FACTORS ASSOCIATED WITH AND IMPACTING COMING OUT FOR SEXUAL IDENTITY MINORITIES IN THE UNITED STATES

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ปัจจัยที่มีความสัมพันธ์กับการเปิดเผยอัตลักษณ์ทางเพศของคนกลุ่มน้อยทางเพศในประเทศสหรัฐอเมริกา

นายแมทธิว โรเบิร์ต คูเซน

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
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แมทธิว โรเบิร์ต คูเซน :
ปัจจัยที่มีความสัมพันธ์กับการเปิดเผยอัตลักษณ์ทางเพศของคนกลุ่มน้อยทางเพศในประเทศสหรัฐอเมริกา. (FACTORS ASSOCIATED WITH AND IMPACTING COMING OUT FOR SEXUAL IDENTITY MINORITIES IN THE UNITED STATES)
อ.ที่ปรึกษาหลัก : วิราภรณ์ โพธิศิริ

กับการเปิดเผยตัวตนถึงการเป็นเลสเบียน เกย์ ไบเซ็กชวล เควียร์ และอัตลักษณ์ทางเพศอื่นๆ (LGBQ+) ต่อเพื่อนและครอบครัว และการถูกเปิดเผยตัวตนกับสมาชิกในครอบครัวก่อนที่ตนเองจะพร้อมหรือโดยไม่ได้รับความยินยอม การวิจัยนี้ใช้ข้อมูลจากโครงการสำรวจ Generations Study ปี 2559-2560 ซึ่งเป็นการสำรวจระดับประเทศที่รวบรวมข้อมูลจากกลุ่มบุคคล LGBQ+ ในสหรัฐอเมริกา (จำนวนตัวอย่าง = 1,416 คน) และวิเคราะห์ข้อมูลเชิงปริมาณด้วยสถิติเชิงพรรณนา และการวิเคราะห์พหุตัวแปรด้วยแบบจำลองถดถอยโลจิสติก และแบบจำลอง Cox Proportional Hazard

ผลการศึกษาพบว่ามีปัจจัยทางประชากรและสังคมและปัจจัยบุคคลอื่นๆ หลายปัจจัยที่มีความสัมพันธ์กับการเปิดเผยตัวตนและถูกเปิดเผยตัวตนในฐานะชนกลุ่มน้อยทางเพศอย่างมีนัยสำคัญทางสถิติ ปัจจัยเหล่านี้ได้แก่ โคฮอท (อายุ) เพศ เชื้อชาติ รสนิยมทางเพศ การศึกษา ประสบการณ์ที่ไม่ดีในวัยเด็ก (ACE) และประสบการณ์การบำบัดเพื่อเปลี่ยนรสนิยมทางเพศ ผลจากการวิเคราะห์ด้วยแบบจำลอง Cox Proportional Hazard พบว่าอายุมัธยฐานของการเปิดเผยตัวตนต่อเพื่อน และต่อครอบครัวอยู่ที่ 18 และ 20 ปี ตามลำดับ อายุมัธยฐานสำหรับการถูกเปิดเผยตัวตนโดยครอบครัวมีค่าสูงกว่าอยู่ที่ 25 ปี แม้งานวิจัยชิ้นนี้จะมีข้อจำกัด ซึ่งส่วนใหญ่เป็นผลมาจากข้อมูลที่ใช้มีลักษณะเป็นภาคตัดขวาง แต่ผลการศึกษาช่วยให้ผู้กำหนดนโยบายและผู้ปฏิบัติงานที่ทำงานเกี่ยวข้องกับการกำหนดกฎหมายทราบว่าเป้าหมายควรเน้นไปที่ใด และควรสนับสนุนในประเด็นใดที่จะช่วยลดความไม่เสมอภาคด้านสุขภาพของกลุ่มบุคคล LGBQ+ ลงได้ ผลการศึกษายังได้ชี้ให้เห็นถึงผลกระทบทางลบที่กลุ่มบุคคล LGBQ+ ต้องเผชิญ ซึ่งสามารถนำมาใช้สนับสนุนการออกกฎหมายต่อต้านเกย์ในหลายรัฐทั่วประเทศสหรัฐอเมริกา

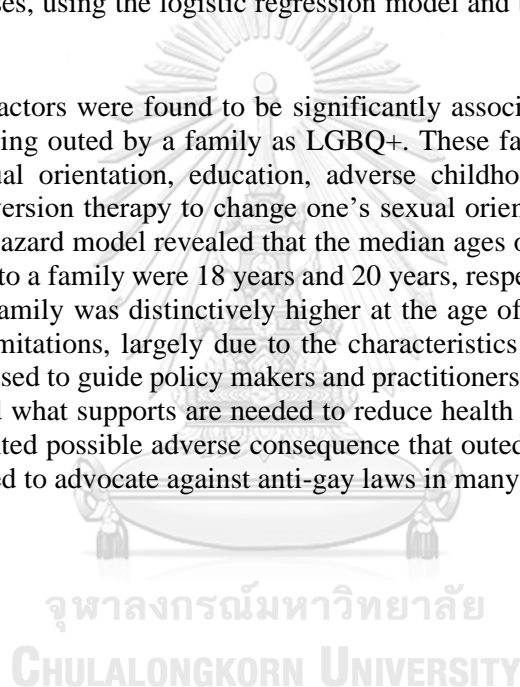|			
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This research aims to explore socio-demographic and other individual factors potentially associated with the probability of coming out as Lesbian, Gay, Bisexual, Queer and other sexual identities (LGBQ+) to friends and family and the probability of being outed as LGBQ+ to family members before being ready or without consent in the United States (UCS). This research analyzed quantitative data from the 2016-17 Generations Study, a nationally representative population-based survey collecting information from LGBQ+ persons residing across the US (N=1,416), and employed both descriptive and multivariate analyses, using the logistic regression model and the Cox proportional hazard model.

Several factors were found to be significantly associated with the probability of coming out and being outed by a family as LGBQ+. These factors included cohort (age), gender, race, sexual orientation, education, adverse childhood experiences (ACE) and experience in conversion therapy to change one's sexual orientation. The results from the Cox proportional hazard model revealed that the median ages of coming out to at least one straight friend and to a family were 18 years and 20 years, respectively. The median age for being outed by a family was distinctively higher at the age of 25 years. Even though this study had some limitations, largely due to the characteristics of cross-sectional data, the findings could be used to guide policy makers and practitioners to determine legislations on where to focus and what supports are needed to reduce health disparities for LGBQ+. The study also highlighted possible adverse consequence that outed LGBQ+ persons may face, which could be used to advocate against anti-gay laws in many states across the US.

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Matthew Robert Kusen

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CHAPTER 1: INTRODUCTION AND BACKGROUND

'Coming out' is a journey of self-discovery and is defined as the disclosure of one's sexual orientation and identity to others including family, friends, colleagues, acquaintances and/or strangers. In a world where heteronormativity is everywhere and most people assume that everyone is heterosexual unless told otherwise, the coming out process is something that a sexual identity minority may need to do many times throughout their life. The process of coming out for the first time is one of the most critical, stressful, and life changing experiences for Lesbian, Gay, Bisexual, Queer and other sexual minority (LGBQ+) individuals (Cass, 1979; Rosati et al., 2020). Depending on the environment and an individual's readiness, the coming out process may include negative, positive or aspects of both to the individual in the short and long term.

Evidence has shown that the coming out process may result in traumatic life events such as rejection and discrimination due to sexual minority status and stigma (Puckett et al., 2015). This can affect the health and well-being of LGBQ+ persons through their life. Besides rejection and discrimination, some negative aspects after coming out or being outed that LGBQ+ people face include negative mental health outcomes including suicide ideation (Legate et al., 2012), and for persons in a relationship, the threat of being outed may be used as a tactic for intimate partner violence (Brown & Herman, 2015).

Aside from the negative aspects of coming out, an increasing number of studies have also found that the coming out process may result in positive outcomes at individual, community and societal levels. Some previous studies have found that when LGBQ+ persons chose to come out, they may experience better mental health outcomes afterward (Miquelon & Vallerand, 2008; Ryan et al., 2010) thanks to acceptance from friends, family and reduced anxiety about keeping a secret so integral to one's identity and life. Additional studies have also noted greater cognitive flexibility and creativity (Amabile, 1983; Grolnick, 1987) and a higher satisfaction at work and in relationships when the coming out process is done in supportive environments (Baard, 2004; Legate et al., 2012). The supportive environment is an important factor to enable these positive aspects of coming out and with larger numbers of persons coming out as LGBQ+, we may see more acceptance and an increase in supportive environments. This has led to greater social acceptance of LGBQ+ persons and an increase in legal protection nationally and in a number of US states to enhance the participation of sexual minorities fully into society.

There are currently no reliable global estimates available on median age of coming out nor internationally representative figures of the number of sexual and gender minorities in large part due to most censuses and population-based surveys do not collect this data. In some high-income countries, most notably in the United States the median age of coming out is now available thanks to recent population-based surveys although the U.S. census does not ask questions on sexual identify nor age of coming out. In the U.S. according to a 2013 Pew study, the majority of LGBTIQ+ respondents (86%) say they have come out to at least one close friend although this number is much smaller in relation to coming out to a family member where only 56% have told their mother and only 39% have told their father (Taylor, 2013). Analysis from the authors of the Generations Study have found the median age of sexual identity milestones is occurring earlier for each generation as shown in Figure 1 below. The median age of coming out to at least one family member has reduced from 26.3 to 16.9 comparing the oldest to youngest age groups and LGBQ+ self-identification also has seen a reduction in median age from 18.3 to 14.0 comparing the oldest and youngest generations (Meyer, 2018).

Figure 1: *Median Age of Sexual Identity Milestones Across Three Age Cohorts.*
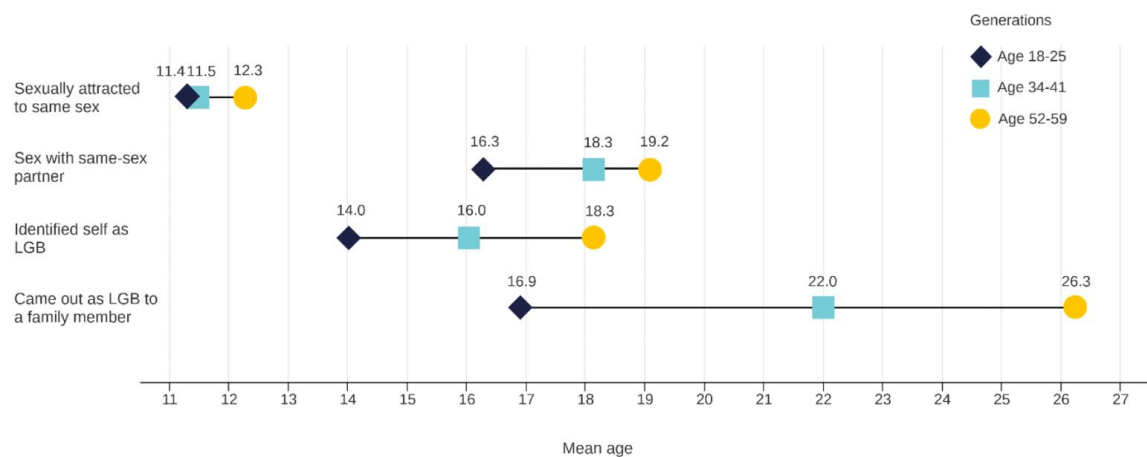
Source of Figure: *(Meyer 2020)*

According to the 2021 Global Acceptance Index, an index using 2,750 surveys conducted over 30 years to measure social acceptance of LGBTQ+ persons in each country, the United States has an acceptance score of 7.42 out of a total of 10 (ranked 23 of 175 countries) (Flores, 2021). While there are no official statistics on percentage of persons coming out across 175 countries, we can infer the number of people coming out in other countries on the

lower ends of the GAI will be much less than the U.S. Data and learnings from the U.S. around the factors associating with age of coming out may be of use across the globe for countries and activists who wish to see similar progress. According to the United Nations, all countries and relevant stakeholders should respect, protect, promote and fulfil the human rights of all Lesbian, Gay, Bisexual, Transgender, Intersex, Queer (LGBTIQ+) people and that supporting this group is necessary to achieve the Sustainable Develop Goals and ensure no one is left behind (Trithart, 2021). However, in all countries across the world, LGBTIQ+ people face many challenges including violence, stigma, exclusion, and discrimination.

