerr, Ding, & Thompson, 2013; Lundsberg et al., 2014; H. Y. Wu et al., 2016). Yet, a 2013 cross-sectional study of 1,000 women aged 18–40 years found that one-third were unaware that sexually transmitted infections, obesity, and irregular menses could impact fertility, and around 40% were unclear about the ovulatory cycle (Lundsberg et al., 2014). In publications by Daniluk et al. (2012) and Daniluk and Koert (2013), the authors reported that a fertility and ART knowledge gap exists among adult men and women who were childless. Awareness of the fertility life-span and the costs and limitations of ART treatment is essential to making informed childbearing decisions (Daniluk & Koert, 2013; Daniluk et al., 2012; S. K. Mishra, 2014; A. Wu et al., 2013). According to Daniluk and Koert (2013), the potential psychosocial and health consequences of delaying childbearing present an urgent need for targeted public education to enhance fertility and ART awareness (Ethics Committee of the American Society for Reproductive Medicine, 2013b; Wall, 2013).

S. Nordqvist et al. (2014) reported that sexual orientation did not seem to affect fertility treatment outcomes using donor sperm. The researchers noted, however, that lesbians had increased health risks, including smoking and obesity, likely to impact fertility success (Blondeel et al., 2016; Bränström, Hatzenbuehler, Pachankis, & Link, 2016; Estrich et al., 2014; Fredriksen-Goldsen, Kim et al., 2013; N. Hsieh & Ruther, 2016; McPhail & Bombak, 2015). Both lesbians and heterosexual women may

experience these health risks, but an examination of the association with parenting decision and reproductive choices is lacking.

Reproductive centers and individual practitioners may still deny treatment to lesbians (Dean et al., 2016; Dembinska, 2012; Eyler et al., 2014; K. M. Johnson, 2012; Záchia et al., 2011). Whether this reflects a gap in the medical school curriculum or is a matter of inadequate practitioner training does not matter since the potential for adverse impact is the same (De Wert et al., 2014; Marques et al., 2015; Nordstrand, Nordstrand, Nortvedt, & Magelssen, 2014; Parameshwaran, Cockbain, Hillyard, & Price, 2016; Stott, 2013). Factors like this have led to same-sex couples seeking reproductive assistance abroad, adding to the disparity and burden (Ethics Committee of the American Society for Reproductive Medicine, 2013b; Inhorn & Patrizio, 2015). Denial of equal opportunity creates a double standard, which is unacceptable under the tenets of public health (Bradt, Vandenbroeck, Lammertyn, & Bouverne-De Bie, 2015; Bränström et al., 2016; Campbell, 2013; Germanos et al., 2015; Kissin et al., 2016; Massetti et al., 2015; McPhail & Bombak, 2015; Sunderam et al., 2015).

Documenting Infertility

Heterosexual couples may seek IVF or ART after failed attempts at natural conception. The threshold is 6–12 months of unsuccessful attempts (Practice Committee of the American Society for Reproductive Medicine, 2013). Only then can a fertility workup be initiated to determine if there is a biological explanation (male or female; Seifer, Sharara, & Jain, 2013; Sejbaek, Hageman, Pinborg, Hougaard, & Schmidt, 2013; Stevenson & Sloane, 2017). For lesbians, this documentation requirement is not

applicable and represents an undue burden from the start, delaying more aggressive options. Age and reproductive health history are also factors to be considered (Borneskog, Lampic, Sydsjö, Bladh, & Svanberg, 2014; Borneskog et al., 2012; Charlton et al., 2011; Peel, 2010; Pivetti & Melotti, 2013; H. A. Smith et al., 2011; Sunderam et al., 2015; Tarín et al., 2015). Fertility treatment is expensive and invasive and can continue for many months or years, and the levels of associated stress can have an impact on outcomes (Stevenson & Sloane, 2017). Forcing a universal qualification and conservative stepwise approach for all women creates an undue burden on nonheterosexual women.

A meta-analysis by Robinson et al. (2017) found no statistically significant difference among lesbian, bisexual, or heterosexual women in conditions that could affect fertility (polycystic ovarian syndrome, endometriosis, and fibroids). The authors acknowledged that little is known about the reproductive health of lesbians and suggested that monitoring sexual orientation in research (with validated methods) could provide more evidence (see also H. A. Smith et al., 2011). The lack of research in the area of lesbian couples utilizing ART means that overall numbers and reproductive decisions are unknown (Carpinello et al., 2016; Robinson et al., 2017). This study contributes to closing the research gap by providing quantifiable evidence that encourages structural changes in policy and practice to allow for future inclusion of lesbians in such data sets.

Some reproductive centers do not treat unmarried or same-sex couples (Ethics Committee of the American Society for Reproductive Medicine, 2013a). If insured, qualification for benefits may require demonstration of infertility, even though lesbians

do not fit the traditional model for pregnancy attempts (Buchmueller & Carpenter, 2010). The lack of updated policies and practice creates additional procedures and burdens for lesbians with increased out-of-pocket expenses and time (A. Wu et al., 2013; A. K. Wu et al., 2014). According to Carpinello et al. (2016), we need further studies to understand why, in their investigation, one-fifth of patients decided not to seek treatment. One of the research questions explored the association between factors measured and the decision not to pursue reproductive assistance.

Legal Matters

Marvel et al. (2016) described how the steps of ART are cumbersome and expensive. Lesbians are particularly vulnerable to legislative gaps and judicial decisions that do not account for their particular needs. Though same-sex marriage has gained equality in the United States and globally, this does not ensure equal parental rights to same-sex couples, particularly when crossing state or national boundaries (A. Goldberg & Allen, 2012). Despite a feeling of achieving a heartfelt goal in becoming pregnant, lesbian families are now faced with matters of legal uncertainty to guard against (Hull, 2016). Our systems are still obviously entrenched in traditional gendered mother and father terms, as evidenced by numerous intake forms (Brown, 2014). A shift to parent and parent would be simple, be more inclusive, and legitimize the mutual relationship of the non–birth mother (Hayman, Wilkes, Halcomb et al., 2013; Hayman, Wilkes, Jackson et al., 2013). Facing these obstacles, barriers, and challenges creates an undue burden on lesbians and other same-sex couples and their families (O'Neill, Hamer, & Dixon, 2012). A system that perpetuates this sort of disparity is contrary to public health.

Minority stress experiences of lesbians extend beyond fertility treatment and becoming a parent (Marques et al., 2015). Farrow (2015) described how heteronormativity leads to social exclusion and marginalizes nonheterosexuals. Röndahl et al. (2009) also noted that heteronormative behavior persists in the realm of postnatal care. There is a need for updating the health care culture to better care for all lesbian patients (Farrow, 2015; Hayman, Wilkes, Halcomb, & Jackson, 2013; Marques et al., 2015; Utamsingh et al., 2016). Prenatal, postnatal, and parental provisions overall should be updated to reflect present-day families (Bogenschneider, 2014; A. Goldberg & Allen, 2012; A. Goldberg & Smith, 2014; Röndahl et al., 2009; Wells & Lang, 2016). Evidence from this study would support this necessary change.

Legal uncertainty can create imbalance and inequality in same-sex parent couples (Butterfield & Padavic, 2014; Patterson, 2017). Unfortunately, this becomes even more significant when a couple decides to dissolve their relationship (A. Goldberg et al., 2015). For many years, lesbians lacked legal recognition of their partnership, let alone their parental relationship (Hayman, Wilkes, Jackson et al., 2013). Despite the progress made to date recognizing same-sex marriage, there may not be the same assurance of recognition for a nonbiologic parental relationship (Crouch, McNair, Waters, & Power, 2013; Hull, 2016). Protection of the parent–child relationship is vital for same-sex families and should not vary or be at risk depending on where they live, move to, or travel (De Wert et al., 2014; S. Goldberg, 2015). Park et al. (2016) examined the impact of the law on the choice of method to become parents, the decision on where to live, and the experience of family recognition among gay, lesbian, and bisexual parents in

California and Nebraska. They found that laws as well as the perception of legal barriers influenced parenting choices among those interviewed. Civil unions, marriage, and political and social policies impact same-sex relationships and influence couples' parenting and reproductive decisions (Buffie, 2011; S. Goldberg, 2015; Hull, 2016; Johnsen, 2015; Marina et al., 2010; Park et al., 2016; Patterson, 2017).

Exploring the relationship between sexual orientation and ART experiences among lesbians may inform a comprehensive understanding of the unique reproductive needs of this population (Black & Fields, 2014; Blanchfield & Patterson, 2015; Borneskog, Lampic, Sydsjö, Bladh, & Svanberg, 2014; Borneskog, Sydsjö, Lampic, Bladh, & Svanberg, 2013; Borneskog, Lampic, Sydsjö, Bladh, & Skoog Svanberg, 2014; Hayman, Wilkes, Halcomb et al., 2013; P. Nordqvist, 2011; Pratesi, 2012; Wyverkens et al., 2014). Extending beyond reproduction, lesbians may face minority stress in caring for their families. As a matter of public health, the Health Insurance Portability and Accountability Act should ensure equal same-sex parental recognition, access to health information, and authority for decision-making (Hayman, Wilkes, Jackson, & Halcomb, 2013; Marques et al., 2015; Park et al., 2016; L. Smith, 2013). Once lesbians have successfully navigated the path to parenting, they then need to identify suitable health care relationships for their children with pediatric providers (Dahl et al., 2013; Kuvalanka, Leslie, & Radina, 2014; Shields et al., 2012).

The Alternative Insemination Experience

The term *artificial insemination* has been replaced with *alternative insemination* to describe the nontraditional, nonheterosexual methods of conception. This terminology

has been in use since the 1980s at clinics where lesbians were able to seek reproductive assistance (Chicago Women's Health Center, 2017; Henry, 1993; Mayer, 2014). In a review of the literature, Tarín et al. (2015) summarized the reported success rates of lesbians who underwent reproductive assistance via donor intrauterine insemination (IUI), IVF, and the freeze/thaw cycle of IVF. This work was novel in describing outcomes and exploring potential factors associated with infertility (H. A. Smith et al., 2011; Tarín et al., 2015). The fact that lesbians must follow the same stepwise interventional pathway to assisted reproduction, despite any evidence of being medically infertile, contributes to minority stress (Hodson et al., 2017). Some couples may desire a more aggressive approach to becoming pregnant, even though less invasive methods help manage cost and risk (Carpinello et al., 2016; Charlton et al., 2011; Dar et al., 2015; Eyler et al., 2014; Greenfeld & Seli, 2016; Lawrence, Rasinski, Yoon, & Curlin, 2010; Marvel et al., 2016; Mathieu, 2013; S. K. Mishra, 2014; Záchia et al., 2011). Insurance coverage often dictates what evidence is required to move to the next level of treatment. These outdated guidelines were meant to guide treatment of traditional heterosexual couples, but lesbians may benefit from a more progressive approach.

Beginning with methods that are least invasive, intracervical insemination (ICI) is the simplest and can be attempted at home using donated sperm (It's Conceivable, 2017). IUI (insertion of sperm closer to the Fallopian tube) may be the next level following ICI (Cantineau, Janssen, Cohlen, & Allersma, 2014). More aggressive methods may be considered only after multiple failed attempts (Chavkin, Molinaro, Roe, Sammel, & Dokras, 2012). With each reproductive cycle, there are numerous clinic visits for

monitoring hormonal blood levels (Wiser et al., 2012). If using fertility medications, there is the burden of administration as well as cost (Pandey et al., 2014). With each failed attempt, another cycle must usually pass before trying again (Carpinello et al., 2016; Carroll & Palmer, 2001; Chavkin et al., 2012; Wiser et al., 2012; A. Wu et al., 2013; A. K. Wu et al., 2014). Age is a factor that may affect the likelihood of success, and each unsuccessful attempt adds to the time, cost, and stress (Black & Fields, 2014; Borneskog, Lampic, Sydsjö, Bladh, & Skoog Svanberg, 2014; Chapman et al., 2012; Corbett et al., 2013; Hayman, Wilkes, Halcomb et al., 2013; Hayman et al., 2015; Hayman, Wilkes, Jackson et al., 2013; Wojnar, 2007; A. Wu et al., 2013; A. K. Wu et al., 2014; Yager et al., 2010).

The timing of when to introduce hormonal treatments into the process also depends on age and assessment of the potential risks and benefits (Tjon-Kon-Fat et al., 2015). Stimulation for egg retrieval procedures may be required on more than one occasion, depending on yield (Yeshua, Lee, Witkin, & Copperman, 2015). Once eggs have been retrieved, IVF or intracytoplasmic sperm injection (ICSI) is used to introduce the sperm to the egg (Collins, 2017; De Brucker et al., 2014). Embryos are selected based on general appearance and health for delivery with the hope of successful implantation (De Brucker et al., 2014). Each advanced stage of treatment is an increase in burden (emotions, time, effort, expense; Collins, 2017; Shalev, 2016; Yeshua et al., 2015).