In the U.S., there are only a small number of quantitative research studies that have explored demographic factors related to age of coming out as LGB+ and most studies were conducted in local contexts such as New York City (A. J. Martos et al., 2015). In other countries and contexts, there are little to no quantitative studies exploring age of coming out as LGBQ+. Some of the few quantitative research that does exist has focused on median age of coming out milestones with no known studies using survival analysis to better understand sexual identity milestones or assessing factors associated with being outed as LGBQ+ (Dunlap, 2016; A. Martos et al., 2015).

A note on terminology: LGBTIQ+ is the acronym widely used to describe sexual and gender minorities. This research is focused with the subset of sexual minorities and thus have used LGBQ+ wherever possible to describe the sexual identity group within the community. Gender minorities have different aspects that impact their journey of coming out and self-discovery that is not covered in this research. While LGBQ+ is preferred and used throughout, when referencing previous research studies and literature, we sometimes use LGBTIQ+ or related acronyms in the case that the original researchers focused on the wider group.

1.1.   Aims and Objectives

This study aims to examine the timing of coming out milestones for LGBQ+ persons and its socio-demographic correlates. More specifically, the study seeks to identify the age of first coming out as LGBQ+ to family and at least one straight friend for certain demographic and socioeconomic groups as well as the age of being first outed to family, and to compare the rate of reaching coming out milestones across different sexual identities and socio-economic groups. The study also investigates proportional risks and odds ratio related to the age of first

coming out and age of first being outed to family as LGBQ+ for each subgroup under investigation.

CHAPTER 2: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1. Structure of the Literature Review

The literature review began first by utilizing Google Scholar, Scopus, SpringerLink, and PubMed with terms such as "LGBT coming out", "sexual identity milestones", "sexual minority coming out", and "minority stress theory", and "survival analysis LGBT" to assess and locate peer-reviewed literature related to the topic of interest and related theories. Additionally, leading peer reviewed journals such as *LGBT Health*, *Journal of Homosexuality*, and the book *International Handbook on the Demography of Sexuality* were used to locate any additional peer-reviewed research related to the topic. Finally, a review of all journal articles using the Generations Survey dataset was reviewed provided by the University of Michigan's Data Sharing for Demographic Research (DSDR) platform and relevant articles by the Ilan H. Meyer as he is one of the most prominent scholars of sexuality research and the lead Principal Investigator of the Generations Study. The majority of literature was completed in the United States followed by smaller numbers of journal articles in Australia, the United Kingdom, and Canada. A mix of qualitative and quantitative articles were found as well as a Meta-Analysis and Systematic Review related to the topic. There were limited to no evidence on the topic from low and middle-income countries.

2.2. Theories

Three main theories including Minority Stress Theory, Social Oppression Theory and Intercontact Group Theory relate to our research study. Minority Stress Theory is the basis for all sexual and gender minority research as it aims to explain the reason sexual minorities have higher documented prevalence of mental health disorders due to stigma and discrimination based on their identity. It also helps to explain why coming out is an important life milestone for this group. Social Oppression Theory is another key theory to help explain how certain socio-demographic characteristics may result in poor health outcomes due to systematic oppression of certain groups and is integral to understanding how intersectionality and the

factors we have chosen may explain some of our findings. Lastly, Intercontact Theory may help to understand why certain groups have varying rates of coming out. Intercontact theory states that knowing someone who is LGBQ+ may help to reduce barriers, stigma and discrimination against LGBQ+ people by other members of society.

Minority Stress Theory helps to explain the rational for higher rates of mental health and poor health outcomes among sexual minorities due to additional stress, experiencing prejudice, expectations of rejection, internalized homophobia and perceived and real violence. Minority stress helps to differentiate from ordinary social stress as it relates to sexual identity that is constantly stigmatized relating to excess stress (Ilan H Meyer, 2003). Minority stress theory helps to underpin why a focus and analysis on LGBQ+ persons are needed in the demographic literature. It also helps us understand why the process of "coming out" exists and is an important milestone in sexual minority person's life.

Social Oppression Theory takes place when laws create unfair or unequal treatment for a specific social identify or group of people including sexual orientation, gender identify, race, religion or other minority groups. Oppression is a form of injustice where one group (e.g. heterosexual people) is privileged and maintained by a variety of mechanisms such as social norms, stereotypes, and institutional rules and legal frameworks (Taylor, 2016). LGBQ+ persons from diverse and minority backgrounds may face multiple levels of social oppression including racial discrimination, religious discrimination or gender discrimination. The idea that LGBQ+ persons intersecting identities may impact their decision to come out is at the core as to why we may see different factors affecting age of coming out and age of being outed to one's family without one's consent.

Intergroup Contact Theory is a theory that a contact hypothesis under particular conditions can help reduce prejudice between majority and minority groups. This means that for people from outside of a particular group, knowing and being in direct contact with a member of that minority group may reduce prejudice. Allport (1954) and other social scientists theorized and applied this concept to a number of countries and contexts mostly looking at race and ethnicity, and disability (Pettigrew, 1998). A number of researchers have also used this theory related to sexual identity and has shown to be effective in changing public opinion. Some theorized that it is especially effective related to sexual identify as LGB+ identities are "hidden" as compared with race, gender or physical disabilities that are more identifiable at first contact (Pettigrew & Tropp, 2006). This theory may help to explain why some socio-demographic factors may result in different age or ability to reach certain milestones given

the fact that societal and community factors may result in varying levels of acceptance or discrimination.

2.3. Literature

The literature review section covers three main topics related to the coming out process for sexual identity minorities. The first topic is related to sexual identity milestones and the process of coming out including details on age of coming out (Section 2.3.1). The second topic involves the examination of the impact of coming out on LGBQ+ individuals (Section 2.3.2). Lastly, the third topic concerns the factors associated with coming out and what previous studies have found in terms of the evidence related to trends of timing and rates of coming out within certain age cohorts, ethnicities, genders, and sexual orientations (Section 2.3.3.).

Scholarship on Lesbian, Gay, Bisexual and Queer identity up until the 20th century was classified as deviant and abnormal by a number of leading psychologist scholars including Sigmund Freud (Hall et al., 2021). Up until 1973, the American Psychiatric Association (APA) classified "homosexuality" as a disease in their Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1973; Drescher, 2015). It wasn't until the latter part of the 20th century where sexual minority identity research began to progress. Given that it was recently criminalized and a relatively new field of study most of the early research assumed linear progression of sexual identity milestones. We now know thanks to the literature and frameworks within the 21st century, that sexual identity milestones while sometimes linear can vary across individuals and demographic groups with different individuals having different sequence of events. According to a 2021 Systematic Review and Meta-Analysis related to sexual identity milestones among LGBQ+ persons in the United States, certain genders, sexual orientations, races/ethnicities and birth cohorts have seen varied milestone timing (Hall et al., 2021).

2.3.1. Sexual Identity Milestones and Coming Out

In a world where heterosexuality is assumed among the population, 'coming out' is an experience that LGBQ+ persons need to clarify at different points throughout their life. Due to stigma and a culture of heteronormativity, the coming out process is a multistage process across sexual minority person's life. Sexual orientation and sexual identity are related to changes and experiences that relates to a person's identity as being a sexual person. They may relate to thoughts or desires of sexual attraction or behaviors and actions (Hall et al., 2021).

For example, the first realization of wanting an intimate partner or having a physical attract to a person of the same sex or gender.

Stigma and discrimination are fundamental and underlying causes of population health inequalities in society such as labeling, "othering" a group, social separation, social exile, discrimination or loss of status especially in a situation where one group holds power over another group, usually a minority. Early research related to stigma and discrimination focused on race and ethnicity but has since broadened to include other aspects such as gender, sexual identity, disability, and HIV (Hatzenbuehler et al., 2013).

The term "heteronormativity" was coined in 1991 by a social theorist from the United States named Michael Warner. The term refers to the assumption that heterosexuality, sexual and romantic attraction to the opposite sex, is the standard that society defines and assumes of sexual behavior and relationships. Heteronormativity is engrained into social institutions, media, and legal institutions which allow for stigma, discrimination and violence against sexual identity minorities to flourish (Warner, 1991). Due to the culture of heteronormativity, the coming out process must exist, and a number of sexual identity milestones are part of a LGBQ+ person's life that straight / heterosexual persons do not have to experience.

The earliest theoretical framework of sexual identity milestones comes from Cass' six-stage model of homosexual identity in 1979. According to Cass, the 6 stages were defined as (1) identity confusion, (2) identity comparison , (3) identity tolerance (4) identity acceptance, (5) identity pride and (6) identify synthesis where a person accepts themselves as homosexual and begins to share this with others and may feel a sense of community amongst others who share their sexuality (Cass, 1979).

The theory and literature over the past 40 years has progressed quite a bit moving away from the original understanding and idea of a dichotomous understanding of sexuality to a spectrum. In the past, sexuality was seen as straight/heterosexual and gay/homosexual. In modern 21st century culture and literature, sexuality has evolved to include other groups such as bisexuals, queer and pansexual persons all of whom fall under the umbrella of sexual identity minorities (Morandini et al., 2017).

A meta-analysis and systematic review focused on the United States found 30 studies related to sexual identity milestones for LGBQ+ persons. Through this process, the researchers found that while milestones varied in terms of the exact sequence of events for difference individuals and research, a number of studies found a common sequence and common groups for key milestones. These include:

1. Realization of LGBQ+ attractions and/or desires (n=22)
2. Self-identification as LGBQ+ (n = 28)
3. Coming out to others as LGBQ+ (n = 24)
4. Same – sex/gender activity (n = 22)

Some studies have further disaggregation of milestones such as coming out to friends, coming out to a family member, coming out to your mother, coming out to your father, or same-sex relationships and partnership (Hall et al., 2021). As mentioned earlier, the timing and sequence of sexual identity milestones differ from person to person and there is not an agreed upon standard that all individuals will meet nor is the sequence truly linear. Different research has found various patterns and the meta-analysis have detailed the most common sequences across research related to LGBQ+ identity milestones detailed in Figure 2 and provided from the original Hall et. al. meta-analysis.

Figure 2: Common Sequence of LGBQ+ Identity Development Milestones
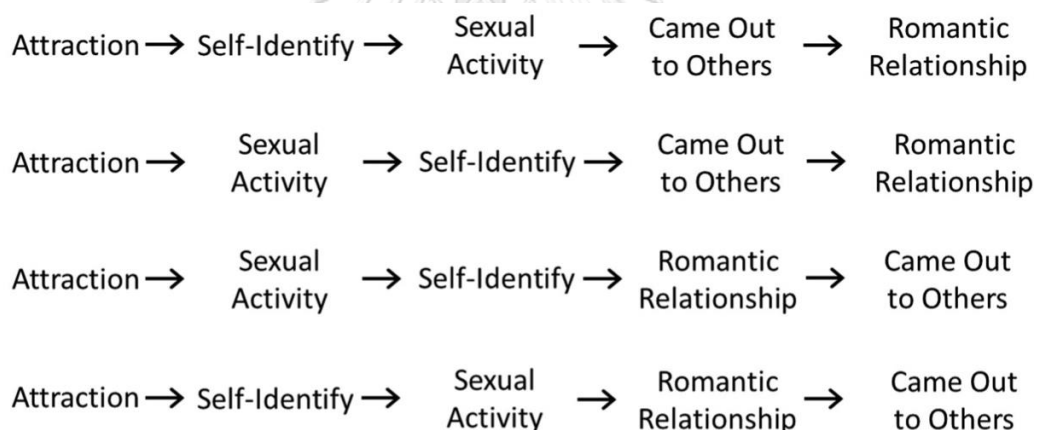
Source: (Hall et. al 2021)

2.3.2. Impact of Coming Out

Disclosing sexual identity or "coming out" has shown to be associated with positive mental health benefits. Through the process of coming out, LGBQ+ people learn how to cope with and overcome the effects of stress and stigma (Ilan H. Meyer, 2003). While there are positive implications, negative implications also exist before, during and after coming out including poor mental health outcomes, suicidal thoughts and attempts, enrollment in LGB+ conversion therapy, as well as the threat of being outed as a tool in intimate partner violence.