Couples who lack success in these attempts face more aggressive options and may choose to use an egg donor (known or unknown) or decide to stop trying (Craig et al., 2014; Greenfeld & Seli, 2016). Cost is a factor in this decision, along with time and

emotional expense (Pennings, 2015; Pratesi, 2012; A. K. Wu et al., 2014). While many insurance carriers have provisions for treating infertility, the benefits vary greatly (Hamilton & McManus, 2012; Jouannet & Spira, 2014; Murphy, 2015). There are often caps on allowable expenses, and fertility medication costs are high and must be obtained from specialized pharmacies, thereby limiting the number of attempts (Craig et al., 2014; Hamilton & McManus, 2012; Kissin et al., 2016). In some cases, there is no coverage for the procedures at all if the woman is beyond a particular upper age limit (Hamilton & McManus, 2012). Insurance coverage may be even more limited for aggressive or higher risk treatment options, such as the use of donor eggs (whether cycled real-time for retrieval or from an egg bank), if they are covered at all. These insurance restrictions result in more significant out-of-pocket expenses (Blanchfield & Patterson, 2015; Hamilton & McManus, 2012; Kissin et al., 2016; Murphy, 2015; Sunderam et al., 2015; A. Wu et al., 2013; A. K. Wu et al., 2014). A lesbian couple underinsured or without coverage for ART could potentially invest as much as $30,000–$40,000 in a single attempt at achieving pregnancy (Carpinello et al., 2016; Craig et al., 2014). These high hurdles contribute to minority stress and represent potential disparity if same-sex couples are insured differently than their heterosexual counterparts.

In addition to the procedural elements, there are psychological components to be considered (Greenfeld & Seli, 2016; Huppelschoten et al., 2013). The concept of sharing motherhood has been growing as more same-sex couples bear children (Marina et al., 2010; Zeiler & Malmquist, 2014). Even if the decision on biology was easy to make, there are emotional considerations related to the nonbiological parent in this process

(Greenfeld & Seli, 2016; Huppelschoten et al., 2013; Pratesi, 2012; Suter, Kellas, Webb, & Allen, 2016). For example, administering daily multiple injections to a partner can have a psychological toll. As Cherguit, Burns, Pettle, and Tasker (2013) noted, dealing with a highly hormonal partner through the ART experience can strain a relationship despite the shared goal. There can be feelings of helplessness and of being an outsider despite efforts at inclusion (McKelvey, 2014; White, 2015; Wojnar & Katzenmeyer, 2014). Same-sex couples are often somewhat alone in maneuvering the medical process, the insurance and financial elements, and the emotional aspects, with or without a network of support (Cherguit et al., 2013; Eggert et al., 2015; Kazyak, Park, McQuillan, & Greil, 2016; McKelvey, 2014; White, 2015; Wojnar & Katzenmeyer, 2014).

Fertility Quality of Life

The FertiQoL is a reliable measure of the impact of fertility and treatment on QoL. This tool has been used by men, women, professionals, companies, and researchers to understand the impact of fertility on QoL (Boivin et al., 2011). There are 36 items to assess core and treatment-related QoL as well as overall satisfaction with one's QoL and physical health. According to Boivin et al. (2011), use of this international survey in cross-cultural studies is permitted and encouraged.

Homophobia: Internal and External

Cochran and Mays (2016) described how disparity research must provide a basis for the elimination of disparities. According to Abdessamad, Yudin, Tarasoff, Radford, and Ross (2013), there is a lack of research into the factors that contribute to the exclusion of sexual minority patients from obstetric and gynecologic care. The

reproductive health care environment operates in a heteronormative manner (Hayman, Wilkes, Halcomb, & Jackson, 2013). Corbett et al. (2013) reported subtle moral and ethical opposition to providing reproductive care to lesbians among clinics in Canada.

During routine and gynecological visits, women are asked about marital status, if they are sexually active, and what method of contraception they are using (Hayman, Wilkes, Jackson, & Halcomb, 2013). This framework does not invite discussion about general reproductive health, is outdated, and can create stress for lesbians, who may not feel comfortable disclosing their sexual orientation in this manner (Stott, 2013; Szymanski & Chung, 2001). Providers who do not invite open discussion may be the first health care system barrier to considering parenting (Knight et al., 2013; Marques et al., 2015; Utamsingh et al., 2016). A study reported by Croghan, Moone, and Olson (2015) asked LGBT baby boomers about the signals that indicated to them whether a practitioner was LGBT-welcoming. Respondents cited provider and staff behavior, use of inclusive language on forms, evidence of inclusiveness in signage (rainbow flag), and the presence of LGBT staff as positive indicators of a welcoming environment.

Identifying factors that contribute to population health inequalities presents a timely opportunity for positive social change (Adrien, Beaulieu, Leaune, Perron, & Dassa, 2013; Hatzenbuehler et al., 2013). The current research can help inform areas for change in the social and structural determinants of health for this minority population (Knight et al., 2013). This area is one of several public health opportunities to improve health equity noted by Massetti et al. (2015). Changes are needed to remove the structural

stigma that contributes to minority stress through discriminatory policies and practices. Doing so will reflect modern society and promote public health.

Support Network

Research has shown that discriminatory policies and practices have a direct effect on the response to stress (Bogart et al., 2014). Baams et al. (2015) and Denton et al. (2014) applied the minority stress theory to examine stigma-related health disparities among lesbian, gay, and bisexual individuals. Lesbians should have equal access to health care and reproductive options as their nonlesbian counterparts. Parity would include access to supportive providers, comparable insurance coverage, and nondiscriminatory policies. A lack of these core elements contributes to the minority stress experience for lesbians (Marvel et al., 2016).

Regarding reproductive assistance, lesbians are likely to select an outwardly supportive clinic. Signs of welcoming may be readily identifiable via the Internet or upon initial encounter with the clinic (K. M. Johnson, 2012; H. Y. Wu et al., 2016). While impressions matter, heterosexual couples are not faced with the same challenge in identifying a clinic. Support for same-sex parents should not end with a successful pregnancy (Dahl et al., 2013; Shields et al., 2012; Suter et al., 2016; Wojnar & Katzenmeyer, 2014). This community may continue to face barriers to health care, including lactation support, where the heteronormative practice assumes families are composed of a male, a female, and a child or children (Farrow, 2015). Specialty care workers may not be prepared or understand how to support nontraditional families through this next phase, including pediatric care (Shields et al., 2012; Webster &

Telingator, 2016). These are some of the additional considerations that lesbians face even after achieving pregnancy that nonlesbian women do not have to consider.

Burdens of access, time, and cost, along with a lack of support, are often reason enough not to pursue this process (Inhorn & Patrizio, 2015; Kissin et al., 2016; Ombelet, 2014; Pratesi, 2012; A. K. Wu et al., 2014). Religion and strong beliefs against homosexuality may send subtle or overt messages that influence how some women choose to act (Lawrence et al., 2010; Pivetti & Melotti, 2013; Rostosky, Otis, Riggle, Kelly, & Brodnicki, 2008; Sowe, Brown, & Taylor, 2014). That is why this study aimed to identify the variables associated with the parenting decision of lesbians and the choice to pursue ART or other means to parenthood, while other lesbians opt out and choose not to parent or undergo ART (Baiocco & Laghi, 2013; Park et al., 2016; Power et al., 2010; Riskind et al., 2013).

Changes in policy and training may address some of the factors that contribute to minority stress and create disparities. The health care environment needs a cultural shift, including new standards for inclusive behaviors among health professionals (McManus et al., 2006; McNair, 2003; Perrin et al., 2013). The study contributes to understanding barriers to reproductive intentions of lesbians compared with nonlesbians (Blondeel et al., 2016; Fredriksen-Goldsen, Emlet et al., 2013; Macapagal et al., 2016; McDonald & Anderson, 2003; Simoni et al., 2017) and those that may create disparities in the path to parenthood through ART (Corbett et al., 2013; K. M. Johnson, 2012; Park et al., 2016; Schwartz & Baral, 2015; Stall et al., 2016; Wall, 2011).

A Lesbian Identity Disclosure Assessment

The degree of outness is an essential measure in understanding potential health-related issues associated with disclosure of one's sexual orientation (van Dam, 2014, 2015). Self-disclosure may be related to the experience of minority stress. Homonegative experiences may adversely impact willingness to disclose. This study explored the association of these factors for lesbians in the context of considering parenting. Studies have used ALIDA-II in self-identified lesbians with and without children. As van Dam (2015) noted, disclosure, as well as nondisclosure of one's sexual identity, may have unwanted consequences. Lesbians face this added burden of choosing to disclose and possible consequences repeatedly. The health care setting is no exception and adds a degree of stress that nonlesbians do not face.

Literature Related to the Changing Nature of Family

The association between reproduction and traditional marriage between a man and a woman is the historical norm, often linked with religious beliefs (S. K. Mishra, 2014). Today the ART process is more widely accepted for heterosexual couples who require medical assistance to conceive (Leiblum, Palmer, & Spector, 1995; Sutter et al., 2008). Single women and lesbian couples still face challenges when seeking ART or alternative paths to parenting (De Wert et al., 2014; Eyler et al., 2014; Ross et al., 2014; Rozental & Malmquist, 2015). Assisted reproduction is considered a matter of ethics in defining family (Dembinska, 2012; Mathieu, 2013; S. K. Mishra, 2014; Záchia et al., 2011). Beyond the choice to parent, there is a more substantial need for understanding the unique sexual health needs and risks of lesbians, which are affected by the practitioner–

patient relationship (Hayman, Wilkes, Halcomb, & Jackson, 2013; Marques et al., 2015; Röndahl et al., 2009; Utamsingh et al., 2016). This relationship can promote or adversely impact health if discussions are not open, encouraged, or supported (Stott, 2013).

There is a lack of research exploring the lesbian reproductive experience where one or both women seek ART (Schwartz & Baral, 2015). Most of the studies reported in the literature were qualitative or longitudinal (Fredriksen-Goldsen, Hoy-Ellis, Goldsen, Emlet, & Hooyman, 2014; Fredriksen-Goldsen, Kim et al., 2013). There is a lack of current literature that has quantitatively examined variables in the experience of lesbians considering parenthood or seeking ART (Power et al., 2010). S. M. Johnson (2012) described research on lesbian motherhood as having taken place in three waves. Initially, women had children in heterosexual relationships and later identified as a lesbian. The next wave saw lesbians having children in same-sex relationships. Studies in this wave evaluated children compared with their counterparts from heterosexual-parent families. The research evidence showed that children from lesbian-headed families were well adjusted and highly functioning. The current third wave is beginning to evaluate lesbian-parented families with individualized emphasis and without heterosexist comparison. More studies are needed to teach us about the unique aspects of the lesbian family life cycle and the dynamics of these created families (Crouch et al., 2013; S. M. Johnson, 2012).

Literature on Internet Surveys of the LGBT Population

Recruitment is a potential limitation in any study, and with online surveys utilizing social media, results can vary. Several recently published articles supported the

feasibility of using online surveys with this population. Ybarra, Mitchell, Palmer, and Reisner (2015) recruited more than 5,000 LGBT and non-LGBT youth participants in 5 months (2010–2011) to study support and victimization. In another study, Ybarra, Rosario, Saewyc, and Goodenow (2016) examined sexual behaviors by sexual identity among adolescent girls aged 13–18 years. Between 2010 and 2011, 2,823 girls participated in the online survey. Using the 2014 and 2015 Tobacco Products and Risk Perception (online) Surveys, which use weighted probability sampling, Nayak, Salazar, Kota, and Pechacek (2017) reported findings from 11,525 LGB and heterosexual participants. Lastly, the 2015 National School Climate Survey published by Kosciw, Greytak, Giga, Villenas, and Danischewski (2016) consisted of a total of 10,528 students between the ages of 13 and 21 years, a representative national sample of lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth who participated online. The publications provided offer support for recruiting an adequate and representative sample from this sexual minority to participate in an online survey.

Summary and Conclusions

In this chapter, I provided a review of the literature related to perceived stress and health, choosing parenthood, lesbian experiences of access and barriers, knowledge about fertility, documenting infertility, legal matters same-sex couples/families face, the alternative insemination experience and the use of the FertiQoL, internal and external homophobia, the value of a support network, and ALIDA-II as a measure of the lesbian degree of outness. The review closed with literature published on the changing nature of

family and societal shifts. These elements are associated with the research questions, particularly for lesbians.

Lesbians are a sexual minority and, as such, experience stigma and stress. Not all but many lesbians choose to become parents, while others may have the desire yet do not follow the path. There are no reports on the association between these influential factors and health in the context of lesbian reproduction. Legal and financial considerations, along with societal policies and practices, contribute to an increased burden for this population. As a result, lesbians experience disparities, making this a matter of public health.

Theories play a role in the foundation for research creating needed evidence for movements to act and bring about change. In public health, there is a reliance on data to demonstrate a gap, disparity, or need. In this review, I described the minority stress theory as it relates to the population of interest: lesbians in the context of parenthood and reproductive assistance. Minority stress is the conceptual framework used to explore the association between variables and the decisions lesbians make regarding parenthood and whether to seek assisted reproduction. I included nonlesbians in the current study for comparison. There is a lack of evidence with little research focused on the intersectionality of lesbians and the experience of assisted reproduction. These study findings may help to close this gap and provide evidence for needed social change. In the following chapter, Chapter 3, I describe the research design, rationale, sampling methodology, collection, and analysis of variables.

Chapter 3: Research Method

Introduction

Reproductive health and fertility are a matter of public health, yet a public health approach to infertility inclusive of lesbians is still lacking (Lemoine & Ravitsky, 2013). The purpose of this social epidemiological study was to explore the socioeconomic and sociocultural factors that are associated with parental status, controlling for sexual orientation (Carpinello et al., 2016; Greenfeld & Seli, 2016; Marvel et al., 2016; Tarín et al., 2015). I compared ART experience among lesbians and nonlesbians using FertiQoL scores. I also examined the difference in the degree of outness among lesbians with and without children. The research supports the tenets of public health, one of which is to ensure the quality and accessibility of health services (CDC, 2014). The knowledge of factors that create unique disparities and contribute to minority stress of lesbians can inform where changes are needed—that is, policy, practice, and so on. Ideally, such changes would ensure that lesbians have equal access, insurance or cost coverage, and fertility treatment options on par with their nonlesbian counterparts. This chapter includes the research design, rationale, and methodology for data collection. I also describe the sampling method, instrumentation, statistical analysis, and expected social change.

Research Design and Rationale

In this study I examined the association between sociocultural and socioeconomic variables and parental status, controlling for sexual orientation. I explored the ART experiences of lesbians and nonlesbians using the FertiQoL total score. I also examined the difference in the degree of outness among lesbians with and without children using

the ALIDA-II. Primary data were the source for this quantitative study collected via an online survey. Likert-type scaling is a widely used methodology for collecting survey response data (Munshi, 2014). These types of survey responses are easy to group, analyze, and summarize without requiring conversion. The survey directed questions of participants based on specific responses (Barua, 2013): FertiQoL for those with reproductive assistance/ART experience and ALIDA-II for lesbians.

Research Questions and Hypotheses

There were three research questions. The first was designed to explore the predictive relationship between the variables, including insured status, PSS, and parental status, controlling for self-identification. The purpose of the study was to investigate which factors may predispose, enable, or be lacking among lesbians when considering parenting/reproductive intentions (e.g., primarily insured status and perceived stress). As the data permitted, I explored additional aspects between the groups (i.e., SRH, QoL, age, education, employment status, income, etc.; Gordon et al., 2017).

The second research question helped explore whether there was a statistically significant difference in FertiQoL total, core, and treatment scores between lesbians and nonlesbians with fertility/infertility/ART experience (based on those who responded to the FertiQoL questions). FertiQoL was used to assess the effect a health care setting (heteronormative/homonegative attitudes and beliefs of others, clinic environment, and staff interactions) might have on the ART experience of lesbians compared with nonlesbians (Friedman et al., 2014). The theory is that there are experiences that create increased (minority) stress and health disparities of quality and access for this population.

The final research question was used to assess whether there is a statistically significant difference in the degree of outness between lesbians with and without children using the ALIDA-II (for those who responded). The ALIDA-II includes five questions specifically for lesbian parents. Using the individual responses, I calculated the scores to compare means.

How the Research Design Supports the Research Questions

The research design was nonexperimental and involved convenience sampling. The design choice for convenience sampling is consistent with other studies that include the lesbian and gay population (Goldbach, Tanner-Smith, Bagwell, & Dunlap, 2014; Simoni et al., 2017). Social media is a commonly accepted method for promoting awareness and extending invitations to participate in surveys (Brodzinsky & Goldberg, 2016; Kuyper, Fernee, & Keuzenkamp, 2016), which allows individuals to self-identify as eligible and to contribute anonymously.

Standardized survey methods enable quantification to assess measures of association. Using logistic regression, I evaluated the association between the independent variables (insured status and perceived stress) and the dependent outcome variable (parental status). For RQ1, the intent was to identify if there is a predictive relationship between the variables queried with parental status. The predictive measure analysis supported the research question.

I also collected additional sociocultural and socioeconomic information, including age, race/ethnicity, education level, employment status, and income level. All participants were asked a question for SRH and to rate their QoL. Participants self-selected if they

were lesbian or nonlesbian; those who identified as lesbian completed the ALIDA-II. Following the demographic-type questions, the next was, “Are you a parent (bio, co, step, adoptive, foster, etc.)?”, which related to the dependent variable. The survey directed participants to the FertiQoL based on response to the question “Thinking about parenthood, fertility, infertility, or any type of assisted reproduction, which category best describes you/your experience? (a) I have no plan/desire to be a parent; (b) I have no experience with fertility, infertility, or any type of assisted reproduction; (c) I have experience with fertility, infertility, or some type of assisted reproduction.” Likert-type scales measured the variables of interest.

Additional time was not required for field testing, as there were no novel survey tools or modifications to existing measures. I expected that recruitment would be the most considerable time and resource constraint. The risk that distribution of the invitation would be inadequate could have led to a low number of lesbians willing to participate and a prolonged data collection period. But there was no way to ensure equal distribution among the subgroups (lesbians and nonlesbians with and without children).

Methodology

Population

The intended population was women aged 18 years and older, including those who self-identify as lesbian. Ideally, respondents would include a range of experiences, from never considered parenting to all the ways individuals become parents to children. Historically, it has been estimated that approximately 1 in 10 (or 10%) of the population is lesbian or gay (Fredriksen-Goldsen, Kim et al., 2013), yet there is still a shifting

segment of society with an antigay sentiment (Coffman, Coffman, & Ericson, 2016). Thus, the study included a nonlesbian comparison group, which allowed for formal statistical analyses to assess if the predictive relationships between the independent variables and the dependent variable (outcome) differed between lesbian and nonlesbian women.

Sampling and Sampling Procedures

The broad sample of women included a target population of those who self-identified as a lesbian. Sampling was anonymous, and respondents had to confirm they were 18 or older to participate. The aim for this quantitative study was to recruit a minimum of 300 participants for the convenience web-based sample. The sampling method was to reduce bias, uphold validity, and enable potential generalizations from the sample to the extended lesbian population. Inclusion criteria included participants 18 years or older who were willing to provide informed consent and agreed to respond to a series of survey questions. Exclusion criteria included those who were unwilling to provide informed consent and those unable or unwilling to answer the survey questions.

Sample Size and Power Estimates

The study was a prospective study with primary data. Logistic regression was used to describe the data and assess the predictive relationship between the dependent variable and several independent variables (Statistics Solutions, 2018). G*power cannot be used to estimate a sample size for multinomial logistic regression, the method needed if the dependent variable has more than two outcomes. According to statistical resources in the literature, some general rules of thumb are applicable for sample size estimation

(Hosmer & Lemeshow, 2005; F. Hsieh, 1989; Knofczynski & Mundfrom, 2008). Suggestions range from 10 to 30 per category in the analysis (F. Hsieh, 1989). Others in the literature have suggested at least 50 or more than 100 items in the sample, with 200–400 observations being even better (Statistics How To, 2018). Additionally, sometimes it is useful to use a transformation of the population. Because the normal distribution has desirable properties, transforming a random variable into a variable that is normally distributed by taking the natural log can be useful (Zaiontz, 2018). Using such models, the value of the categorical dependent variable can be predicted from the values of the independent variables. The sample size estimate incorporated these concepts.

Sample size estimation uses a significance level α, desired statistical power $1 - \beta$, and the population effect size expected (Faul, Erdfelder, Buchner, & Lang, 2009). Using G*power 3.1 for logistic regression with an alpha of .05, power of .80, and odds ratio of 1.2 with lognormal distribution, the estimate was that 302 participants were needed. Alternatively, using the rule of thumb for minimum measures, I estimated the calculation for two independent variables with four categories each ($2 \times 4 = 8$) and one dependent variable with four categories ($8 + 4 = 12$) times the minimum observations needed ($12 \times 10 = 120$; $12 \times 20 = 240$; $12 \times 30 = 360$). I aimed to recruit 300 participants for this study based on these estimations. Initially, I thought I would use the ART parenting question with four (expected) categories as the dependent variable. In the end, I used parental status, a dependent variable with two categories, and in this case, the estimate would have been 100–300 participants. The sample size was adequate based on these estimates.

Recruitment, Participation, and Data Collection

The Walden University Institutional Review Board (IRB) provided approval (approval number 09-06-18-0410847) before study initiation. Recruitment was through targeted online venues using social media, e-mail blasts, and snowballing. The survey was also approved and available via the Walden University Participant Pool. Aside from an introduction and invitation to participate, informed consent was the first thing a potential participant saw. The informed consent described the research purpose, inclusion/exclusion criteria, and potential risks and benefits of participating. If the individual agreed, they acknowledged their consent and then proceeded to the survey. The survey administrator recorded and securely stored anonymously the participant's responses to the series of questions.

Instrumentation and Operationalization

Using the survey instrument I collected demographic details and queried social, cultural, economic, and other factors potentially associated with parenting and fertility/infertility and ART (Appendix A). Socioeconomic variables included insured status, education level, employment status, and income level, which were self-reported. Sociocultural factors included age, race/ethnicity, SRH), QoL (Questions A and B from the FertiQoL, not included in the total score), and perceived stress level (using the PSS-14; Cohen et al., 1983).

The FertiQoL instrument was for participants with fertility/infertility or ART experience. FertiQoL is a reliable measure of the impact of fertility problems and treatment on QoL. As Boivin et al. (2011) noted, future research is needed to establish the

use of FertiQoL in cross-cultural research and clinical work. While not a specific aim, this study supported this objective. For women who have experienced ART, I compared FertiQoL total, core (24 items), and treatment (10 items) scores between lesbians and nonlesbians. Several FertiQoL questions were reverse scored before I calculated the total, core, and treatment scores. To my knowledge, this is the first targeted lesbian assessment with the FertiQoL.

ALIDA-II was used to assess the degree of outness, support network, and heteronormative or homonegative experience for lesbians with and without children (Morrison & Morrison, 2003; van Dam, 2015). There were 24 questions, with 5 items directed toward those with children and all used to calculate the total score.

Study Variables

The study variables represent prespecified constructs to be measured (Frankfort-Nachmias & Nachmias, 2008). The use of groups or labels is a way to quantify the measures under investigation, which can help explain the study parameters (Creswell, 2013). The outcome or variable of interest is considered the dependent variable (Frankfort-Nachmias & Nachmias, 2008). The variable(s) that might help explain the change or difference in outcomes is the independent variable (Frankfort-Nachmias & Nachmias, 2008). A covariate is a variable that may influence the dependent variable; these potentially confounding effects can be evaluated in the statistical analysis using regression to assess how a covariate contributes to the variance (Field, 2013; Green & Salkind, 2010). Table 1 shows the variables for this study.

Dependent Variables

The dependent variable of interest for RQ1 was parental status (parenting choice). Parental status was a dichotomous categorical variable with two options: no (0) or yes (1). An alternative was to use ART experience as the dependent variable, but this was not selected based on potential limitations associated with this outcome. I tested the between-group differences of FertiQoL for RQ2 and ALIDA-II for RQ3.

Independent Variables

The independent variables for RQ1 were insured status and perceived stress. Insured status (categorical variable) was assessed based on five possible responses: (a) I do not have health insurance coverage; (b) I have health insurance, but fertility/infertility treatment is not covered (all costs are out of pocket); (c) I have health insurance, but there are limits for fertility/infertility or reproductive coverage (lifetime dollar limits, procedure restrictions, etc.); (d) I have health insurance and have maxed out (used up) all of my fertility/infertility coverage; and (e) I have health insurance but do not know about fertility/infertility or reproductive coverage. For this study, “insured status” was an indicator of socioeconomic status. Based on the number of responses and in order to meet the statistical assumptions for analysis, insured status was collapsed into three categories: no insurance or no fertility coverage, fertility limits or maxed out, and unknown fertility coverage. Perceived stress was measured using the PSS-14 (Appendix B; Cohen et al., 1983). Seven of the 14 items are worded negatively (including 1, 2, 3, 8, 11, 12, 14), and the remaining 7 are positive (4, 5, 6, 7, 9, 10, 13). Each item is rated using a 5-point Likert-type scale. After reversing the positive items’ scores, all were summed to

determine the total score. Possible PSS-14 total scores range from 0 to 56, with a higher score indicating a greater level of perceived stress (Ezzati et al., 2014). I created three groups based on score range: low stress (0–18), moderate stress (19–37), and high stress (38–56). Since high stress had low cell counts, I combined those with moderate stress. I used low stress and moderate/high stress in the analysis for RQ1. I included income and region as potential socioeconomic and sociocultural factors in this study.

Reproductive health care/ART experience measured by FertiQoL. RQ2 explored how the FertiQoL total, core, and treatment scores differed between lesbians and nonlesbians who have experienced ART. The FertiQoL is a validated tool to reliably measure the impact of fertility and ART on QoL (Appendix C; Boivin et al., 2011). This variable is nominal (ordinal) and uses a 5-point Likert-type scale. There are 24 questions related to fertility and an additional 10 items that pertain to treatment (ART). The core includes Emotional, Mind/Body, Relational, and Social subscales. The Environment and Tolerability subscales are part of the treatment (ART) module. Exploring the heterosexist/heteronormative experiences of women in the process of assisted reproduction was a parameter of interest in the current study. In a qualitative study, O'Neill, Hamer, and Dixon (2013) examined lesbians' perceptions of health care professionals in their transition to parenthood. In the current study, I thought that the treatment scale might help explore minority stress and heteronormative/homonegative experiences.

Degree of outness. For RQ3, ALIDA-II was used to assess the level of outness, with permission from the author (Appendix D). This survey uses a 6-point Likert scale

and consists of seven questions (with multiple parts) to measure the level of outness or disclosure, social support, and depression (van Dam, 2008, 2015). This tool is a representative measure of sociocultural factors, including questions specific to lesbian parents. I used ALIDA-II to explore differences in the degree of outness between lesbians with and without children.