The literature focused on youth has found that when coming out in a positive environment and having social support, the positive outcomes outweigh the negative. However, the evidence has also detailed that LGBQ+ youth experience higher levels of bullying, mental health illness, suicide ideation and violence compared to their heterosexual peers (Reisner et al., 2020). A quantitative study conducted based on the Youth Risk Behavior Survey in 10 US states and 10 urban school districts have found the prevalence of physical fighting, being threatened of injured with a weapon, being bullied on school property and not going to school because of safety concerns were higher for sexual minority youths compared to heterosexual students (Olsen et al., 2014). Qualitative research surveying 68 youth (age 14-19 years old) in Washington state, U.S.A. have found that LGBTIQ+ youth discussed their identity issues in a more positive than negative light. For example, according to some youth, visibility was a way to express pride and the most positive factors of being out included with their own identities, within peer networks and the wider LGBTIQ+ community (Higa et al., 2014). Researchers from the University of Rochester, conducting a local quantitative survey in New York State found that individuals were more likely to disclose their sexual minority identity if they perceived to have "autonomy support". The researchers described autonomy support in relation to interpersonal acceptance and support from others for authentic self-experience (i.e., be who they are rather than what others want them to be). The researchers also found autonomy support significantly moderated the relationship of coming out and reports of anger, depression and low self-esteem. The study used multilevel modeling and found that in supportive contexts, which they describe as "autonomy support" the disclosure resulted in fewer negative health outcomes as compared to contexts which participants in unsupportive environments (Legate et al., 2012).

At the macro and societal levels, coming out has the ability to change and promote social acceptance at a national scale. If we look at the United States recent history of the "gay rights movement", an increasing proportion of adults reported knowing an LGBQ+ person and that interpersonal connection was strongly correlated with an increased approval of same-sex marriage. When LGBQ+ people are out of the closet and interacting with heterosexual friends, coworkers and families, public opinion and support for LGBQ+ persons and their advocacy movements such as marriage equality and legal protections has increased in the United States (Rosenfeld, 2017). One study focused on public opinion and same sex marriage in the United States by using data from the General Social Survey and the American National Election Studies between 1972 to 2016 which is a nationally representative survey. The researchers found that people who had at least 1 gay or lesbian acquaintance at the baseline

exhibited larger attitude changes at two- and four-year follow-up regarding marriage equality and moral acceptance of homosexuality (Rosenfeld, 2017). Another study across the U.S. of 937 adults found that heterosexuals who personally knew a gay man were strongly associated with positive attitudes towards gay men (Herek & Glunt, 1993).

While there are many positive aspects, it is well documented in the literature that the coming out process and a number of sexual identity milestones may also be correlated with a number of negative outcomes for some LGBQ+ persons. In relation to education and teaching institutions, schools with more rigid gender stereotypes (e.g., more anti-LGBTIQ+ norms) were shown to have higher rates of victimization, increased suicide ideation, and indirect negative effects on educational outcomes for all students regardless of sexual orientation (Poteat et al., 2011; Santos et al., 2021; Smith et al., 2018) pointing to the idea that heteronormative environments and toxic masculinity negatively impact schools and their students. A qualitative study based on psychological autopsies of deceased LGBQ+ individuals who died from suicide in Australia (n=27) found that key factors of suicide included lack of self and family acceptance, negative feeling of their sexuality/gender, and dissatisfaction with their appearance (Skerrett et al., 2016). The authors cited that "LGBTIQ+ people who died by suicide tended to go through coming out milestones 2 years earlier than controls", highlighting the potential relationship between suicide ideation and coming out within negative social environments (Skerrett et al., 2016).

Studies have also found and documented that abusive partners have used the threat of outing an LGBQ+ partner to their family or others as a means to control and continue emotional, sexual and physical abuse within a relationship. Calton et al.'s (2015) study revealed that LGBTIQ+ persons who suffer from intimate partner violence tended to experience greater difficulty in seeking care due to perceived or real fear of being outed to family, friends, coworkers, or others who may be unsupportive or violent.

The academic literature has also demonstrated that coming out within certain religious communities resulted in higher levels of discrimination, internalized sexual stigma and negative minority stressors compared to those in non-religious contexts (Rosati et al., 2020). Being enrolled in conversion therapy also known as "Sexual Orientation Change Efforts (SOCE)" is also a potential impact of being outed or coming out as LGBQ+. Data from the Generations study found that 7% of LGBQ+ people have experienced SOCE in their lifetime and 80.8% of those who received conversation therapy, received it from a religious leader. LGBQ+ persons who experience conversion therapy had "nearly twice the odds of lifetime

suicidal ideation, 75% increased odds of planning to attempt suicide, and 88% increased odds of a suicide attempt with minor injury compared with sexual minorities who did not experience conversion therapy" (Blosnich et al., 2020). Conversion therapy is a practice that is now considered to be against medically agreed upon ethics and standards. Although conversation therapy is not based on evidence and is actually proven to be harmful, only 13 countries have banned the practice altogether and in the United States the legality differs from state to state (Romero, 2019). In the U.S., most state laws that ban conversion therapy, only covers mental health care providers from doing it and do not necessarily apply to religious or spiritual advisors. This loophole in the policy and legal framework allows for the practice to remain very persistent across the United States and perpetrated by religious or spiritual leaders who do not follow ethical healthcare guidelines. According to the Williams Institute, an estimated 57,000 youth (ages 13-17) in the United States will receive conversion therapy from religious or spiritual advisors before they reach the age of 18 and 698,000 LGBTIQ+ adults (including 350k who experienced it before 18) have received conversion therapy at some point in their life (Mallory et al., 2019).

Adverse Childhood Experiences (ACE) was first initiated in a large study on health outcomes by CDC and Kaiser in 1998. The findings have showed and garnered widespread interest into the impact of ACEs on health outcomes, behaviors, life opportunities and personal economic finances. It is well documented in literature since 1990 that those who experience higher levels of adverse childhood experiences (ACE) are at a significant disadvantage in life and tend to have poor health outcomes in life. For example, those people who experience four or more ACE are at an increased risk of chronic diseases which can included cancer, heart disease, diabetes, mental illness and health risk behaviors (Metzler et al., 2017). A systematic review from 2022 found a total of 27 articles that assessed childhood adversaries and the impact it has on LGBTIQ+ youth. LGBTIQ+ youth reported higher prevalence of ACE compared with heterosexuals and cisgender with sexual abuse being the highest and most common reported experience. This was followed by verbal abuse, physical abuse and cyberbullying and demonstrated how they are at heightened risk of negative mental health disorders and outcomes compared with cisgender and heterosexual peers (Jonas et al., 2022).

2.3.3. Factors Associated with Sexual Identity Milestones or Coming Out

One major aspect of our research is to assess and understand which sociodemographic factors may impact the age and whether or not a person comes out. While there is a gap in the research in this area, there have been some notable studies and research related to individual factors and sexual identity milestones. The research and data in the United States carry a

degree of variation and heterogeneity. Different factors such as race, age/cohort, gender, and sexual orientations of sexual identity milestones have been analyzed to assess impact. The majority of research and findings around sexual identity milestones have focused on median and mean age of milestones and sequence of realizing those sexual identity milestones such as LGB self-realization, self-identity and sexual activity.

Intersectionality, a term coined by Kimberly Crenshaw in 1989 refers to how systems of oppression relate to identities and inter-relate and overlap to impact discrimination and marginalization (Crenshaw, 1989). For example, while all women may face certain types of discrimination, black women will face additional hurdles and types of discrimination due to the intersecting aspects of multiple identities and marginalization they face. Intersectionality is an underlying idea and concept that may help to explain the differences in different trends related to sexual identity milestones, and the decision on whether and when to come-out at all for different socio-demographic groups.

Using Generations study data, researchers assessed estimated marginal means against cohort, sex, sexual identity, and race in relation to first disclosure to a family member. Figure 3 provided from the original research paper in 2020 reflects how these interactions affect milestone timing (Bishop et al., 2020). Estimated marginal means are reported with 95% confidence intervals. Some of the acronyms include Male = M, Female = F, White = W, and Person of Color = POC, and "Newer" is related to one of the other sexual identities outside of gay, lesbian and bisexual.

Figure 3: *Analysis of Covariance (ANCOVAs) of milestone timing of disclosure to family.*

ANCOVA Disclosure to Family
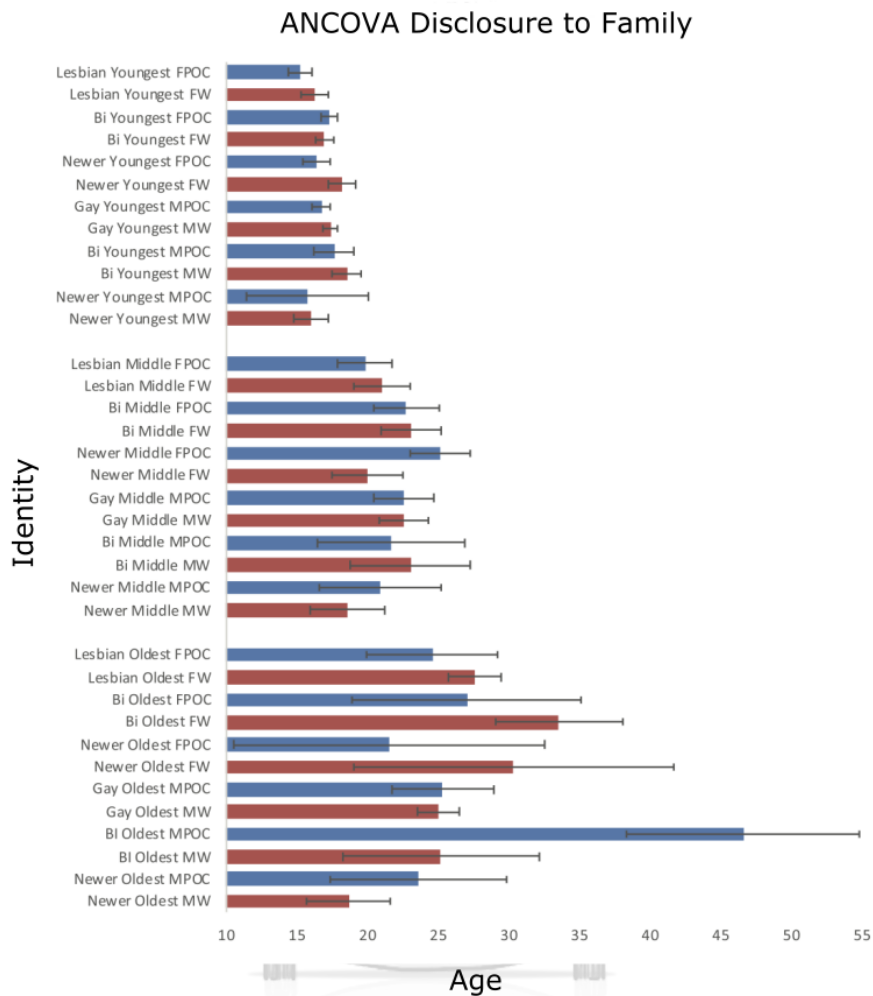
Source: Bishop, M. D., Fish, J. N., Hammack, P. L., & Russell, S. T. (2020).
Sexual identity development milestones in three generations of sexual minority people:
A national probability sample. Developmental psychology.

Source: (Bishop et. al 2021)

The literature includes mixed results depending on the size, scope and location of the study. A number of studies have reviewed how generational and age cohorts may impact timing of sequence of certain sexual identity millstones.

Some LGBQ+ related studies have grouped cohort and generations together to assess differences and similarities across groups and have found that older cohorts tend to come out later in life than younger cohorts and that the sequence of sexual identity milestones differ between generations. Grierson and Smith (2005) looked at any generational differences between gay men and group the cohorts based on external and societal impacts that may have

potential impacts on the life of gay men. They provided three groups included pre-AIDS (1953-1962), peri-AIDS (1963-1969) and post-AIDS (after 1969). The researchers found that the older generations tended to hide and not come out due to stigma whereas younger generation experienced greater coming out and sharing with friends (Grierson & Smith, 2005). Findings from the meta-analysis noted that Millennials (born 1981 - 1995) differed in timing of specific milestones compared to the older generations such as self-identifying as LGBQ+ before their first same-sex activity. Whereas older generations would usually have their first same-sex activity before identifying as a sexual identity minority (Hall et al., 2021). According to a small study in NYC of 396 LGB New Yorkers, one noticeable difference among age include younger cohorts with higher proportions of those out during high school around age 17 and 18 such as millennials compared with Gen X (born 1965 - 1980) and older who were mostly not out during their high school years (A. Martos et al., 2015). Within the literature, only one study was found to assess coming out of Gen Z (born after 1997) as this is a relatively young/new age cohort. The study looking at Gen Z focused only on boys and did not compare to other generations so did not assess age. Researchers found that White Gen Z boys had greater rates and odds of coming out compared to Black and Asian Gen Z boys. (Moskowitz et al., 2021)

While several studies assessed race and ethnicity, most of the research has found that race is not a statistically significant factor in relation to differences in milestone timing although a few studies did find significant differences. In a study of 169 gay male youth, researchers found that Latinos experience LGB+ realization earlier compared with Black or White males (Dubé & Savin-Williams, 1999). In a study of 450 LGB+ women, white women came out later in life in compared to women of color (Black/Latina) (Parks et al., 2004).

Studies that have analyzed sexual identity milestones and different genders mostly looked at binary gender of male and female and most did not find any significance for gender in the sequence and timing of events (Hall et al., 2021). However, one study of 1,131 participates aged 18-85 across the U.S. found that while gender in itself wasn't significant, gender when interacting with cohort was significant for the oldest generation. Females from the Silent Generation (born 1928 – 1945) came out later compared to males within the same age cohort (Dunlap, 2016).

In relation to sexual orientation, most research studies have observed that bisexuals tend to meet most sexual identity milestones later in life as compared to lesbian and gay sexual identities although most of the studies have only studied this in terms of LGB+ realization and

attraction rather than the coming out milestones we are interested in for this study (Hall et al., 2021). Only one study was found to assess sexual identity milestones related to other sexual minorities outside of Lesbian, Gay and Bisexual categories such as queer, pansexual or related groups (Bishop et al., 2020).

The research has demonstrated that in some cases while one factor such as race or gender was not statistically significant, when assessing intersectionality and interaction terms, there may be statistically significant findings such as with bisexual women highlighting the importance of potentially using interaction terms within these types of studies.

2.4. Conceptual Framework

Figure 4 illustrates a conceptual framework for this current study. It shows the individual-level factors potentially associated with our outcome variables of interest (i.e. the three sexual identity milestones) as well as family-level factors related to Adverse Childhood Experiences (ACE). The selection of these factors was largely determined by the literature and the availability of data in the survey.

Figure 4: Conceptual Framework.
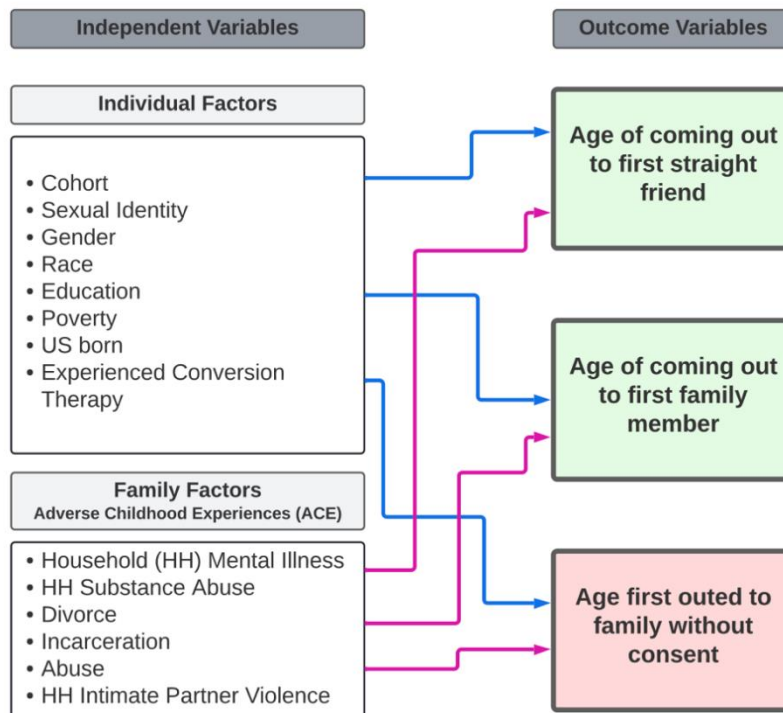
Source: Developed by Matthew Kusen

CHAPTER 3: DATA AND METHODS

3.1. Data

This study relies on data from the Generations study, which is the first longitudinal study, specifically designed to examine health and well-being across three generations of sexual minorities in the United States. More specifically, the study explored identity, stress, health outcomes, and health care and services utilization among lesbian, gay, bisexual and other sexual minority identity (e.g., queer and pansexual; LGBQ+) individuals in three generations of adults who came of age at different historical contexts. Moreover, the study aimed to assess whether younger cohorts of LGBQ+ differ from older cohorts in how they experience stress related to prejudice and everyday forms of discrimination, and whether patterns of resilience differed between different LGBQ+ cohorts (Meyer, 2020).

The Generations study team was led by Principal Investigator, Ilan H. Meyer, Ph.D. from UCLA's School of Law Williams Institute, which is a leading research center on sexual orientation and gender identity law and public policy. The study was also supported by David M. Frost, Ph.D., Phillip L. Hammack, Ph.D., Marguerita Lightfoot, Ph.D., Stephen T. Russell, Ph.D. and Bianca D.M. Wilson, Ph.D. (Co-Investigators). The study received support from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD grant 1R01HD078526) and through supplemental grants from the National Institutes of Health, Office of Behavioral and Social Sciences Research and the Office of Research on Women's Health. Data collection and participant recruitment was done by Gallup Inc., a leading survey research consulting firm in the United States.

The study's target population included self-identified lesbian, gay, bisexual, queer, or same-gender loving persons who did not identify as transgender (LGBQ+) residing in the United States. Eligibility criteria comprised age (i.e., 18 – 25 years, 34 – 41 years, or 52 – 59 years), race (i.e., Black, Latino, or White) and education level (i.e., having completed at least 6th grade education). Due to issues with sample size and recruitment, Native Indian/American and Asian participants were not eligible as their inclusion would possibly be insufficient to be representative of the entire U.S.

There are currently 3 waves of data available from the study. Recruitment for participants took place between March 2016 to March 2017 with an additional enhancement oversample of mostly Black and Latino LGBQ+ individuals taking place between April 2017 to April

2018. This resulted in the total sample size of wave 1 to complete the survey at 1,518 individuals. The following waves 2 and 3 were carried out annually for each participant respectively with wave 2 at the 1-year mark and wave 3 conducted 2 years after wave 1.

1. Wave 2 follow-up survey was completed between April 2017 and March 2018 depending on when the participant took the original survey and included 894 participants (59% retention from wave 1) . Only participants from the original sample were included and the enhancement oversample participants were not eligible for the longitudinal survey design.

2. Wave 3 follow-up survey was completed between April 2018 and March 2019 and included 707 participants (79% retention from wave 2).

To identify potential participants, a dual-frame sampling design, which includes landline and cellphone numbers, was utilized. The survey employed a random-digit dialing (RDD) method, with regional and time zone stratifications to ensure that the samples are representative of the U.S. population. Once eligibility was determined via the telephone method, if participants agreed to participate the questionnaire, it was emailed or mailed to the participant and was completed either via email or via mail. Due to the complex design of the survey, results are required to be weighted to yield nationally representative estimates. Detailed description of the survey's methodology can be found under the Generations Methodology and Technical Notes (Meyer, 2016).

The sample size for the baseline (wave 1) began with the recruitment 366,644 participants screened by Gallup for inclusion in the Generations study and 3.5% were considered LGBTIQ+ and 27.5% of those were eligible for this study. 80% of those eligible agreed to complete the survey and then 48% of those completed the survey with a response rate of 39%. To increase the number of Black and Latino participants as mentioned, there was a year-long extended recruitment known as the enhancement sample. The final Generations baseline sample size was 1,518, including 1,331 from original sample, 187 from enhancement sample.

3.2. Analytic Sample for this study

This research focuses on three coming out milestone questions collected through wave 1 from the period of 2016-2018. Wave 1 included 1,518 participants and from that original dataset we organized and cleaned the data to come up with analytic sample. First, 11 participants (0.07%) were missing a sexual minority identity so those observations were dropped as they

would be ineligible for our research question. There were also 35 participants (2.3%) who were dropped as information on whether they were born in the US and their income levels to assess poverty status were missing. In relation to our outcome variables of interest, there were some participants who were unable to recall the age of the coming out event, but knew the event occurred so we could use them in the logistic regression, but not for the survival analysis where time to event data point is required. The number of variables dropped were quite small at 7% for logistic regression and 11% for survival analysis of the total observations so we do not expect dropping them to have a pronounced impact on our analysis.

After excluding cases with missing variables, our analytic sample for the current study reduced to 1,416 (or 93% of the original sample size) for our multivariate logistic regression and 1,347 (or 89% of the original survey sample) for our survival analysis. Figure 5 illustrates the sample size for this study and illustrates the previous description of the missing data dropped.

Figure 5: Analytic Sample Size
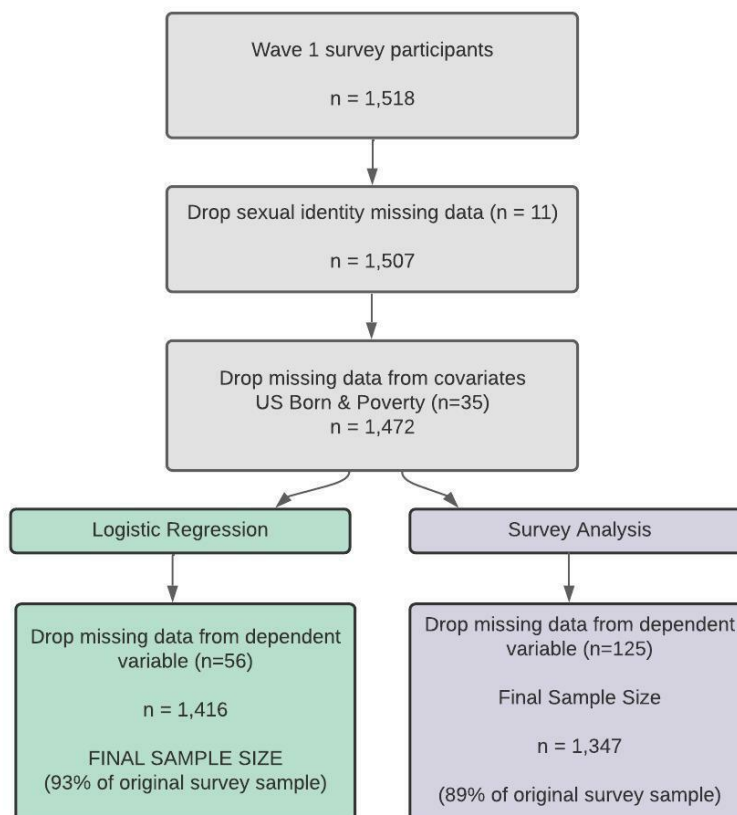
Source: *Developed by Matthew Kusen*

3.3. Variable Measurement

3.3.1 Outcome Variables of Interest

Our outcome variables of interest comprise three sexual identity milestones: (1) disclosure to friend, (2) disclosure to family and (3) outed to family before disclosure.