Covariates

The survey included demographic and other sociocultural status and socioeconomic status information from all participants. Parameters included identification as lesbian or nonlesbian (categorical), age (ordinal), race/ethnicity (categorical), education level (ordinal), employment status (categorical), income level (ordinal), and state (categorical). SRH is a (categorical) measure that has been widely used and assessed for validity in a range of applications (Eriksson et al., 2001; Zajacova & Todd, 2015). Response to the “overall evaluation of physical health” and “satisfaction with quality of life” questions taken from the FertiQoL served to address this variable. The sociocultural status and socioeconomic status variables were summarized using descriptive statistics.

Table 1

Variables, Scales of Measurement, Variable Type, and Collection Resource

	Parameter(s) of interest	Survey method	Scale
Independent variables			
Insured status	Socioeconomic status	Survey	Categorical
Perceived stress	A measure of appraised stress (total score)	PSS-14	Ordinal/categorical
Dependent variable			
Parental status	Are you a parent (bio, co, step, adoptive, foster, etc.)?	Survey	Categorical
Alternate dependent variable: ART experience	I have no plan/desire to be a parent, I have no experience with fertility, infertility or any type of assisted reproduction, or ART/parent by other means I have experience with fertility, infertility, or some type of assisted reproduction	Survey	Categorical

Note. ART = assisted reproductive technology. PSS-14 = Perceived Stress Scale–14.

Data Analysis Plan

To analyze the data, I used the most current version of SPSS software (Version 25). A benefit of using SPSS is that it allows for the recoding of variables, specifying how to handle missing data, and for data transformation as needed. SPSS is available to doctoral students at Walden University.

Public health researchers frequently use logistic regression for determining the correlation between risk factors and disease (F. Hsieh, 1989). In the current study, the independent variables (insured status and perceived stress) were the associated risk factors for the dependent variable, parental status. With a categorical dependent variable, logistic regression was the planned analysis. The interactions of interest were between the two independent variables (insured status and PSS) and the dependent variable (parent [yes, no]). For RQ1, I used chi-square to assess the relationship between insured status

and parental status and whether it differed among lesbians and nonlesbians. Next, I used chi-square to assess the relationship between PSS level and parental status.

For RQ2, I used the independent samples *t*-test to explore whether the mean FertiQoL total, core, and treatment scores differed between lesbians and nonlesbians. Using the same method for RQ3, I assessed if the degree of outness differed between lesbians with and without children. Demographic information was summarized descriptively. Individual variables were summarized descriptively and reported using tables and figures as appropriate.

Threats to Validity

Threats to internal validity included bias in the selection of variables to consider as well as the ability to recruit adequate numbers across the groups (lesbians and nonlesbians with and without children). Since I posted the survey on social media and shared it by personal email with affiliated organizations, there was a potential bias for limited distribution. Threats to external validity may include the tools utilized for data collection and recruitment methods, which could affect the generalizability of findings. I selected the FertiQoL and ALIDA-II because they were available in the public domain and did not require additional validation. There is no evidence using FertiQoL explicitly with lesbians.

Ethical Procedures

As potential participants accessed the survey, they were required to provide informed consent to continue. The informed consent described the research study and survey process and included resources should a participant need help with considering

parenthood, fertility, or experience any life crisis. Anonymity was assured. The Walden University IRB provided approval before study initiation. There were no ethical concerns regarding the recruitment process. Information about the study was available via various Internet communications platforms. Participation was voluntary and anonymous and required one-time completion of a series of survey questions online.

The data were collected and stored using a popular survey platform. The instructional text helped to customize the experience based on specific responses that subcategorized the participants. The data were validated and protected by TRUSTe and Norton (Quah & Röhm, 2013). I received the data in a form usable for analysis within SPSS, and there are no plans to share the data before publishing. There were no conflicts of interest with my professional work and no means to unduly influence individuals to participate.

Implications for Social Change

There is a lack of studies to understand factors that are associated with lesbian parenting decision-making (Baiocco & Laghi, 2013; Hayman et al., 2015). For lesbians who attempt ART, there is a lack of research to understand their experience (Greenfeld & Seli, 2016; Hayman, Wilkes, Halcomb, & Jackson, 2013). In the field of social epidemiology, researchers often use survey methods to analyze the social determinants of health using a population-representative sample (Chandola, Kumari, & Marmot, 2014). The current study was the first of its kind to quantitatively explore the factors associated with parenting decisions of lesbians and their ART experience.

One's reproductive choice should not be assumed or limited based on sexual orientation. Access to reproductive care should be the same for all women (Cherguit et al., 2013; Dahl et al., 2013). It is imperative to understand the factors influencing the choice of same-sex couples to pursue parenthood (Morin, Keefe, & Naftolin, 2014; Webb, Chonody, & Kavanagh, 2016). This knowledge has implications essential for educating policy makers to reduce or eliminate disparities as a matter of public health. Shifting social constructs to improve social inclusivity would minimize minority stress and enhance the ART experience of this population (Wolff et al., 2017). Assuring health care access and favorable social conditions would promote positive change for lesbians considering parenthood (Patterson, 2017; Pratesi, 2012; Stone & Weinberg, 2015; Verbiest et al., 2016).

Summary

This chapter described the research purpose, study design, rationale, population, sampling, and variables of interest in exploring factors that may be associated with the parenting decisions and ART experiences of lesbians and nonlesbians. This study may be the first of its kind. The aim was to identify factors that contribute to fertility-related health disparities for lesbians as a minority population, a matter that qualifies under the tenets of public health. The study findings have implications for positive social change by reducing minority stress and improving the lesbian reproductive experience. In Chapter 4, I present and describe the results from the statistical analyses.

Chapter 4: Results

Introduction

The purpose of this study was to investigate which socioeconomic and sociocultural factors may be associated with parenting choice. The goal was to explore whether these factors predispose, enable, or are lacking among lesbians when considering parenting/reproductive intentions (e.g., primarily insured status and perceived stress; other factors like SRH, financial ability, and education could be explored). The main research question related to the predictive relationship between insured status, perceived stress, and parental status among lesbians and nonlesbians. There were two additional research questions based on population subsets: What is the difference in FertiQoL total, core, and treatment scores between lesbians and nonlesbians? What is the difference in the degree of outness as measured by the ALIDA-II between lesbians with and without children? In this chapter, I present the research findings, including descriptive summaries and formal statistical analyses, to address each of the research questions.

Data Collection

I used an online survey for data collection. I created and uploaded the validated questionnaires to SurveyMonkey. Awareness and invitations were shared through social media (Facebook) and personal requests via e-mail to select groups (personal affiliations) and organizations, including the Walden University Participant Pool. Snowballing was encouraged. The survey opened on September 10, 2018 and closed on October 8, 2018, after slightly exceeding the target of $N = 300$ with 314 respondents.

Handling of Missing Values

There were no discrepancies in data collection, only the anticipated potential of missing responses. The software handled any missing value for each of the research questions. The first research question included all respondents—that is, lesbian and nonlesbian—regardless of parental status, fertility experience, insured status, or perceived stress level, and regardless of response completeness. When determining means or calculating the total scores, SPSS handled missing values for the PSS-14, the FertiQoL, and the ALIDA-II mathematically.

Results

Descriptive Summary Statistics of Demographic Characteristics

Tables 2–13 summarize the demographic characteristics for the participants. Approximately one-third of the total sample (N = 314) self-identified as a lesbian (n = 102).

Table 2 provides the distribution of participants across the United States. Because there was not an ex-U.S. response option, no response could indicate a missing value or that the participant resided outside of the United States. The highest percentage of participants were from Connecticut (27.4%) and Massachusetts (22%). These states reflect the geographical locations of my primary networks and associations.

Table 2

Summary of Location

	n (%)
Ex-U.S. or missing	18 (5.7)
Arizona	2 (0.6)
California	8 (2.5)
Colorado	3 (1.0)
Connecticut	86 (27.4)
District of Columbia (DC)	1 (0.3)
Florida	14 (4.5)
Georgia	4 (1.3)
Illinois	6 (1.9)
Iowa	1 (0.3)
Kentucky	1 (0.3)
Maine	3 (1.0)
Maryland	6 (1.9)
Massachusetts	69 (22.0)
Michigan	4 (1.3)
Minnesota	3 (1.0)
Missouri	2 (0.6)
Nevada	1 (0.3)
New Hampshire	8 (2.5)
New Jersey	1 (0.3)
New Mexico	1 (0.3)
New York	8 (2.5)
North Carolina	15 (4.8)
Ohio	3 (1.0)
Pennsylvania	11 (3.5)
Rhode Island	12 (3.8)
South Carolina	2 (0.6)
Texas	3 (1.0)
Vermont	3 (1.0)
Virginia	3 (1.0)
Washington	5 (1.6)
Wisconsin	7 (2.2)

Table 3 shows distribution by regions including the Northeast, Southeast, Midwest, Southwest, West, and Ex-US (or missing). The majority (64.3%) of all participants were from the Northeast. The chi-square test (region and most identify with) was not significant, $\chi^2(5) = 9.168$, $p = .103$.

Table 3

Summary by Region

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
Northeast	66 (64.7)	136 (64.2)	202 (64.3)
Southeast	11 (10.8)	34 (16.0)	45 (14.3)
Midwest	6 (5.9)	20 (9.4)	26 (8.3)
Southwest/West[a]	8 (7.8)	15 (7.1)	23 (7.3)
Southwest	2 (2.0)	4 (1.9)	6 (1.9)
West	6 (5.9)	11 (5.2)	17 (5.4)
Ex-US	11 (10.8)	7 (3.3)	18 (5.7)
Total	102 (100.0)	212 (100.0)	314 (100.0)

a. Due to low cell counts, Southwest and West were combined for the logistic regression in RQ1.

The age distribution was similar between groups (Table 4), with a slightly higher percentage of lesbians than nonlesbians in the 21–29 and 50–59 groups and more 60 or older in the nonlesbian group.

Table 4

Summary by Age (Year)

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
21–29	11 (10.8)	10 (4.7)	21 (6.7)
30–39	22 (21.6)	68 (32.1)	90 (28.7)
40–49	28 (27.5)	59 (27.8)	87 (27.7)
50–59	36 (35.3)	59 (27.8)	95 (30.3)
60 or older	5 (4.9)	16 (7.5)	21 (6.7)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 5 shows the education level responses. Nearly half of all participants have a graduate degree, and the distribution was similar between the groups.

Table 5

Summary of Education Level

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
High school or equivalent	2 (2.0)	4 (1.9)	6 (1.9)
Some college but no degree	13 (12.7)	23 (10.8)	36 (11.5)
Associate's degree	8 (7.8)	17 (8.0)	25 (8.0)
Bachelor's degree	32 (31.4)	65 (30.7)	97 (30.9)
Graduate degree	47 (46.1)	103 (48.6)	150 (47.8)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 6 shows the employment status by subgroup. Approximately 70% of the participants were employed full time (40 or more hours per week), with a higher percentage of nonlesbians in the category "not employed and not looking for work."

Table 6

Summary of Employment Status

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
Employed, working 40 or more hours per week	77 (75.5)	144 (67.9)	221 (70.4)
Employed, working 1–39 hours per week	20 (19.6)	41 (19.3)	61 (19.4)
Not employed, looking for work	0 (0)	5 (2.4)	5 (1.6)
Not employed, not looking for work	2 (2.0)	11 (5.2)	13 (4.1)
Retired	3 (2.9)	8 (3.8)	11 (3.5)
Disabled, not able to work	0 (0)	3 (1.4)	3 (1.0)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 7 shows the highest percentage of lesbians reported a household income in the $125,000–$149,999 range, whereas the highest percentage for nonlesbians was in the $200,000 and up category. Figure 1 illustrates the distribution differences in household income.

Table 7

Summary of Income Level

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
$0–$9,999	1 (1.0)	1 (0.5)	2 (0.6)
$10,000–$24,999	1 (1.0)	4 (1.9)	5 (1.6)
$25,000–$49,999	15 (14.7)	15 (7.1)	30 (9.6)
$50,000–$74,999	8 (7.8)	28 (13.2)	36 (11.5)
$75,000–$99,999	9 (8.8)	31 (14.6)	40 (12.7)
Less than $100,000[a]	34 (34.7)	79 (39.5)	113 (37.9)
$100,000–$124,999	15 (14.7)	24 (11.3)	39 (12.5)
$125,000–$149,999	19 (18.6)	23 (10.8)	42 (13.4)
$150,000–$174,999	12 (11.8)	13 (6.1)	25 (8.0)
$175,000–$199,999	4 (3.9)	11 (5.2)	15 (4.8)
≥$200,000	14 (13.7)	50 (23.6)	64 (20.4)
More than $100,000[a]	64 (65.3)	121 (60.5)	185 (62.1)
Total	98 (100)	200 (100)	298 (100)

a. Two income categories were used for logistic regression in RQ1.

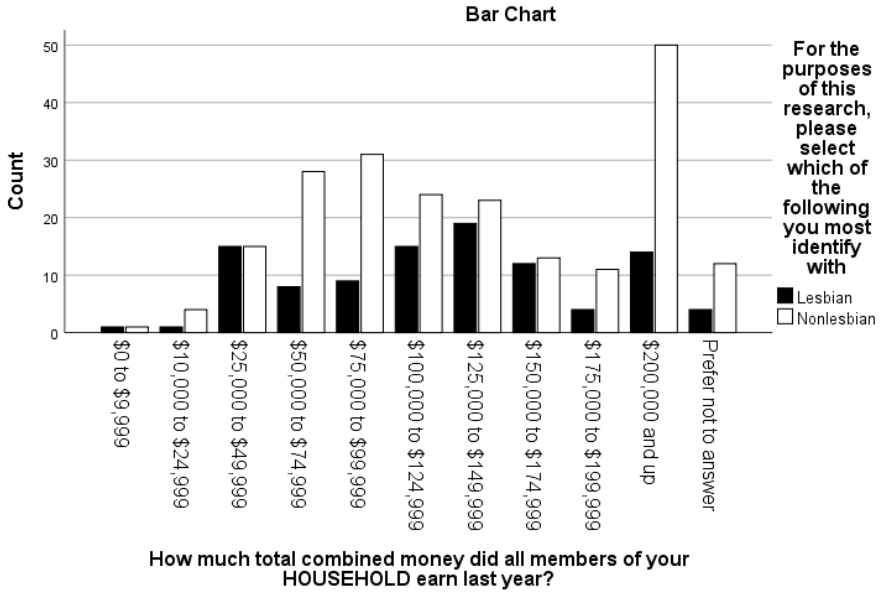

Figure 1. Income distribution by subgroup

More than 90% of the study participants were White (Table 8) and not Spanish, Hispanic, or Latino (not shown).

Table 8

Summary of Demographic Characteristics: Race

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
White	98 (96.1)	197 (92.9)	295 (93.9)
Black or African American	1 (1.0)	2 (0.9)	3 (1.0)
Asian	1 (1.0)	4 (1.9)	5 (1.6)
From multiple races	1 (1.0)	6 (2.8)	7 (2.2)
Some other race	0	1 (0.5)	1 (0.3)
Missing	1 (1.0)	2 (0.9)	3 (1.0)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 9 shows a crosstab summary of parental status by self-identification. Overall, 65.3% of the participants were parents. For lesbians, the split was nearly even (49% yes and 51% no), with more nonlesbian parents (73.1%) than nonparents. As noted in Table 10, more than half of all participants reported having experience with fertility, infertility, or any type of assisted reproduction (ART experience).

Table 9

Summary of Parental Status

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
Yes	50 (49.0)	155 (73.1)	205 (65.3)
No	52 (51.0)	57 (26.9)	109 (34.7)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 10

Summary of ART Experience

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
I have no plan/desire to be a parent	22 (21.6)	30 (14.2)	52 (16.6)
I have no experience with fertility, infertility, or any type of assisted reproduction	25 (24.5)	76 (35.8)	101 (32.2)
I have experience with fertility, infertility, or some type of assisted reproduction	55 (53.9)	106 (50.0)	161 (51.3)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 11 displays the results for health insurance status. Nearly 52% of all participants had health insurance but did not know about fertility/infertility or reproductive coverage. The most notable difference was in the category of "I have health insurance, but fertility/infertility treatment is not covered (all costs are out of pocket)," with more than twice the percentage of lesbians than nonlesbians in this category. For the RQ1 logistic regression analysis, insurance status was collapsed into three categories.

Table 11

Summary of Health Insurance Status

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
I do not have health insurance coverage[a]	1 (1.0)	6 (2.8)	7 (2.2)
I have health insurance, but fertility/infertility treatment is not covered (all costs are out of pocket)[a]	19 (18.6)	18 (8.5)	37 (11.8)
I have health insurance, but there are limits for fertility/infertility or reproductive coverage (lifetime dollar limits, procedure restrictions, etc.)[b]	33 (32.4)	63 (29.7)	96 (30.6)
I have health insurance and have maxed out (used up) all of my fertility/infertility coverage[b]	5 (4.9)	6 (2.8)	11 (3.5)
I have health insurance but do not know about fertility/infertility or reproductive coverage[c]	44 (43.1)	119 (56.1)	163 (51.9)
Total	102 (100.0)	212 (100.0)	314 (100.0)

a, No insurance or no fertility coverage. b. Fertility limits or maxed out. c. Unknown fertility coverage

There were two general questions related to SRH (Table 12) and QoL (Table 13) from the FertiQoL (not used in that analysis). The distribution was similar between the groups with overall SRH as *good* or *very good* and QoL as *satisfied* or *very satisfied*.

Table 12

Summary of Self-Rated Health

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
Very poor	0 (0)	1 (0.5)	1 (0.3)
Poor	1 (1.0)	3 (1.4)	4 (1.3)
Neither good nor poor	7 (6.9)	21 (10.0)	28 (8.9)
Good	61 (59.8)	120 (56.9)	181 (57.8)
Very good	33 (32.4)	66 (31.3)	99 (31.6)
Missing	0 (0)	1 (0.5)	1 (0.3)
Total	102 (100.0)	212 (100.0)	314 (100.0)

Table 13

Summary of Quality of Life

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
Very dissatisfied	0 (0)	3 (1.4)	3 (1.0)
Dissatisfied	1 (1.0)	5 (2.4)	6 (1.9)
Neither satisfied nor dissatisfied	6 (5.9)	19 (9.0)	25 (8.0)
Satisfied	55 (53.9)	113 (53.6)	168 (53.7)
Very satisfied	40 (39.2)	71 (33.6)	111 (35.5)
Missing	0 (0)	1 (0.5)	1 (0.3)
Total	102 (100.0)	212 (100.0)	314 (100.0)

For RQ1, the binary logistic regression included three variables: the dependent variable of parental status and the independent variables of insured status and PSS. I repeated the analysis to include self-identification in the model. In the following sections I describe how each variable was handled and present the descriptive summaries and cross-tabulations.

Parental status. Response to the question "Are you a parent (bio, co, step, adoptive, foster, etc.)?" (response 0 = no, 1 = yes) was used as the dependent variable (parental status). Table 14 shows the crosstab assessment of Parent × ART experience. Eighty-six percent of lesbian parents had ART experience, compared with 56.8% of nonlesbian parents, and this difference was statistically significant at the .05 level.

Conversely, only 14% of lesbian parents did not have ART experience compared with 41.3% of nonlesbian parents. Of those who were not parents, nonlesbians had more ART experience, whereas lesbians were less likely to have ART experience. Three nonlesbian women reported that they were a parent but had no plan/desire to be a parent (based on the ART experience question).

Table 14

Cross-Tabulation for Parental Status, ART Experience, and Most Identify With

Parental status	ART experience	Most identify with, *n* (%)		Total, *n* (%)
		Lesbian	Nonlesbian	
Yes	I have no plan/desire to be a parent	0 (0)$_a$	3 (1.9)$_a$	3 (1.5)
	I have no experience with fertility, infertility, or any type of assisted reproduction	7 (14.0)$_a$	64 (41.3)$_b$	71 (34.6)
	I have experience with fertility, infertility, or some type of assisted reproduction	43 (86.0)$_a$	88 (56.8)$_b$	131 (63.9)
	Total (parent = yes)	50 (100.0)	155 (100.0)	205 (100.0)
No	I have no plan/desire to be a parent	22 (42.3)$_a$	27 (47.4)$_a$	49 (45.0)
	I have no experience with fertility, infertility, or any type of assisted reproduction	18 (34.6)$_a$	12 (21.1)$_a$	30 (27.5)
	I have experience with fertility, infertility, or some type of assisted reproduction	12 (23.1)$_a$	18 (31.6)$_a$	30 (27.5)
	Total (parent = no)	52 (100.0)	57 (100.0)	109 (100.0)
Total	I have no plan/desire to be a parent	22 (21.6)$_a$	30 (14.2)$_a$	52 (16.6)
	I have no experience with fertility, infertility, or any type of assisted reproduction	25 (24.5)$_a$	76 (35.8)$_b$	101 (32.2)
	I have experience with fertility, infertility, or some type of assisted reproduction	55 (53.9)$_a$	106 (50.0)$_a$	161 (51.3)
	Total (all)	102 (100.0)	212 (100.0)	314 (100.0)

Note. Each subscript letter denotes a subset of "For the purposes of this research, please select which of the following you most identify with" categories whose column proportions do not differ significantly from each other at the .05 level.

Health insurance/insured status. Insured status was measured using a 5-point scale. More than half of all participants had insurance but were not aware of the fertility/infertility or reproductive coverage, and this proportion difference was statistically significant at the .05 level. Also notable was that more than twice the percentage of lesbians compared with nonlesbians had insurance with no coverage for fertility/infertility treatment, with all costs being out of pocket; this proportional difference was statistically significant at the .05 level.

Because there were one or more expected cell frequencies less than five, one of the statistical assumptions was violated. I collapsed the insured status into three categories (Table 15) to meet the assumption of expected cell frequencies greater than five. There was a statistically significant association between insured status and most identify with, $\chi^2(2) = 6.063$, $p = .048$.

Table 15

Cross-Tabulation for Collapsed Insured Status and Most Identify With

Insured status	Most identify with, *n* (%)		Total, *n* (%)
	Lesbian	Nonlesbian	
No insurance or no fertility coverage	20 (45.5)	24 (54.5)	44 (14.0)
Fertility limits or maxed out	38 (37.3)	69 (32.5)	107 (34.1)
Unknown fertility coverage	44 (43.1)	119 (56.1)	163 (51.9)
Total	102 (100.0)	212 (100.0)	314 (100.0)

$p < .05$

Perceived stress. Also used for RQ1, the PSS total score was a sum of 14 questions with values ranging from 0 to 56 (some items required reverse scoring). Based on the distribution and to facilitate comparison, the scale was divided into three levels. A

0–18 score was considered low stress, 19–37 as moderate stress, and 38–56 as high perceived stress. The majority were in the moderate stress range. There were five nonlesbians and no lesbians with scores in the high-stress category. There were 29 participants with missing PSS scores (10 lesbians and 19 nonlesbians).

Since there were few in the high stress category, the expected cell frequency was less than five and one of the statistical assumptions was violated. I added the high to the moderate group, and this met the assumption for expected cell frequencies. I conducted a chi-square test for association using PSS (low, moderate/high) score and most identify with (Table 16). The association was not statistically significant between level of perceived stress and most identify with, $\chi^2(1) = 1.798$, $p = .180$.

Table 16

Cross-Tabulation for Perceived Stress Score and Most Identify With

	Lesbian, *n* (%)	Nonlesbian, *n* (%)	Total, *n* (%)
Low	38 (41.3)	64 (33.2)	102 (35.8)
Moderate/high	54 (58.7)	129 (66.8)	183 (64.2)
Total	92 (100.0)	193 (100.0)	285 (100.0)

$p > .05$

Table 17 provides a crosstab summary of most identify with, insured status, and perceived stress with parental status and the respective chi-square for each association. There was a statistically significant association between parental status and most identify with, $\chi^2(1) = 17.640$, $p < .001$, insured status, $\chi^2(2) = 8.475$, $p < .014$, and perceived stress $\chi^2(1) = 6.166$, $p < .013$.

Table 17

Cross-Tabulation for Parental Status, Most Identify With, Insured Status, and Perceived Stress

Total	Parental Status, *n* (%)		Total, *n* (%)
	No, 109 (100.0)	Yes, 205 (100.0)	
Most identify with ($p < .001$)			314 (100.0)
Lesbian	52 (47.7)	50 (24.4)	102 (32.5)
Nonlesbian	57 (52.3)	155 (75.6)	212 (67.5)
Insured status ($p = .014$)			314 (100.0)
No insurance or no fertility coverage	20 (18.3)	24 (11.7)	44 (14.0)
Fertility limits or maxed out	26 (23.9)	81 (39.5)	107 (34.1)
Unknown fertility coverage	63 (57.8)	100 (48.8)	163 (51.9)
Perceived stress ($p = .013$)			285 (100.0)
Low	45 (45.5)	57 (30.6)	102 (35.8)
Medium/high	54 (54.5)	129 (69.4)	183 (64.2)

Research Question 1: Insured Status, Perceived Stress, and Parenting Choice

RQ1: What is the predictive relationship between insured status, level of perceived stress, and parental status among lesbians and nonlesbians?

For RQ1, logistic regression was the method used to assess the predictive relationship between insured status (independent variable), perceived stress level (independent variable), and parental status (dependent variable). Since the dependent variable was dichotomous, I used binary logistic regression. If the analysis used ART experience as the dependent variable (with three response levels), I would have used multinomial logistic regression.

The percentage who were “not parents, had low stress, and had insurance limits on fertility coverage” was more than seven times higher for lesbians than nonlesbians. The percentage who were parents, had moderate stress, and did not know their insurance limits for fertility was nearly double for nonlesbians versus lesbians. Nonlesbian parents

were less aware of their insurance status (54.2% vs. 34%), suggesting that lesbians may be slightly more informed about fertility coverage. Regardless of parental status or PSS level, lesbians were more than twice as likely as nonlesbians (18.5% vs. 8.3%, respectively) to lack fertility/infertility treatment coverage (all costs are out of pocket). Overall, nonlesbian women were less aware of their insurance coverage for fertility/infertility than lesbians (56.1% vs. 43.1%, respectively), regardless of parental status and perceived stress.