(1) Disclosure to friend was derived from a question asking respondents at what age they first told a straight friend about their sexual identity status. For the binary logistic regression, reported age (recorded in years) was coded into a dichotomous variable where (1) indicates the respondent had come out to at least one straight friend and (0) represents the event not yet occurring.

(2) Disclosure to a family member was derived from a question asking respondents at what age they first told a family member about the sexual identity status. For the binary logistic regression, reported age (recorded in years) was coded into a dichotomous variable where (1) indicates the respondent had come out to at least one family member in their lifetime and (0) represents the event not yet occurring.

(3) Outed to a family member before disclosure was derived from a question asking respondents at what age it was clear that someone in their family had found out they were LGBQ+ before the participant could tell them about their sexual identity status. For the binary logistic regression, reported age (recorded in years) was coded into a dichotomous variable where (1) indicates the respondent had been outed to a family member before telling them in their lifetime and (0) represents the event not yet occurring.

For the multivariate analysis, two main methods of analysis were used, which includes using the binary variables for logistic regression and using all six variables for the survival analysis models. The binary outcome variables were used for censoring related to the age for the relevant sexuality milestone.

3.3.2. Covariates

The following covariates were used to assess factors associated with reaching the sexual identity milestones described in the previous section. These include variables at the individual level and family level. Individual level indicators include cohort, gender, sexual identity, education, race, nativity, economic status and participation in conversion therapy. At the family level, Adverse Childhood Experiences (ACE) are added as studies have shown they impact many aspects of children and adults' lives. ACE indicators include household mental

health issues, emotional abuse, sexual abuse, parental intimate partner violence, and substance abuse within the household.

Cohort

Cohort was constructed based on month and year of birth of respondents obtained during the eligibility screening process by Gallup Inc. Based on the study design and eligibility criteria set out in Myer (2016)'s study, cohort was classified into three categories, defined by the Generations Survey as a categorical variable indicating whether respondent was a member of the youngest, middle or oldest generations. The variable was operationalized according to social environments and cultural relevance. The **youngest** of the three generations, the "cultural inclusion" generation or the "equality" cohort, consisted of sexual minorities between the ages of 18 and 25 at the beginning of the study in 2015. The **middle** generation, the "institutional advancement" generation or "visibility" cohort included sexual minorities ages 34-41, who were strengthened by and integrated into the social institutions of the 1990s. This cohort came of age at a time when the HIV/AIDS epidemic was at its height, but effective AIDS treatments became available. The **oldest** of the three generations, the "identity formation" generation or "pride" cohort, consisted of sexual minorities between the ages of 52 and 59, who experienced early adulthood at a time when sexual minority communities and institutions formed in urban centers, community celebration such as Gay Pride became regular events, and a "gay pride" discourse took hold in the LGBTIQ+ community" (Meyer, 2016). Table 1 summarizes the Generations Study researchers age cohorts that are used for this study.

Table 1 Generation Age Cohorts and Names

Cohort Name	Age Range	Description
Younger	Age 18 – 25	Cultural Inclusion Cohort
Middle	Age 34 - 41	Institutional Advancement Cohort
Older	Age 52 - 59	Identity Formation Cohort

Source: Matthew Kusen

Race

Race is constructed based on information obtained during the study's recruitment process and incorporated into the analysis as three dummy variables indicating whether respondents' origin was White, Black or Latino. It is important to note that race is self-identified to be associated with only one group. Therefore, there is a possible of having a mixture of multi-racial samples in each of the three groups, which requires caution in the interpretation of

results. Multi-race participants who chose Black and any other race were classified as Black except if they also chose Latino. If participants indicated Latino and any other race, they were classified as Latino for the purposes of this variable. For the purpose of our multivariate analysis, race has been transformed into a binary variable with White participants coded as 1 and a person of color, those who are Latino or Black, coded as 0. The rationale for constructing a binary variable is that during the diagnostic tests to assess correlation among covariates, the VIF scores and correlation tests were too high as three independent categories.

Gender

Gender identity was derived from a question asking respondents to choose one of the shown response categories that best described their current gender identity (question 28) and transformed into a categorical variable. The response categories in the questionnaire included man, woman, transgender woman/male-to-female (MTF), transgender man/female-to-male (FTM), and non-binary/genderqueer. Respondents who identified themselves as transgender were requested to participate in a companion study called TransPop (see www.TransPop.org), which included questions to address issues that are specific to transgender people. In this study, gender identity was incorporated into the analysis as a categorical variable indicating if the respondents perceived themselves as a man, a women or non-binary.

Sexual Identity

Sexual identity was derived from a question asking respondents to consider if any of the given response categories best described their sexual orientation (question 29) and constructed into three dummy variables for sexual identity. The given responses within the survey included straight/heterosexual, lesbian, gay, bisexual, queer, same-gender loving and other. Those who answered other were requested further to specify their sexual identity. The original responses were grouped into three categories: (1) lesbian/gay (lesbian, gay); (2) bisexual (bisexual), and (3) others which included all other sexual identities, for example, queer, pansexual, same-gender loving, asexual spectrum, anti-label, and other. While we recognized the potential variations among the 'others' categories that may affect the timing of coming out, there are many similarities among the other sexual minority group. For the purpose of our multivariate analysis, sexual identity has been transformed into a binary variable with Lesbian/Gay participants coded as 1 and all other sexual identity minorities including bisexual and queer, same-gender loving and other as 0. The rationale for constructing a binary variable is that during the diagnostic tests to assess correlation among covariates, the VIF scores and correlation tests were too high as three or more independent categories.

Education

Education was devised based on the original eligibility screening by Gallup Inc. where participants were given 6 categories of educational attainment and from that we constructed a simplified dummy variable surrounding the cut-off period as High School. The rationale for this is based on the literature as we expect there to be little variations among the categories above High School such as graduate versus undergraduate education. The original question provided during eligibility screening read, "What is the highest level of school you have completed or the highest degree you have received?". From that, participants were provided with the following 6 options: including: (1) Less than high school diploma, (2) High school degree or diploma, (3) Technical/Vocational school, (4)Some college, (5) College graduate, (6) Post graduate work or degree. The variable "GEDUC2", which is the binary form of High School education was provided with the dataset from the original research team.

Nativity

Nativity was derived based on a question related to whether or not the subject was born in the United States of America (question 166) and is constructed as a dummy variable. Participants were asked whether or not they were born in the United States with Yes and No as possible responses. This variable is included as those who are born outside of the United States, may have socio-cultural upbringings that differ from U.S. born persons that may impact the timing and meeting our outcomes of interest.

Economic Status

Economic status was derived based on the reported annual household income and the number of household members and constructed as a categorical variable in relation to the federal poverty level. The constructed variable includes four levels with the lowest level as those living below the poverty level (1) Low Economic Status followed by (2) Lower-middle economic status (those who are at 100%-199% the Federal Poverty Level), (3) Upper-middle economic status (those who are at 200%-299% the Federal Poverty Level), and (4) Upper economic status (those who are over 300% the Federal Poverty Level). US Census estimates for poverty thresholds in 2016 and 2017 were utilized (Poverty Thresholds, 2018) depending on the timing that the participant completed the survey. The w1povertycat variable was provided thanks to the original researchers and based on reported household income (question 172) and the number of members within the household (question 173) (Meyer, 2020; Meyer, 2016).

Conversion Therapy

Conversion therapy variable was derived based on whether or not a person experience conversion therapy (question 133) and transformed into a dummy variable. Respondents reported their lifetime experiences receiving treatment to change their sexual orientations which is sometimes known as conversion therapy or "Sexual Orientation Change Efforts (SOCE)". For the purpose of this research and what is widely understood by the public, we use the term conversion therapy. The researchers asked, "Did you ever receive treatment from someone who tried to change your sexual orientation (such as try to make you straight/heterosexual)?". If a participant responded with "Yes", they were recorded as 1 and if they responded as "No" they were recorded as 0.

Adverse Childhood Experiences (ACE) Scale

Adverse Childhood Experience Scale was derived based on a series of 11 questions that the participants may have experienced relating to various forms of exploitation, abuse, neglect, and household dysfunction before the age of 18 and the scale variable was constructed ranging from 0 to 8 based on the CDC's ACE study and calculated by Meyer's team (Meyer, 2016; Petruccelli et al., 2019). The options for responses to the questions (questions 151 to 158) ranged from dichotomous "Yes/No" possibilities along with Likert scale responses between the number of times a specific experience happened including "never, once, or more than once". Those who score 0 would have had no forms of ACE present before the age of 18 whereas those with higher scores would have experienced multiple forms. The questions include questions on the presence of household mental illness (q. 151), household substance abuse (q. 152,153), an incarcerated household member (q.154), parental separation (q.155), household intimate partner violence (q.156) physical abuse (q.157), emotional abuse (q.158), and sexual abuse (q.159,160,161). For each of the 8 areas, a score of 1- was provided if the experience occurred and a score of 0 was utilized if the experience was not present. The sum of each of the 8 areas was calculated to determine the final ACE scale score each participant. Further details on the ACE variable and how the scale is derived may be found in the Generations Study methodological notes and the CDC Kaiser ACE Study (Felitti et al., 1998; Meyer, 2016).

Table 2: *Summary of Analytical Variables*

Variable	Operationalized definition	Measurement
Outcome variable		
Age of Coming Out to Friend	Age when a person first disclosed to a straight friend about their sexual minority status.	Continuous (age in years)
Age of Coming out to Family	Age when a person first disclosed to a family member about their sexual minority status.	Continuous (age in years)
Age when Outed to Family	Age when an LGB+ person was first outed to their family as a sexual minority without their consent.	Continuous (age in years)
Came Out to Friend	Whether or not an LGB+ person have ever in their life come out to a Straight friend	Dummy Variable (1-Yes , 0- No)
Came Out to Family	Whether or not an LGB+ person have ever in their life come out to a family member	Dummy Variable (1-Yes , 0- No)
Outed to Family	Whether or not an LGB+ person have ever in their life been outed to their family without their consent and before having come out on their own terms.	Dummy Variable (1-Yes , 0- No)
Explanatory variable		
Cohort	Age cohort	Categorical Variable 1- Youngest (age 18-25), 2- Middle (age 34-41), 3- Older(age 52-59)
Gender	Gender identity at time of survey	Categorical Variable 1- Male 2- Female 3- Non-Binary
Gay or Lesbian	Gay or Lesbian sexual identity at the time of survey	Dummy Variable (1-Yes , 0- No)
White	Race is White	Dummy variable (1 – White , 0 – Person of Color)
Education	Have more than a high school education.	Dummy Variable (1-Yes , 0- No)
Economic Status	Economic status based on national census income poverty thresholds	Categorical Variable 1- Low economic status - Below the Federal Poverty Level (FPL) 2- Lower-middle economic status (100%-199% FPL) 3- Upper-middle economic status (200%-299% FPL) 4- High economic status (300%+ FPL)
Nativity	Was the person an immigrant to the United States?	Dummy Variable (1-Yes , 0- No)
Conversion Therapy	Did the person experience conversion therapy at some point in their lifetime?	Dummy Variable (1-Yes , 0- No)
ACE scale	Scale indicating the number of adverse childhood experiences (ACE) they encountered before the age of 18.	Continuous Scale Variable (0:8)

3.4. Analysis Plan

The study employed both descriptive and inferential statistics. Firstly, descriptive statistics (e.g. mean, median and frequency were used to illustrate and examine the distribution of the sample according to demographic, socioeconomic status, and social and community support scales. Significant differences between outcome variables and independent covariates were tested using Chi-square. The multivariate analyses utilized binary Logistic Regression and Cox Proportional Hazard Regression to analyze impacts of covariates on our outcome variables related to coming out while holding other factors constant. Logistic regression is an appropriate method given the binary nature of whether the event occurred along with our research question of how specific socio-economic or demographic factors may impact the likelihood of the event occurring. Results will be reported as an odds ratio (OR) of coming out or being outed at LGBQ+.

In order to further analyze our data and include the temporal aspect of coming out, a Time-To-Event analysis or sometimes known as Survival Analysis was employed. Survival Analysis includes two aspects for each outcome, a temporal aspect, in this case we will employ years, and an event indicator used to censor observations once an event is met, in this case coming-out. Cox Proportional Hazard Regression is an appropriate method to use as it allows for multivariate analysis of time-to-event data while allowing for categorical and continuous covariates to be included in the model. Results will be reported via the hazard ratio (HR) and 95% confidence intervals.

Prior to the analyses, test for multicollinearity were completed to ensure none of the covariates are highly correlated covariates which would violate the underlying assumptions for regression analyses. Diagnostic tests were conducted during the multivariate analysis. The statistical significance levels were reported at 5%, 1% and greater than .1% for all of the analyses. Statistical analyses and data cleaning were conducted in R programming language via RStudio.

Survey weights were used through the analysis and are provided with the dataset by the original researchers via Gallup Inc. When applied, the "results from analyses are generalizable to the U.S. population of LGBQ+ adults ages 18-25, 34-41, and 52-59 during data collection. There are no stratification or cluster weights" (Meyer, 2020). Sample weights were created in a step-wise fashion by Gallup weighted to represent 18+ US population and

calculated by age, gender, education, race/ethnicity and region including to account for non-responsiveness and for eligible, but not able to complete the survey.

All statistical methods and data visualization were completed in R programming language through the use of R Studio. R Studio was used to clean and wrangle the data with the following packages: tidyverse, janitor, here, foreign, and skimr (Firke, 2021; Müller, 2020; R Core Team, 2020; Waring et al., 2021; Wickham, 2021; Xie, 2021). For data analysis, visualization, and reporting the following R packages were utilized including: tidyverse, survey, aod, ggcorrplot, survminer, survival, patchwork, ggplot, stargazer and MetBrewer (Hlavac, 2022; Kassambara, 2019; Kassambara et al., 2021; Lesnoff & Lancelot, 2019; Lumley, 2021; Mills, 2022; Pedersen, 2020; Therneau, 2021; Wickham, 2021; Wickham et al., 2021).

3.5. Preparatory Tests

The main types of preparatory tests prior to conducting analysis include (a) Patterns of Missing Data and (b) Multicollinearity checks.

a. Patterns of Missing Data
b. Multicollinearity checks

Patterns of Missing Data was conducted in R studio using naniar package to conduct Little's Test for Missing Completely at Random (MCAR) and visualize patterns of missing data (Little, 1988; Tierney & Cook, 2018). Results of the MCAR test focused cross checked the six outcome variables of interest against all covariates of interest. Out of the six variables of interest, the three binary variables of interest all have p values ranging from .47 to .73 meaning that the patterns of missingness is completely at random. In the p value included .05 or greater, this would indicate a different type pattern of missingness(Little, 1988). For our three age dependent variables, MCAR tests including cohort including p values above .001 for age coming out to a friend and age outed to family. However, when we removed the cohort variable in the test the p value was .12 and .24 indicating that the pattern of missingness was related to cohort. In this case, it was most appropriate to remove the cohort variable from the multivariate survival analysis later on so that the pattern of missingness related to cohort would not bias our results.

The main types of multicollinearity checks included for this study as the production of correlation matrix along with the Variance Inflation Factor (VIF). Multicollinearity is a

concept in which multiple independent variables are correlated to one another. One of the assumptions for most multivariate regression models is that our covariates do not exhibit multicollinearity. Highly correlated covariates may bias the results for the overall model and individual coefficients. One way to test for multicollinearity is through a correlation matrix where pairwise completion test is conducted to assess any covariance. For categorical variables, dummy variables are created for each of the categories and results for each pairing ranging from -1 to 1 where anything plus or minus $\pm$ .8 indicates multicollinearity. The development of a correlation plot is completed in R over a heatmap thanks to the ggcorrplot package to assess any multicollinearity and presented as Figure 6 below . As you can see from Figure 6, there are no issues of multicollinearity detected for the final variables of interest. However, earlier correlation tests identified Latino/Black and bisexual/other sexual identity to be highly correlated and thus the new binary variables were constructed to remove the multicollinearity.

Figure 6: Correlation Matrix for Variables of Interest
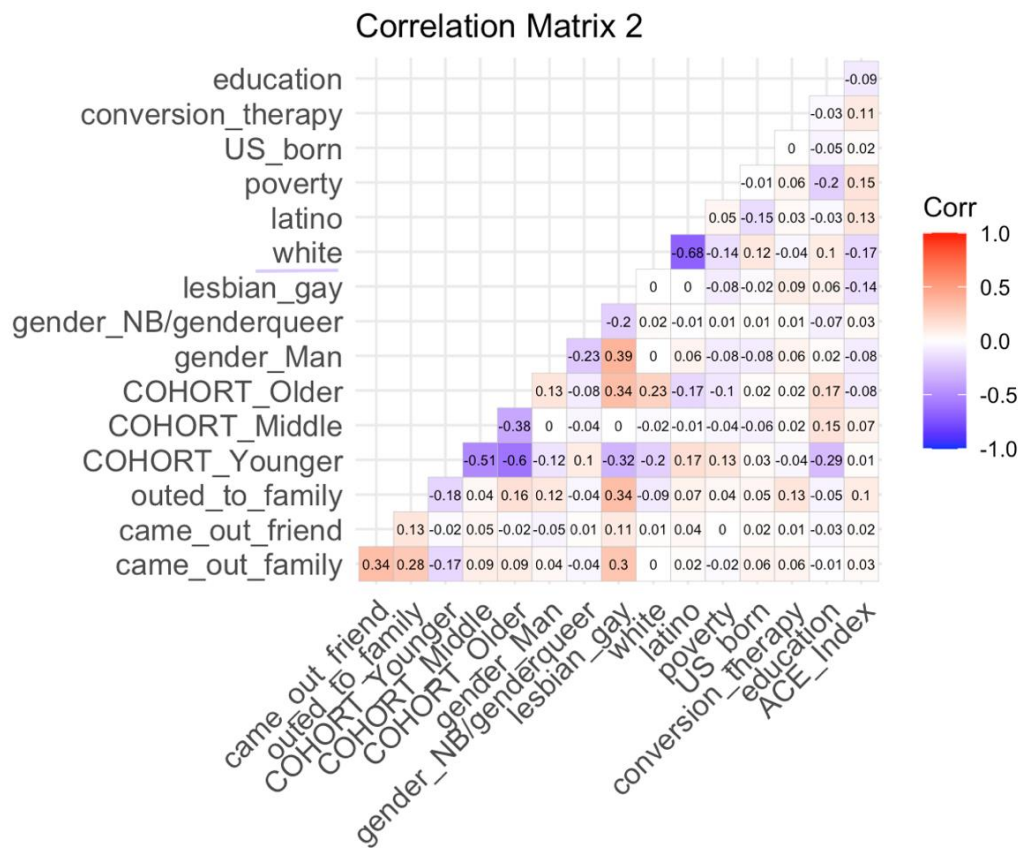
Source: Developed by Matthew Kusen

Testing for Variance Inflation Factors (VIF) was also conducted in R studio to ensure that the models' covariates did not exhibit multicollinearity. A VIF of 10 or more would indicate an issue and suggest multicollinearity to exist and no variables exhibited a score above 10 (O'brien, 2007).

CHAPTER 4: RESULTS

This chapter presents results from statistical analyses. The chapter is divided into (1) sample characteristics, (2) patterns of coming out milestones, (3) correlates of coming out and (4) timing of coming out: survival analysis results.

4.1. Sample Characteristics

The key demographic and socioeconomic characteristics of the study sample are presented in Table 3. The younger cohort was made up of the largest proportion of the sample (44.4%), followed by the older cohort (31.2%) and the middle cohort (24.4%). Women constituted approximately half of the sample (49.9%) with the smallest percentage of 6.5% reporting themselves as non-binary. Slightly more than half of the sample identified themselves as gays or lesbians (54.8%) and around two-thirds reported their race as White (65.5%). The vast majority of the sample was born in the US with only 6% born outside the country. 7.3% of participants reported to have been enrolled in a sexual orientation change efforts (SOCE) program, also known as conversation therapy, at some point in their lifetime. In relation to ACE scores, the participants have experienced, on average, 3 adverse events before age 18. Only a small proportion of the sample reported to never experience any negative events during their childhood (9.9%).

Table 3: Description of sample characteristics (N=1,416)

Characteristics	Sample size (n)	Percent
Cohort (age at the survey time)		
Younger (18–25 years)	629	44.4
Middle (34–41 years)	345	24.4
Older (52–59 years)	442	31.2
Gender		

Characteristics	Sample size (n)	Percent
Woman	707	49.9
Man	617	43.6
Non-binary	92	6.5
Sexual Minority		
Lesbian/Gay	774	54.7
Bisexual and Other Sexual Identities	642	45.3
Race		
White	929	65..6
Black	274	15.0
Latino	213	19.4
Education level		
High school or lower	283	20
Beyond high school	1133	80
Economic Status		
Low (< poverty level (PL))	193	13.6
Lower-middle (100-199% PL)	268	18.9
Middle (200-299% PL)	182	12.9
High (300% + PL)	773	54.6
US nativity		
Yes	1331	94.0
No	85	6.0
Conversion therapy		
Yes	103	7.3
No	1313	92.7
Adverse Childhood Experience (ACE) score		
0	140	9.9
1	245	17.3
2	221	15.6
3	219	15.5
4	183	12.9

Characteristics	Sample size (n)	Percent
5	180	12.7
6	114	8.1
7	77	5.4
8	37	2.6
Mean score = 3.16 ; maximum score = 8; minimum score = 0		

4.2. Coming Out Milestones

Most of the sample, as shown in Table 4, indicated to come out to a straight friend (96%), family member (85%), or both friend and family (84%). Only a small proportion (2.9%) reported that disclosure to either friend or family has never taken place. Around 60% of the sample indicated that they had ever experienced involuntary outing to a family. Figure 7 presents histograms of age of first meeting the three milestones for those who came out or were outed. The visual representation helps to demonstrate the distribution of age when the event occurred for each of the outcomes. The highest proportions are clustered around late adolescence to early adulthood for all milestones.

A closer examination of the coming out pattern by cohorts, according to Table 4, revealed that overall, the younger generation is more likely to come out to a straight friend, but less likely to come out to a family as compared the two older generations. The proportion of the younger cohort is twice as likely as the two older cohorts to disclose themselves to straight friends only. The observation is reverse for the disclosure to family only, where the older generation is three-times higher to come out to a family only. This pattern is pronounced when both friend and family were jointly considered. The result further showed that involuntary disclosure to family is highest among the older cohort and lowest among the youngest cohort.