A binomial logistic regression was performed to ascertain the association between insured status, perceived stress, and most identify with on the likelihood that participants were parents. The logistic regression model was statistically significant, $\chi^2(4) = 26.64$, $p < .001$. The model explained 12.3% (Nagelkerke R^2) of the variance in parental status and correctly classified 67.7% of cases. Sensitivity was 86.6%, specificity was 32.3%, positive predictive value was 70.6% and negative predictive value was 56.1%. Table 18 shows the model output. I used three levels of insured status and two levels of perceived stress for the RQ1 analysis. In the model, the association between insured status and parental status was statistically significant, $p = .010$. In this study, the odds that a participant with fertility limits or maxed out coverage is a parent were 2.756 times higher than those with no insurance or no fertility coverage. Perceived stress was a positive and statistically significant predictor of parental status, $p = .035$. Most identify with was also a positive predictor of parental status and statistically significant when added to the model, $p = .001$.

Table 18

Logistic Regression Model: Predictive Relationship Between Insured Status, Perceived Stress, Most Identify With, and Parental Status

		B	S.E.	Wald	*df*	*p*	OR	95% CI for OR Lower	Upper
Step	No insurance or no fertility coverage			9.210	2	.010	1.000		
1[a]	Fertility limits or maxed out	1.014	.414	6.001	1	.014	2.756	1.225	6.203
	Unknown fertility coverage.	.176	.379	.215	1	.643	1.192	.568	2.504
	Perceived stress	.563	.267	4.440	1	.035	1.757	1.040	2.967
	Most identify with	-.940	.275	11.661	1	.001	.391	.228	.670
	Constant	.196	.398	.243	1	.622	1.217		

Note. $N = 285$. CI = confidence interval

a. Variables entered on step 1: insured status, perceived stress, and most identify with

I repeated the binomial logistic regression adding region and income along with insured status, perceived stress level, and most identify with. The model was statistically significant, $\chi^2(9) = 35.37$, $p < .001$. The model explained 16.8% (Nagelkerke R^2) of the variance in parental status and correctly classified 69% of cases. In this model, of the five predictor variables, region and income were not statistically significant (Table 19).

Table 19

Logistic Regression Model: Predictive Relationship Between Insured Status, Perceived Stress, Most Identify With, Region, Income, and Parental Status

			B	S.E.	Wald	*df*	*p*	OR	95% CI for OR Lower	Upper
Step 1[a]	Insured status									
		No insurance or no fertility coverage			7.023	2	.030	1.000		
		Fertility limits or maxed out	.805	.432	3.470	1	.062	2.237	.959	5.219
		Unknown fertility coverage	-.019	.396	.002	1	.961	.981	.451	2.133
	Perceived stress		.666	.289	5.332	1	.021	1.947	1.106	3.428
	Most identify with		-.973	.293	11.039	1	.001	.378	.213	.671
	Region									
		Ex-U. S.			7.465	4	.113	1.000		
		Northeast	1.050	.666	2.485	1	.115	2.858	.775	10.550
		Southeast	.211	.725	.085	1	.771	1.235	.298	5.116
		Midwest	.361	.783	.212	1	.645	1.434	.309	6.648
		Southwest/West	.686	.787	.760	1	.383	1.985	.425	9.280
	Income level		.519	.292	3.161	1	.075	1.680	.948	2.977
	Constant		-.803	.742	1.171	1	.279	.448		

Note. N = 314. CI = confidence interval

a. Variables entered on step 1 (ref): insured status , perceived stress , most identify with , region , income

Research Question 2: Fertility Quality of Life

RQ2: For women who have experienced ART, what is the difference in FertiQoL total, core, and treatment scores between lesbians and nonlesbians?

To assess the hypothesis for RQ2, I conducted an independent samples *t*-test. Within SPSS, I selected cases based on the ART experience response = 3 (“I have experience with fertility, infertility, or some type of assisted reproduction”). The number of responses differed for each category. The FertiQoL total score had 61 responses (23

lesbians and 38 nonlesbians), the core score had 85 responses (28 lesbians and 57 nonlesbians), and 63 provided responses for the treatment score (24 lesbians and 39 nonlesbians).

In the current study, lesbians had a higher FertiQoL total score (M = 91.65, SD = 14.88) than nonlesbians (M = 85.92, SD = 20.97), with a mean difference between groups of 5.73 and a 95% CI [−4.277, 15.739] that includes zero (Table 20). Levene's test was not significant, p = .102, so we assume that the population variances are equal. Table 20 displays the equal variances assumed details for the independent samples t-test. The test was not significant, $t(59) = 1.146$, p = .256.

Table 20

Independent Samples T Test for Mean FertiQoL Total Score

	Levene's test		*t*-Test for equality of means					
Equal variances	*F*	Sig.	*T*	*df*	Sig. (2-tailed)	Mean difference	*SE* difference	95% CI
Assumed	2.754	0.102	1.146	59	0.256	5.731	5.001	[−4.277, 15.739]
Not assumed			1.245	57.378	0.218	5.731	4.605	[−3.489, 14.951]

Among participants, lesbians had a higher FertiQoL core score (M = 64.96, SD = 12.58) than nonlesbians (M = 60.32, SD = 14.37), with a mean difference between groups of 4.65 and a 95% CI [−1.693, 10.990] that includes zero (Table 21). Levene's test was not significant, p = .511, for the FertiQoL core score, so we can assume that the population variances are equal. Table 21 displays the equal variances assumed details for the independent samples t-test using the FertiQoL core score. The test was not significant, $t(83) = 1.458$, p = .149.

Table 21

Independent Samples T Test for Mean FertiQoL Core Score

	Levene's test		*t*-Test for equality of means					
Equal variances	*F*	Sig.	*t*	*df*	Sig. (2-tailed)	Mean difference	*SE* difference	95% CI
Assumed	0.436	0.511	1.458	83	0.149	4.648	3.188	[−1.693, 10.990]
Not assumed			1.526	60.712	0.132	4.648	3.045	[−1.442, 10.739]

Among participants, lesbians had a higher FertiQoL treatment score (M = 27.25, SD = 5.89) than nonlesbians (M = 26.41, SD = 7.39), with a mean difference between groups of .840 and a 95% CI [−2.719, 4.398] that includes zero. Table 22 displays the equal variances assumed details for the independent samples *t*-test using the FertiQoL treatment score. Levene's test was not significant, p = .319, for the FertiQoL treatment score, so we can assume that the population variances are equal. The test was not significant, $t(61) = .472$, p = .639.

Table 22

Independent Samples T Test for Mean FertiQoL Treatment Score

	Levene's test		*t*-Test for equality of means					
Equal variances	*F*	Sig.	*t*	*df*	Sig. (2-tailed)	Mean difference	*SE* difference	95% CI
Assumed	1.011	0.319	0.472	61	0.639	0.840	1.780	[−2.719, 4.398]
Not assumed			0.498	56.866	0.620	0.840	1.686	[−2.536, 4.216]

The analyses for RQ2 affirmed the null; there was not a statistically significant difference in FertiQoL total, core, or treatment scores among lesbians and nonlesbians. While the FertiQoL mean scores were not significantly different in the current study, the treatment score had the narrowest margin between means (less than one).

Research Question 3: Degree of Outness Among Lesbians

RQ3: What is the difference in the degree of outness as measured by the ALIDA-II between lesbians with and without children?

Seventy-five of the 102 lesbian participants completed the ALIDA-II. Three nonlesbians completed the ALIDA-II, and I excluded these from the analysis. To assess RQ3, I used the compare means, independent samples *t*-test in SPSS and selected cases with ID = 0 (lesbian). Table 23 shows the descriptive statistics for the comparison of the degree of outness measured using the ALIDA-II among lesbians by parental status. In this study subset, there were 33 with and 42 without children.

Table 23

Descriptive Statistics for Mean ALIDA-II Score by Parental Status

Are you a parent (bio, co, step, adoptive, foster, etc.)?	*n*	Mean	*SD*	*SE* mean
Yes	33	79.03	20.995	3.655
No	42	56.52	15.363	2.371

For RQ3, Levene's test was significant, $p = .029$, for ALIDA-II, so we can assume that the population variances are different. Table 24 displays the equal variances not assumed details for the independent samples *t*-test using the ALIDA-II. The test was significant, $t(56.75) = 5.17$, $p < .001$. Lesbian parents had a higher ALIDA-II score ($M = 79.03$, $SD = 20.99$) than nonparents ($M = 56.52$, $SD = 15.36$), indicating a higher degree of outness. The mean difference between groups was 22.51, and the 95% CI [13.783, 31.230] does not include zero, agreeing with the significant *p*-value.

Table 24

Independent Samples T Test for Mean ALIDA-II Score by Parental Status

Equal variances	Levene's test		*t*-Test for equality of means					
	F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean difference	*SE* difference	95% CI
Assumed	4.965	0.029	5.360	73	0.000	22.506	4.199	[14.139, 30.874]
Not assumed			5.167	56.749	0.000	22.506	4.356	[13.783, 31.230]

I reject the null hypothesis for RQ3 and affirm the alternative. Lesbians with children had a statistically significant difference in the degree of outness (higher score) compared with lesbians without children, as measured by the ALIDA-II.

Summary

The population subsets in the current study had similar demographic profiles based on age, race, and education, with slight distribution differences in employment status and income. Most were White, employed full time, and held a graduate degree; nonlesbian women reported higher household income. Eighty-six percent of lesbian parents had ART experience, compared with 56.8% of nonlesbian parents, and this difference was statistically significant at the .05 level.

There were three research questions to be assessed based on responses from the 314 participants and the appropriate study subsets. Each involved describing the sample and testing the significance of the associations. RQ1 included all participants with data. RQ2 was a subset based on ART experience (cases selected based on the response "I have experience with fertility, infertility, or some type of assisted reproduction"). RQ3 used the subset of participants who self-identified as lesbians. To test the association

between parental status, insured status, and perceived stress (RQ1), I used binary logistic regression. For RQ2 and RQ3, I used the comparison of means to assess the independent samples *t*-test. For RQ1, the model was sensitive to insured status and perceived stress; most identify with was also a statistically significant predictor of parental status but region and income were not statistically significant. There were no statistically significant differences in ART experience based on the FertiQoL (total, core, and treatment) scores between groups for RQ2. However, there was a statistically significant difference in the degree of outness measured by ALIDA-II between lesbians with and without children (RQ3).

In Chapter 5, I interpret the findings in the context of the theoretical framework and available literature. I discuss the study limitations, recommendations for future research, and suggestions for improvements in policy and practice as a matter of public health. Lastly, I describe the potential positive social change impact.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Women who identify as lesbian may experience stigma and stress, which can have an adverse impact on health (Alencar Albuquerque et al., 2016; Denton et al., 2014; Eliason, 2014; Meyer, 2015). With restrictions like the Defense of Marriage Act, women in same-sex relationships often lack access to equal benefits such as health care insurance (Perone, 2015). Barriers like lack of insurance coverage can contribute to differences in health care access including reproductive options (Flenar et al., 2017; Müller, 2017), which leads to minority stress.

I collected socioeconomic and sociocultural information from lesbian and nonlesbian women regarding their parental status, experience with fertility/infertility, health care insurance, and perceived stress. In this final chapter, I review the study purpose, the statistical process for assessing the relationship between the selected variables, and the interpretation of the research findings. I conclude with a discussion of the public health importance and potential social change impact of this research and include recommendations for future research.

Summary of the Findings

I recruited half as many women who self-identified as lesbian (102) compared to women who self-identified as nonlesbian (212). The population subsets in the current study had similar demographic profiles based on age, race, and education, with slight distribution differences in employment status and income. Most participants were White, employed full time, and held a graduate degree; nonlesbian women reported higher

household income. Eighty-six percent of lesbian parents had ART experience compared to 56.8% of nonlesbian parents, and this difference was statistically significant at the .05 level.

Insured Status, Perceived Stress, and Parenting Choice

The first research question addressed the predictive relationship between insured status, perceived stress, and parental status among lesbians and nonlesbians. Among lesbians, the split was nearly even between parents (49%) and nonparents (51%), whereas most nonlesbian participants were parents (73.1%). The results of the logistic regression analyses indicated that insured status (p = .010) and perceived stress (p = .035), had statistically significant associations with parenting status indicating a positive and predictive relationship with parental status. The odds that a participant with fertility limits or maxed out coverage is a parent were 2.756 times higher than those with no insurance or no fertility coverage. The addition of most identify with was also statistically significant as a predictor in the model (p = .001).

Nonlesbians were less aware of their insurance coverage for fertility compared to lesbians, suggesting they had less of a need to know. Like findings reported by Buchmueller and Carpenter (2010), in the current study, there was a disparity in insured status between lesbians and nonlesbians. Lesbians were more likely to lack any health insurance or had a lack of fertility/infertility coverage (19.6%) compared with nonlesbians (11.3%). Among parents, a higher percentage of lesbians had ART experience (86%) than nonlesbians (56.8%); conversely, 14% of lesbians compared with 41.3% of nonlesbians did not have ART experience. More lesbians indicated no desire to

be a parent (21.6%) compared to nonlesbians (14.2%). The most notable difference in the perceived stress scores was that there were no lesbians in the high PSS range; overall, the majority fell into the moderate stress range.

Fertility Quality of Life

The second research question addressed whether the FertiQoL scores differed between lesbians and nonlesbians who reported experience with fertility, infertility, or some form of assisted reproduction (ART experience). The between-group (lesbian and nonlesbian) differences in FertiQoL total, core, and treatment scores were not statistically significantly different, $p > .05$. Lesbians scored higher than nonlesbians with a mean difference of 5.73 in total score and 4.65 in core score, and the treatment score had the narrowest margin of 0.840. These findings appear to reflect an association between fertility intentions and fertility behaviors, as previously described by Schoen et al. (1999).

Degree of Outness Among Lesbians

The final research question addressed whether the degree of outness differed between lesbians with and without children. The mean score was statistically significantly different, $p < .001$ between the groups, so I rejected the null hypothesis and affirmed the alternative hypothesis. The degree of outness based on the ALIDA-II score was statistically significantly higher among lesbians with children.

Interpretation of the Findings

There were several similarities in the demographic characteristics between the population subsets, but I also noted some unanticipated differences in the study sample. For example, 50% or more of the respondents within each subgroup had some ART

experience (53.9% lesbian, 50% nonlesbian). This may be what drew individuals to participate in this study. Findings indicated a lack of awareness concerning health insurance status in terms of fertility/infertility or reproductive coverage, with 51.9% of all participants unaware of their policy terms. These findings align with work previously published by Daniluk et al. (2012) and Daniluk and Koert (2013), who noted that a gap exists in knowledge about fertility and ART among adult men and women who are childless. But awareness of the fertility lifespan and the costs and limitations of ART treatment is essential to making informed childbearing decisions (Daniluk & Koert, 2013; Daniluk et al., 2012; S. K. Mishra, 2014; A. Wu et al., 2013). Thus, this study contributes to this needed understanding, which addresses a barrier to seeking health care that may contribute to disparities attributable to social stigma and discrimination (Schwartz & Baral, 2015).

Further, based on the current study sample of 314 participants, there was a statistically significant association between health insured status and parental status. Perceived stress also had a statistically significant association with parental status in the model. Although this observation is important, there are additional aspects to explore, as the PSS-14 did not discern the source of stress. Identity (i.e., lesbian/nonlesbian) was the most statistically significant variable when added to the model. This finding supports the work of Denton et al. (2014), who noted that experiences of perceived discrimination may be linked to expectations of rejection, a potential risk for lesbians in the health care setting. As a matter of public health, positive changes that provide an infrastructure supportive of lesbian parents would reduce the negative effects of minority stress

(Cherguit et al., 2013). This evidence supports minority stress as a potential factor for lesbians considering parenthood (see Schwartz & Baral, 2015). Other factors likely influence parent choice beyond those considered in the current study. For example, experiences of lesbians specific to ART health care professionals could be a topic for future research, especially considering that lesbian experiences with health professionals can either be positive and affirming or insulting and homophobic (O'Neill et al., 2013).

Another important finding was that for participants with ART experience, there was not a statistically significant difference based on the FertiQoL total, core, and treatment scores between the population subgroups; however, the narrowest margin between group means was in the treatment score (less than 1). A small difference in the treatment score could reflect a difference in the experience of lesbians who seek ART, as Marques et al. (2015) found regarding general encounters of lesbians with health services. Overall, lesbian scores were higher than nonlesbian scores in the current study. These findings align with work by Borneskog, Lampic, Sydsjö, Bladh, and Svanberg (2014), who reported higher relationship satisfaction among lesbian couples compared with their heterosexual counterparts regardless of the ART journey or outcome.

Lastly, the ALIDA-II score as a measure of the degree of outness was statistically significantly different between lesbians with and without children, an important factor added to the ALIDA-II by van Dam (2015). The degree of outness is an essential measure in understanding potential health-related issues associated with disclosure of sexual orientation (van Dam, 2014, 2015). Self-disclosure may be related to minority stress, and homonegative experiences may adversely impact willingness to disclose. Discussion of

sexual orientation is likely secondary to traditional care rather than part of the holistic approach (Macapagal et al., 2016; Munson & Cook, 2016). This is an area of health care in need of improvement.

Although insurance coverage often dictates what evidence is required to move to the next level of fertility treatment, some couples, particularly lesbians, may desire and benefit from a more aggressive approach (Dar et al., 2015; Eyler et al., 2014). Less invasive methods are used to manage cost and risk, but one-size guidelines are outdated and were established to treat traditional heterosexual couples (Marvel et al., 2016; S. K. Mishra, 2014). Lesbians may benefit from a more progressive approach, which may require changes in fertility policies and practice (Carpinello et al., 2016; Charlton et al., 2011; Greenfeld & Seli, 2016). Policy updates, such as changes to fertility options based on the individual rather than blanketed factors that enhance options for all, may reflect positive social change with public health impact for lesbians seeking ART.

Study Findings and Minority Stress Theory

Health risks and health outcomes are affected by sexual minority health experience, including access to health care (N. Hsieh & Ruther, 2016). Studies have shown that members of the LGBT community lack access to health care and that disclosure of sexual orientation can adversely impact the health care experience (Farrow, 2015; Germanos et al., 2015; Homma et al., 2016; Law et al., 2015; Macapagal et al., 2016). In the current study, findings indicate a lack of awareness of fertility coverage, yet at least half of the participants had some type of ART experience. For lesbians, fear of disclosure can lead to derogatory encounters or refusal of care from providers,

contributing to minority stress (Quinn et al., 2015; van Dam, 2014). But the results from the ALIDA-II in the current study showed that lesbian parents had a higher degree of outness than lesbian nonparents, contributing evidence that differences exist between lesbians with and without children. Lesbians are made virtually invisible or at least marginalized by current societal institutions (Meyer, 2015), and such conditions or events create minority stress. Lesbians may benefit from positive social change that supports self-disclosure, reducing stigmatized stress.

Limitations of the Study

Because this was the first study of its kind to quantitatively explore the association between insured status, perceived stress, and parental status among lesbians and nonlesbians, it was not possible to compare findings with those from previous studies. There were also some anticipated limitations with the current study, including recruitment and the phrasing of several research questions. Other limitations include the fact that more than 90% of participants were White and nearly half (49.3%) were from two New England states (Connecticut and Massachusetts).

Additionally, the total number of participants met the estimated number required, and the distribution between lesbians and nonlesbians was better than expected, yet there were missing responses that could have affected the results. For example, the FertiQoL total, core, and treatment scores each had a different number of responses. Of 55 lesbians and 106 nonlesbians with ART experience, the average number of lesbian responses for the FertiQoL was 25, and nonlesbian responses averaged 45. Similarly, not all lesbians completed the ALIDA-II. Incomplete responses are a risk with anonymous, online,

quantitative surveys. I monitored survey responses for the key variables (insured status, perceived stress, parental status). The impact of missing data, if any, could not be fully assessed until all variables were coded, scores were calculated, and data were analyzed. I powered the study based on RQ1, and there were minimal missing data among those variables.

Missing or partial responses, lack of regional distribution, race, and education clusters could limit the generalizability of the findings. Wording of questions narrowed the response options (i.e., choice of lesbian or nonlesbian, insured status categories, and ART experience), which impacted the results. The choice to use published tools (PSS-14, FertiQoL, and ALIDA-II) was limiting, where others may have been more suitable. Future researchers could consider developing novel instruments.

Recruitment Limitations

I relied on recruitment through social media, e-mail, and snowballing. The study sample was random but may have been somewhat narrow, given the reliance on personal interactions and sharing via networking. I did recruit the projected 300 participants and exceeded the initial estimate of 80 needed for a lesbian-only study. But the number of Black or African American and Asian participants was low, so the generalizability of findings is limited based on a predominantly White study sample. A future study could focus on subpopulations based on race to explore differences. Further, most respondents were from New England states which limits generalizability of the study results. I employed professional networking to widen the recruitment, but this still had limitations.

Future researchers could attempt broader sampling or focus on a region or community to delve into detail (Barefoot et al., 2017).

Limitations Related to the Survey Questions

Colleagues provided feedback about the first survey question, which limited the self-identification to two categories: lesbian and nonlesbian. The risk of participants disliking the limited choices was anticipated and accepted. While there is no way to know definitively, some nonheterosexual women may have selected nonlesbian because they do not identify with the "lesbian" label. Even within the LGBT community, there is a wide range of self-identification and some who dislike binary choices (Durso & Meyer, 2013). The wording could have had an impact on the results and the generalizability of findings (see Herman, 2014). Given the quantitative nature of the study, response options were deliberately limited to facilitate summarization.

The decision to use "Are you a parent?" as the dependent variable in the analysis for RQ1 had limitations. Alternatively, I could have used the question "Thinking about parenthood, fertility, infertility, or any type of assisted reproduction, which category best describes you/your experience?" The limitation with the latter was that wanting to be a parent and trying alternative methods does not guarantee becoming a parent. Schwartz and Baral (2015) described how most studies of marginalized women have focused on the child, while preconception and ART effectiveness have been understudied. For future research, I would suggest crafting an alternative question to better distinguish parental desire or intent from status. Within the current study, three participants indicated no desire to be a parent, yet their parental status response was yes.

Some of the study questions were intentionally restrictive which affected the results. For example, the response categories used for health insured status and ART experience made it challenging to address the aspirational level of inquiry. I did not intend for perceived stress to reflect minority stress directly; it is highly unlikely that any single factor could (see Puckett et al., 2017). When designing this novel study, I did not anticipate these nuances. Learnings from the current study offer a foundation for future research.

Limitations Based on Timing and Social Climate

I based the research questions on the assumption that factors associated with parenting choice differ between lesbian and nonlesbian women. For example, under the Defense of Marriage Act, same-sex couples lacked access to insurance as a couple or family (Perone, 2015). If I had conducted this study before the Defense of Marriage Act was overturned in 2015, the results may have been different. In fact, only one lesbian reported no health insurance, while 18.6% of lesbians lacked fertility coverage. I did not include factors like human resource or insurance policies, health care practices, or political climate in the current study; these considerations are also important to understand. The 2020 U.S. Census demonstrates how tenuous favorable changes might be with the removal of questions to count LGBT Americans (Moreau, 2018). Additional studies are recommended to assess the sociocultural factors that were out of scope for the current research.

Recommendations

There is a lack of quantitative studies that have examined factors associated with lesbian parenting choice. Individuals who are marginalized are often subjected to discrimination, which creates minority stress, a topic that has not been well studied in public health (Meyer, 2015). In the current study, lesbians were more likely to be un- or underinsured when it came to fertility coverage compared to nonlesbians. Insured status was positively and statistically significantly associated with parental status in the model. This finding aligns with work reported by Buchmueller and Carpenter (2010), who also noted that lesbians had a gap in utilization of coverage. The participants in the current study were predominantly White, well educated, and employed. A future study could explore regional variations to better understand generalizability.

Perceived stress was another variable explored in the current study, and it was also associated with parental status in the model. No lesbians were in the high-stress category. I am unable to conclude, however, which aspect of parenting (if any) the stress may be associated with. Future research should more directly target aspects of parenthood from attempts at conception and beyond (e.g., insurance, health care access, treatment experience, home-related stressors) as they relate to outcomes (Pandey et al., 2014).

Results from the ALIDA-II demonstrate that not all lesbians are fully disclosed, although lesbians with children are more out. As Carrotte et al. (2016) found, much improvement is needed to improve information collection methods. The current study used a convenience sample and was highly reliant on networking, so the pool may have

had some level of bias. Lesbians were not asked about their partners/families or if there were other reasons that contributed to nondisclosure. Family care needs is a potential topic for exploration in future research.

There is a lack of quantitative research on preconception care, access, experiences, and outcomes of lesbians who attempt ART. In the current study, approximately half of each group (lesbians and nonlesbians) had some experience with fertility, infertility, or ART. Fertility treatment is expensive and invasive and can continue for many months or years, and the levels of associated stress can have an impact on outcomes (Stevenson & Sloane, 2017). While in the current study, the FertiQoL scores were similar for lesbians and nonlesbians, efforts are still needed to destigmatize assisted reproduction and remove the barriers to care (Gato, Leal, & Tasker, 2019). Local organizations like RESOLVE New England (n.d.) are leading the way in "building a caring community within New England to support, inform, and advocate for all those struggling with fertility and family building." National or global efforts will likely be slow to follow. Unfortunately, the United States is not a leader in this regard (Faccio, Iudici, & Cipolletta, 2019). A future study should specifically examine the ART-related experiences of lesbians to better assess the impact of provider behaviors and attitudes in this setting (Hayman, Wilkes, Halcomb et al., 2013).

Continued research is needed, especially as the social and political climates shift and affect specific subsets of the general population (Moreau, 2018). In the current study, the focus was on lesbians, parental status, insured status (related to ART coverage), and perceived stress. Researchers should strive to continue to understand the barriers this

marginalized population faces in all aspects of health care (policies, coverage, access, attitudes, etc.) and continue to add evidence for needed social change. Expansion of existing data collection resources to specifically include lesbians and their families would signify positive social change (Carrotte et al., 2016; Wolff et al., 2017).