Table 4: Selected measures of coming out milestones by cohort

Percentage came out to	Total	Cohort		
		Younger	Middle	Older
A straight friend	96%	96%	98%	95%
A family				
With their own will	85%	79%	91%	90%

Percentage came out to	Total	Cohort		
		Younger	Middle	Older
Outed without consent	58%	48%	61%	70%
Both came out and outed	55%	44%	60%	66%
A straight friend only	12%	17%	8.1%	6.8%
A family only	1.1%	0.5%	1.4%	1.6%
Both friend and family	84%	78%	90%	89%
Neither friend nor family	2.9%	4.0%	0.9%	2.9%
Unweighted observations	1,416	629	345	442

Figure 7: *Age of Coming Out Histograms by each Outcome Variable*
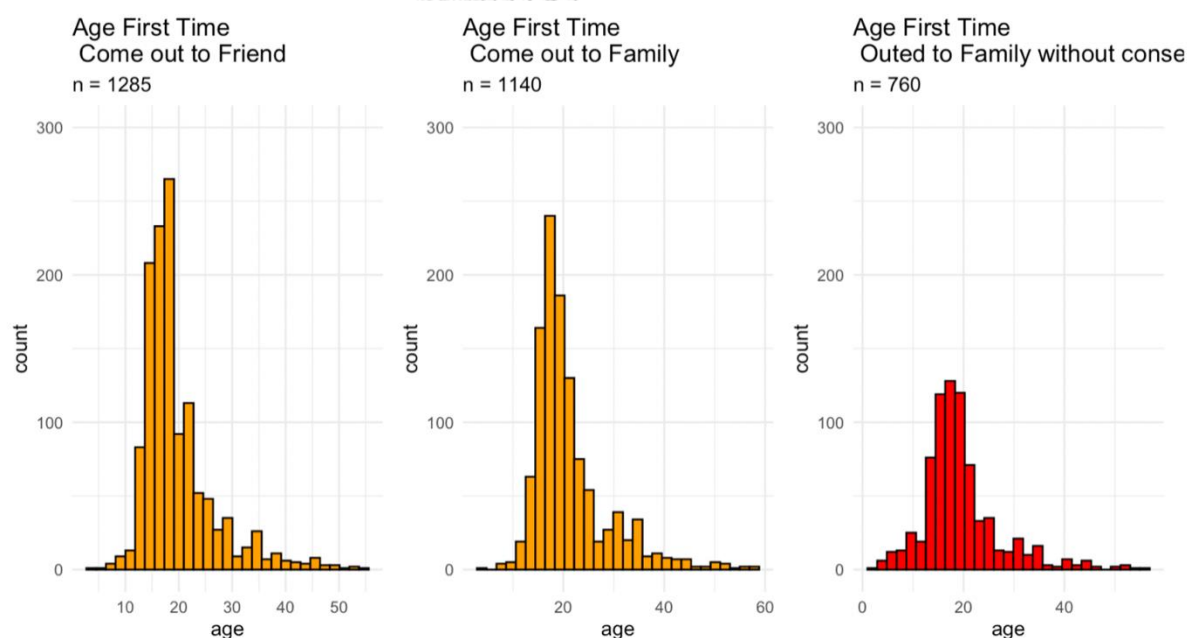
Source: *Developed by Matthew Kusen*

4.3. Unadjusted and adjusted correlated of 'coming out'

In the analysis presented in Table 5, we employed a binary logistic regression to examine the correlates of coming out to the three different milestones of interest. For each milestone, we reported two models: one is unadjusted model where each covariate was treated as a sole correlate of coming out (i.e., gross effect) and other is an adjusted model where all covariates were considered simultaneously (i.e., net effect). Coefficients were expressed as the ratio of odds of disclosure versus not disclosure for each category relative to the comparable odds of the reference category

for each covariate. Statistically significant odds ratios greater than 1 indicate that the particular category is associated with higher chances of coming out than the reference category, while values below 1 suggests the contrary. Within each model, statistically significant results for logistic regression emerged for at least one individual category within all covariates in at least one of the three models.

According to Table 5, unadjusted results showed that individuals in older cohorts were significantly more likely to disclose themselves and to be outed to a family than their counterparts in younger cohorts. When all other variables were controlled, the odds of being outed to family for both middle and older cohorts remained significant, while the odds of coming out to family remain significant for those in the middle cohort only. The odds of coming out or being outed for all three milestones were significantly determined by gender. When all else is equal, men as compared to a woman, significantly reduced the likelihood of coming out to a straight friend and a family and being outed to family without consent.

Unadjusted and adjusted results indicated the significance of self-reported sexual identity on the likelihood of coming out and being outed. The bivariate results showed that being gays or lesbians is positively and significantly associated with the likelihood of disclosure for all three milestones. When all other variables were considered, however, the odds of disclosing to a friend became insignificant, while those for the other two milestones reduced slightly but remained strongly significant. In terms of race, the unadjusted and adjusted results consistently showed that those who reported their race other than White were significantly more likely to experience being outed to their family compared to White persons. While the opposite association was observed for the other two milestones, neither were statistically significant.

In relation to education and economic status, only being outed to family was found to be statistically significant. While holding other factors constant, those with higher than high school education had a lower likelihood of being outed to their family compared to those with high school or less. With respect to economic status, only the unadjusted bivariate effect for low-income compared with poor persons included a statistically significant result. Poor persons had a higher likelihood of being outed to their family compared with those in the low-income status. For coming out to friend and family, none of the results were statistically significant. Similarly, for those in the middle- and high-income groups, the results were insignificant.

For coming out to family, having been born in the US appeared to have the positive effect in the unadjusted model with those born in the US have higher likelihood of coming out compared with those born outside of the United States. However, the difference in nativity became insignificant when all other variables were controlled in the models. Finally, the unadjusted results showed significant association between having enrolled in the conversion therapy program and the likelihood of disclosing to and being disclosed by the family. The odds of being outed to the family significantly increased with the ACE scores which took place during childhood.

Table 5: *Adjusted and Unadjusted odds ratio from binary logistic regressions predicting the probabilities of coming out to a straight friend and a family, and being outed to the family*

Covariate [a]	Came Out to friend		Came out to family		Outed to family	
	Gross effect [b]	Net effect	Gross effect	Net effect	Gross effect	Net effect
	OR (SE)	AOR (SE)	OR (SE)	AOR (SE)	OR (SE)	AOR (SE)
Cohort (Ref.=younger)						
Middle	1.96 (0.407)	1.39 (0.510)	2.72*** (0.212)	2.51*** (0.246)	1.69*** (0.136)	2.00*** (0.187)
Older	0.98 (0.300)	0.51 (0.435)	2.49*** (0.181)	1.17 (0.241)	2.44*** (0.131)	2.09*** (0.185)
Gender (Ref.=women)						
Man	0.61 (0.284)	0.36** (0.366)	1.22 (0.159)	0.63** (0.219)	1.62*** (0.113)	0.67* (0.168)
Non-binary	0.95 (0.626)	1.17 (0.759)	0.75 (0.283)	0.90 (0.402)	0.87 (0.222)	0.95 (0.309)
Lesbian or Gay (Ref. = no)						
Yes	3.15*** (0.301)	3.11 (0.668)	6.68***(.187)	4.96*** (0.411)	4.24*** (0.115)	3.84*** (0.271)
Race (Ref.=others)						
White	1.15 (0.483)	1.13 (0.382)	1 (0.158)	1.15 (0.123)	0.69** (0.115)	0.72* (0.162)
Education level (ref.=high school or lower)						
Beyond high school	1.52 (0.388)	0.58 (0.434)	1.05 (0.190)	0.65 (0.231)	1.30 (0.137)	0.59** (0.173)

Table 5 (Continued)

Covariate[a]	Came Out to friend		Came out to family		Outed to family	
	Gross effect[b]	Net effect	Gross effect	Net effect	Gross effect	Net effect
	OR (SE)	AOR (SE)	OR (SE)	AOR (SE)	OR (SE)	AOR (SE)
Economic Status (Ref.=Low income)						
Lower-middle income	0.78 (0.454)	0.87 (0.624)	0.81 (0.250)	0.90 (0.317)	0.67* (0.194)	0.78 (0.246)
Middle Income	0.83 (0.497)	0.67 (0.679)	0.86 (0.275)	0.80 (0.364)	0.78 (0.212)	1.03 (0.285)
High Income	1.29 (0.414)	0.90 (0.611)	1.42 (0.225)	1.12 (0.297)	0.80 (0.167)	0.64 (0.231)
Nativity (Ref.=non-US born)						
US born	1.57 (0.483)	1.78 (0.633)	1.75* (0.272)	1.21 (0.336)	1.54 (0.224)	1.32 (0.309)
Ever had Conversion Therapy (ref.=no)						
Yes	1.40 (0.602)	1.75 (0.685)	2.46* (0.399)	1.41 (0.488)	3.19*** (0.255)	3.61*** (0.346)
ACE Index	1.05 (.065)	1.10 (0.084)	1.04 (0.036)	1.11* (0.050)	1.10*** (0.026)	1.11** (0.036)
Pseudo R^2		0.031		0.119		0.173
AIC [c]		426.2902		1092.17		1,692.184
Accuracy		0		.854		.707
Number of observations	1,416	1,416	1,416	1,416	1,416	1,416

Note: [a] Reference categories of covariates in parentheses; *$p < .05$, **$p < .01$, ***$p < .001$, [b] Gross effect refers to the bivariate model and the Net Effect refers to the multivariate model. OR = Odds Ratio, SE = Standard Error

4.4. Timing of Coming Out

This section aims to better understand the timing of first disclosing a sexual minority identity to family and a friend, and the timing of being outed to a family member without consent. The timing of these milestones has important impacts on health and well-being. Specifically, the study explores factors associated with the disclosure for each cohort.

As previously described in Chapter 3, the cox proportional hazard model was employed to assess a number of covariates against the survival time period, which is calculated as years of age once the event took place or in the case of censoring, the age at the time the survey data was collected. The censoring is to take into account that while the event did not yet take place at the age when the survey was recorded, the participant may be able to meet this event later in life past the timing of data collection. The study assumes "T" to be age of the participant and is between 1 and 55, with the cutoff related to the oldest person to be surveyed. All of the persons who responded to the survey question are the population at risk. The time, "t", is the age when the participant met the coming out milestone or their age when the survey was taken in the case the participant was censored and did not yet meet the event. Of interest is the survivor function, $S(t)$ and the hazard function $h(t)$, where the survivor function represented the probability a person survives past a specific age, "t". The hazard function represents the instantaneous rate at which to meet the coming out milestone by age, "t".

The survival function can be written mathematically as:

$$S(t) = P(T_1 > t) = 1 - F(t)$$

Mathematically the hazard function can be calculated under the cox regression model against a baseline hazard for each covariate (Cox, 1972) and written as follows:

$$h(t) = h_0(t) * exp(\beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k)$$

### 4.4.1. The median ages of "coming out": survival curve

Figure 8 provides an overview of the probability of the participants to reach each three coming out milestones by age represented with the cumulative survival probability along the Y-axis from 0 to 1 and age along the X-axis. At time T=0, the survival probability of all of the

survey participants equals 1, indicating that all participants did not yet come out or was not outed, whereas 0 suggesting that all the participants had come out or been outed.

For all three milestones, as illustrated in Figure 8, there were sharp decreases in survival probability starting from age 10 to 25 years, suggesting the majority of the first disclosure occurred within this age group. The median ages of the survival curve for coming out to at least one straight friend and a family taken into consideration the censoring of those who did not yet meet the milestones are 18 and 20 retrospectively. The median age for being outed to a family is distinctively older at age 25 years. These ages are the ages where 50 per cent of the participant had not yet come out or been outed, while the rest 50 per cent had already came out or have been outed (see the dash lines).

Nearly all the participants had disclosed themselves to a straight friend or a family before their 50th birthday according to the survival analysis results. At this similar age, around one-third of participants had not been outed to a family member. This could be due to the time limit of the study that censored the participants who might be outed after the survey. Another possible reason is that the participants who had already disclosed their sexual identity to a family member might not consider and report themselves as being outed to a family. As the curve becomes flatten after 40s, it suggests those who had not yet outed to their family likely remained as such for the duration of their life at least until age 59, which is the oldest person in the study at time of data collection and eligibility.