Implications for Positive Social Change

In the field of social epidemiology, researchers often use the survey method to analyze the social determinants of health based on a population-representative sample (Chandola et al., 2014). As a matter of public health, we should better understand the health-related barriers facing lesbians and address them. The current study was the first of its kind to quantitatively explore factors associated with parenting of lesbians and their ART experience. The fact that more than 50% of all participants were unaware of their health insurance policy terms for fertility, infertility, or assisted reproduction highlights an opportunity for positive social change and public health impact. There are gaps beyond provision of insurance, and any change in strategy should address the unmet medical needs and reduce disparities for lesbians. In this study perceived stress was statistically significant in the model of association with parental status. We know that marginalized groups experience discrimination, and perceived stress was only one of many potential indicators of minority stress. These aspects have not been fully developed within public health (Meyer, 2015).

An individual's reproductive choice should not be assumed or limited based on sexual orientation, yet lesbian couples still face challenges when seeking ART or alternative paths to parenting (De Wert et al., 2014; Eyler et al., 2014; Rozental &

Malmquist, 2015). Assisted reproduction is often considered a matter of ethics when defining family (Mathieu, 2013; S. K. Mishra, 2014). All women should have equal and unlimited access to reproductive choice and care, yet the financial burden is a factor in this decision, along with time and emotional expense (Pennings, 2015; Pratesi, 2012; A. K. Wu et al., 2014). While many insurance carriers have provisions for treating infertility, the benefits vary greatly, as was seen for lesbians in the current study (Hamilton & McManus, 2012; Jouannet & Spira, 2014; Murphy, 2015).

There is a lack of research exploring the lesbian reproductive (ART) experience (Schwartz & Baral, 2015). Most previously reported studies were qualitative or longitudinal (Fredriksen-Goldsen et al., 2014; Fredriksen-Goldsen, Kim et al., 2013). Within this small study sample, lesbians had higher mean scores overall than nonlesbians in the FertiQoL. This observation may reflect an association between fertility intentions and attitudes, since lesbians may have few alternatives to becoming parents. It is imperative to understand the factors influencing the decisions of lesbian and same-sex couples to pursue parenthood (Morin et al., 2014; Webb et al., 2016). This knowledge has implications essential for educating policy makers on how to reduce or eliminate disparities as a matter of public health (Alessi, 2014; Hatzenbuehler et al., 2013; Lemoine & Ravitsky, 2013). Shifting social constructs to improve social inclusivity would minimize minority stress and enhance the ART experience of this unique population subset of women (Wolff et al., 2017). Ensuring health care access and favorable social conditions would promote positive change for lesbians considering parenthood (Patterson, 2017; Pratesi, 2012; Stone & Weinberg, 2015; Verbiest et al., 2016).

This quantitative study, which explored the association among parental status, insured status, and perceived stress, was novel. In the literature, no studies are available for comparison that quantitatively examined variables in the experience of lesbians considering parenthood or seeking ART (Power et al., 2010). Overall, the findings from this study suggest that lesbians may face fertility-related insurance challenges but generally have higher fertility QoL than nonlesbians and that lesbians with children have a greater degree of disclosure.

Conclusion

The purpose of this study was to sample lesbian and nonlesbian women to learn about factors associated with parental status. These data contribute to the epidemiologic evidence needed to understand parenting choice and reproductive experiences of lesbians compared with nonlesbians. Factors that contribute to fertility-related health disparities for lesbians as a minority population qualify under the tenets of public health. The study findings have implications for positive social change by reducing minority stress and improving lesbian reproductive opportunities and experiences.

The hypothesis was that health insured status and perceived stress would be factors of importance. As a sexual minority, lesbians may experience minority stress when facing barriers, particularly those related to health. The assumption was that identifying factors that create obstacles could influence policy as a matter of public health. Such improvements would reflect a positive social change. Where disparities exist in terms of health care access, they should be reduced or eliminated, and no group should be disproportionately affected. This study affirmed a difference in fertility-related

insurance coverage for lesbians compared with nonlesbians within the sample. Policy updates expanding reproductive options would reflect positive social change with public health impact for lesbians seeking ART.

Using primary data collection, 314 participants responded to the survey online. The women self-identified as a lesbian (102) or nonlesbian (212) and provided their state of residence and demographic details for age, education level, employment status, household income, and race/ethnicity. I chose to use the response to the question of parental status for the outcome of parenting choice rather than ART experience due to complexities that may not have addressed the question. I evaluated the predictive relationship between health insurance status and perceived stress with parental status. Logistic regression showed that insured status and perceived stress were statistically significant, as was most identify with; region and income were not statistically significant when added to the model. In the current study, the FertiQoL total, core, and treatment scores were not statistically significantly different between lesbian and nonlesbian women with ART experience. It is unclear if this indicates that the experience is the same for all women. The population subset was very small, which limits generalizability. Among lesbians, there was a statistically significant difference in the degree of outness, with higher scores among those who were parents.

This study had limitations but it was a success in achieving several objectives. Recruitment was adequate and with a desirable distribution between lesbians and nonlesbians. Self-identity, insured status, and perceived stress all had a statistically significant association with parental status. Of the two independent variables in the main

research question, perceived stress was predictive of parenting status, but insured status was not statistically significant in the model. Lesbians were twice as likely as nonlesbians to be uninsured or to lack fertility coverage. No lesbians in the current study had high-stress scores and most participants were in the moderate stress category.

Findings from this study add to the evidence of factors that contribute to minority stress of lesbians in the context of parenting and seeking ART. I identified gaps in my research and suggested areas for improvement with future studies. This type of data is needed to bring about social change and support public health. It is vital to continue to explore and identify health disparities among marginalized population subsets. One example is to improve policies and practice with enhanced data collection that is fully inclusive of lesbians and their families. Providing a more flexible path of fertility options for lesbians who choose to pursue parenting would have meaningful public health impact and reflect positive social change.

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Appendix A: Demographics, Insured Status, and Parenting Decision

Questions 2 through 8, inclusive, were from the U. S. Demographics – Snapshot Template available for free on Survey Monkey. The survey included new Questions 1 and Questions 9 through 11 added for this study. Those marked with an asterisk (*) required responses to proceed.

***Q1. For the purposes of this research, please select which of the following you most identify with**

0 = Lesbian

1 = Nonlesbian

Q2. In what state or U.S. territory do you live? (Coded numerically in alphabetical order, blank = ExUS or missing)

(Dropdown list)

***Q3. Which category below includes your age?**

1 = 18–20

2 = 21–29

3 = 30–39

4 = 40–49

5 = 50–59

6 = 60 or older

Q4. What is the highest level of school you have completed or the highest degree you have received?

0 = Less than high school degree

1 = High school degree or equivalent (e.g., GED)

2 = Some college but no degree

3 = Associate degree

4 = Bachelor degree

5 = Graduate degree

Q5. Which of the following categories best describes your employment status?

0 = Employed, working 40 or more hours per week

1 = Employed, working 1–39 hours per week

2 = Not employed, looking for work

3 = Not employed, NOT looking for work

4 = Retired

5 = Disabled, not able to work

Q6. How much total combined money did all members of your HOUSEHOLD earn last year?

1 = $0 to $9,999

2 = $10,000 to $24,999

3 = $25,000 to $49,999

4 = $50,000 to $74,999

5 = $75,000 to $99,999

6 = $100,000 to $124,999

7 = $125,000 to $149,999

8 = $150,000 to $174,999

9 = $175,000 to $199,999

10 = $200,000 and up

11 = Prefer not to answer

Q7. Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific islander, or some other race?

1 = White

2 = Black or African-American

3 = American Indian or Alaskan Native

4 = Asian

5 = Native Hawaiian or other Pacific Islander

6 = From multiple races

99 = Other (Latina)

Q8. Are you Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, Cuban-American, or some other Spanish, Hispanic, or Latino group?

1 = I am not Spanish, Hispanic, or Latino

2 = Mexican

3 = Mexican-American

4 = Chicano

5 = Puerto Rican

6 = Cuban

7 = Cuban-American

8 = Some other Spanish, Hispanic, or Latino group

9 = From multiple Spanish, Hispanic, or Latino groups

***Q9. Are you a parent (bio, co, step, adoptive, foster, etc.)?**

0 = No

1 = Yes

***Q10. Thinking about parenthood, fertility, infertility, or any type of assisted reproduction, which category best describes you/your experience?**

1 = I have no plan/desire to be a parent

2 = I have no experience with fertility, infertility or any type of assisted reproduction

3 = I have experience with fertility, infertility, or some type of assisted reproduction

***Q11. Which category best describes your health insurance status, in particular as it relates to coverage for fertility, infertility, and/or some form of assisted reproduction?**

1 = I do not have health insurance coverage

2 = I have health insurance but fertility/infertility treatment is not covered (all costs are out of pocket)

3 = I have health insurance, but there are limits for fertility/infertility or reproductive coverage (lifetime dollar limits, procedure restrictions, etc.)

4 = I have health insurance and have maxed out (used up) all of my fertility/infertility coverage

5 = I have health insurance but do not know about fertility/infertility or reproductive coverage

Appendix B: Perceived Stress Scale (PSS-14)

Cohen, Kamarck, and Mermelstein (1983) first described the PSS-14. The PSS is a measure of stress in examining associations with disease, including anxiety, depression, and mental health. Responses: 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, 4 = very often. Items 4, 5, 6, 7, 9, 10, 13 are reverse scored. I emailed the author for permission to use the PSS on June 11, 2018, and received permission the same day.

From: Sheldon Cohen [redacted]>
Sent: Monday, June 11, 2018 4:46 PM
To: Annette Silvia
Subject: RE: Permission to use PSS-14 in doctoral research study

Annette, You are welcome to use the PSS for your dissertation. Best of luck. SC

From: Annette Silvia [redacted]
Sent: Monday, June 11, 2018 4:19 PM
To: Sheldon Cohen
Subject: Permission to use PSS-14 in doctoral research study

Hello Dr COhen,
I am writing to request permission to use the Perceived Stress Scale in my doctoral research. The proposed title is "Socioeconomic and Sociocultural Factors Associated with Parenting Choice and Fertility Experience Among Lesbians Compared With Non-Lesbian Women".
Thank you in advance, and please let me know if you would like any additional information.
Best,
Annette Silvia

Appendix C: Fertility Quality of Life (FertiQoL International) Questionnaire

FertiQoL is free to use on the provision that the sponsors are acknowledged in any publication (Boivin et al., 2011). I received permission to use the FertiQoL on June 20, 2018.

From: Annette Silvia

Sent: Sunday, April 29, 2018 1:15 AM

To: [redacted]

Cc: Annette Silvia

Subject: Permission request to use FertiQol for my dissertation research

Hello,

I am a doctoral student at Walden University preparing for my oral proposal defense, and just realizing I had not formally requested permission to use this tool in my study. I see online that the authors must be credited and the tool, under terms and conditions, is available for use. Please consider this my formal request.

My proposed research is to determine which if any socioeconomic and sociocultural factors, controlling for sexual orientation, are associated with parenting decision and assisted reproduction experience. I would be happy to provide any additional details if needed.

Many thanks,

Annette Silvia

From: Annette Silvia

Sent: Wednesday, May 2, 2018 12:16 PM

To: [redacted]

Subject: Re: Requesting permission to use FertiQol for my dissertation research

Hello,

Appreciate confirmation, or if there are additional questions or information required?

Thank you,

Annette Silvia

From: Annette Silvia

Date: Tuesday, 15 May 2018 19:36

To: [redacted]

Subject: Re: 3rd attempt Requesting permission to use FertiQol for my dissertation research

Hello,

Per the guidance provided on your web site I am requesting permission for use of the FertiQoL in my doctoral research study.

Happy to provide additional details if needed.

Thank you,

Annette Silvia

From: Fertiqol Studies

Sent: Wednesday, June 20, 2018 2:10:23 PM

To: Annette Silvia

Subject: Re: 3rd attempt Requesting permission to use FertiQol for my dissertation research

Dear Annette,

Yes please do use the FertiQoL tool according to the terms of reference taking note of the terms of reference shown here: http://sites.cardiff.ac.uk/fertiqol/download/

Thanks, Jacky

Appendix D: A Lesbian Identity Disclosure Assessment (ALIDA)

The use of the ALIDA-II survey is encouraged, and permission was granted by Dr. Mary Ann van Dam via personal email correspondence (23 June 2017).

From: Mary Ann A Van Dam

Sent: Friday, June 23, 2017 2:03:45 AM

To: Annette Silvia

Cc: Elaine Musselman

Subject: Re: Request for use of the ALIDA-II

Hello Annette,

I am in Nairobi right now and I may lose a connection at anytime so my answer will be brief. Please us it! I want it to be used but could you please tell me about your results and how they worked for you and if it was published. The full instrument is in the publication in the Journal of Homosexuality and it also describes how to come to a score. If you have trouble with it, I will be back in about 3 weeks. Let me know how it works for you. I didn't want to have propriety over it because the phenomenon of disclosure needs to be studied from many angles and I did not want any hindrance to its use. Thanks for asking.

Mary Ann

Sent from my iPhone

Dr. M. A. van Dam RN, Ph.D, PNP

On Jun 23, 2017, at 11:16 PM, Annette Silvia wrote:

Thank you so much Dr. van Dam! I would be glad to share my work with you . . . I may reach out again as I progress closer to initiation- I imagine there will be more questions! I hope your trip is enjoyable and wish you safe travels. Nairobi must be an interesting experience.

Best,

Annette