Figure 8: *Survival Probability curve for reaching the three coming out milestone*
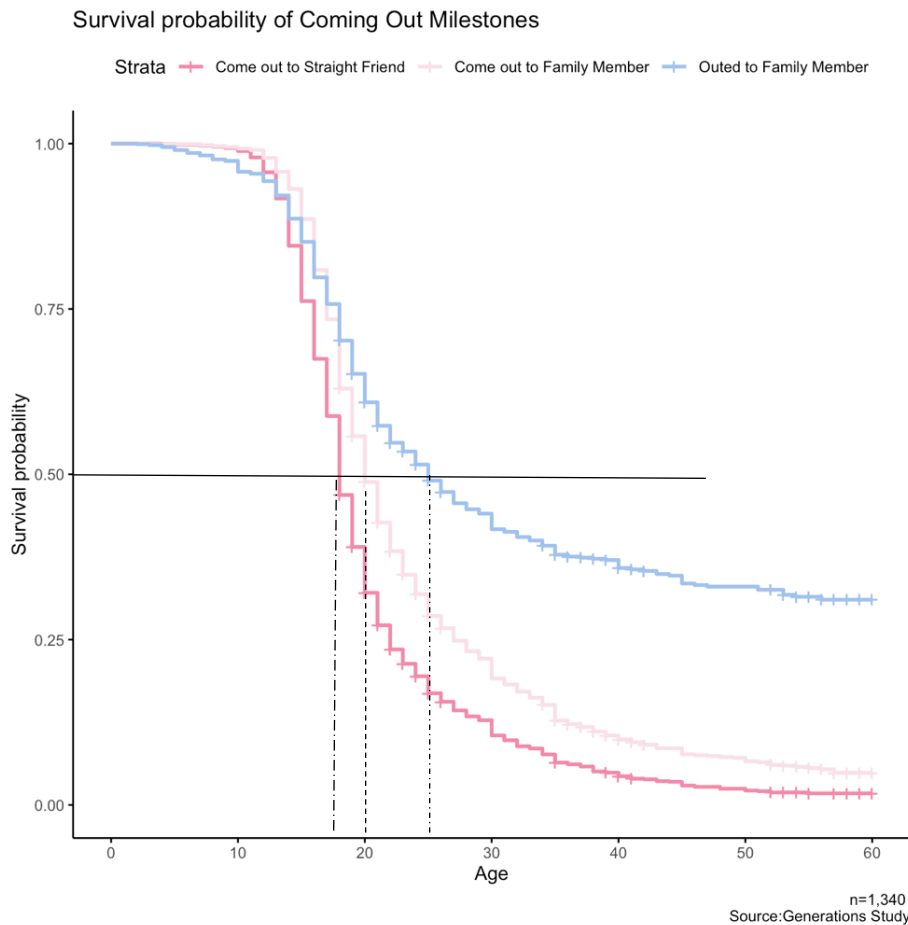
Source*: Developed by Matthew Kusen*

4.4.2. Multivariate Results from Cox Regression

Hazard ratios are presented in Table 6 in relation to the timing of coming out milestones alongside standard error in parathesis with significance stars for the covariates at the levels of .05, .01, and .001. Hazard ratios (HR) are presented based on cox proportional regression model and utilizing survey weights through the Survival and Survey R packages (Lumley, 2021). A hazard ratio greater than 1 indicates a higher hazard of coming out or being outed associated with a particular category relative to the reference or baseline category, whereas a value of less than 1 suggests the contrary. It is possible to present hazard ratios as a percentage decrease or increase. For those with a hazard ratio less than one, you many take 1 minus the hazard ratio times 100% to get the percentage. For example (1 - .8 HR) x 100% = 20% decrease at any given time. For those that are great than one, you may do the hazard

ratio minus 1 times 100% to get the percentage increase. For example, $(1.61 - 1) \times 100\% = 61\%$ increase at any given time (Spruance et al., 2004).

The results from Cox regression analysis were somewhat consistent to those the logistic regression presented the previous section. For cox proportional hazard regression, the cohort variable has been removed as the age is already a factor in survival analysis and the difference of eligible time between the different cohorts may have the potential to bias the results. We have also seen a pattern of missingness related to cohort during our MCAR tests, which further strengthen the argument to remove this variable for this part of the analysis.

Men had a lower hazard compared with women across all three milestones. Men at any given age were 19% less likely of coming out to a straight friend, 23% less likely of coming out to a family member or being outed to a family member without consent compared with females. Non-binary persons on average were 61% more likely of coming out to a straight friend compared with females at any given time. In relation to coming out or outed to family the findings for non-binary persons were not significant in this study. Lesbians and gay persons experienced higher probability of coming out to family and being outed to family at any given point of time. For coming out to a friend, the results were not significant for sexual identity. The highest hazard and rates were experienced for being outed to family where 147% more likely to be outed to their family at any given time compared with other sexual minorities. This steep drop especially around ages 12 to 22 is illustrated through Figure 9. White persons were 29% less likely to be outed to their family compared their counterparts who were Persons of Color and illustrated in Figure 10. Similarly, white persons were less likely at any given age to come out to a friend and a family member on their own volition.

Those who are less educated (i.e., High School (H.S. or less), they experienced a higher risk for all three milestones compared to those who had an education beyond H.S. and this is represented visually in Figure 11. In relation to economic status as well as being born in the United States or abroad, none of our findings were considered to be significant so interpretation of these covariates within our dataset and analysis should be done with caution.

On average, those who experienced conversion therapy were 67% more likely of being outed to their family compared with those who did not at any given time. Figure 12 helps to illustrate the dangers of being outed as a sexual identity minority without consent and the correlations with higher likelihood of experiencing conversion therapy especially when outed earlier in in life. For every increase in ACE index score at any given age, we can expect an increase of 4% more likely to come out to a family member and 8% more likely to be outed to

the family. Highlighted that those with the highest ACE scores having the highest probabilities of coming out and being outed to friends and family.

Table 6: *Hazard ratios (HR) and standard errors (SE) from cox proportional regression predicting probability of coming out for the three milestones*

Covariate [a]	Came Out to friend	Came out to family	Outed to family
Gender (Ref.=women)			
Man	0.81** (0.065)	0.77** (0.069)	0.77* (0.083)
Non-binary	1.61*** (0.110)	1.34 (0.120)	1.11 (0.158)
Lesbian or Gay (Ref. = No)			
Yes	1.14 (0.064)	1.64*** (0.069)	2.47*** (0.086)
Race (Ref.=People of Color)			
White	0.84* (0.060)	0.84* (0.064)	0.71*** (0.077)
Education level (ref.=high school or lower)			
Beyond H.S.	.55** (0.061)	0.57** (0.065)	0.63*** (0.078)
Economic Status (Ref.=poor)			
Low-Income	1.01 (0.090)	1.06 (0.097)	0.88 (0.114)
Middle Income	1.09 (0.105)	1.20 (0.114)	1.13 (0.133)
High Income	0.93 (0.083)	1.04 (0.090)	0.77 (0.105)
Nativity (Ref.=non-US born)			
US born	1.25 (0.135)	1.34 (0.145)	1.29 (0.182)
Ever had Conversion Therapy (ref.=no)			
Yes	1.14 (0.111)	1.08 (0.116)	1.67*** (0.123)
ACE Index	1.02 (0.013)	1.04* (0.014)	1.08*** (0.018)
Score Log-Rank Test (df= 11)	182.7 ***	168.1 ***	271.4 ***
Likelihood ratio test (df= 11)	171.5 ***	163.7 ***	250.2 ***
Number of observations	1,340	1,340	1,340

Note: [a] Reference categories of covariates in parentheses; *p < .05, **p < .01, ***p < .001

Source: Matthew Kusen

Figure 9

Survival Analysis of Being outed to your family
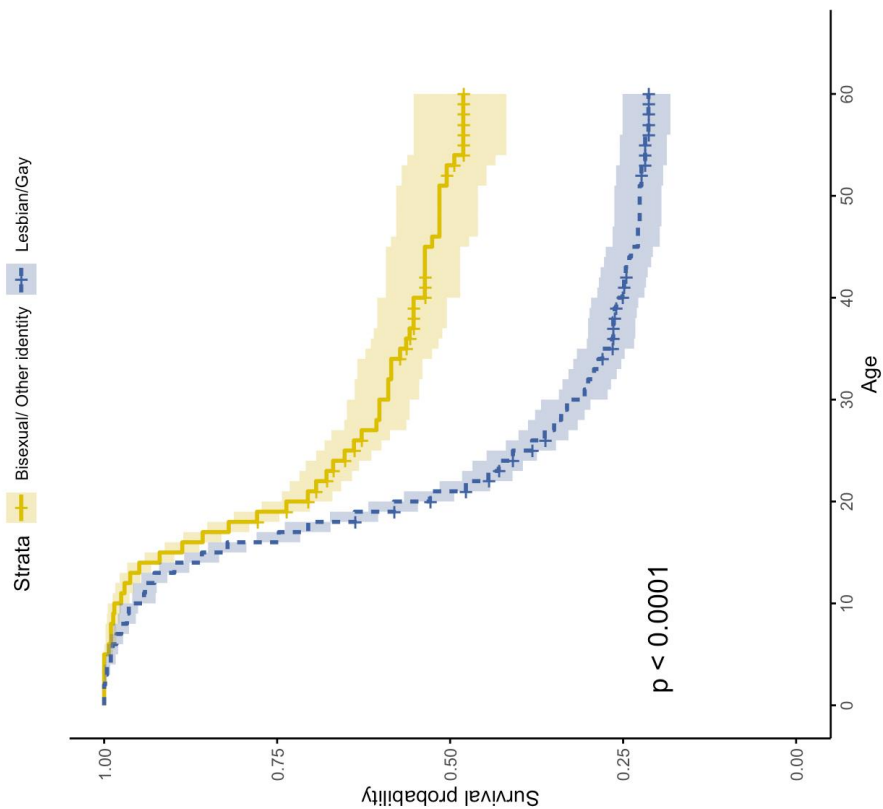by Lesbian/Gay vs. Bi/other sexual identity

Figure 10
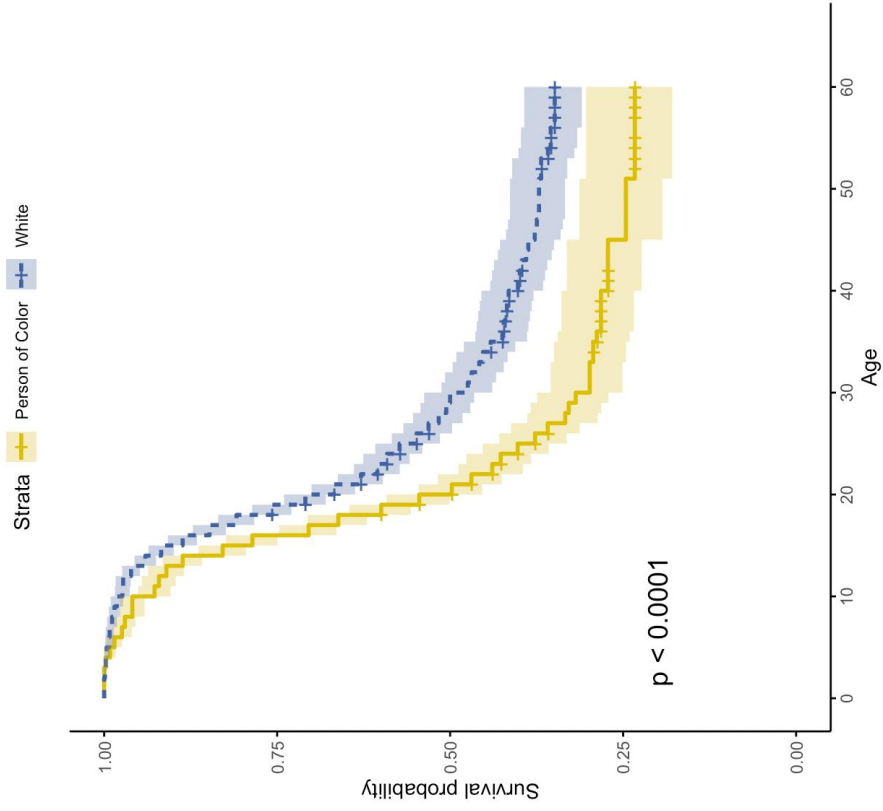
Survival Analysis of Being outed to your family
by race

Figure 11

Survival probability of outed to Family as LGBQ+
by education level

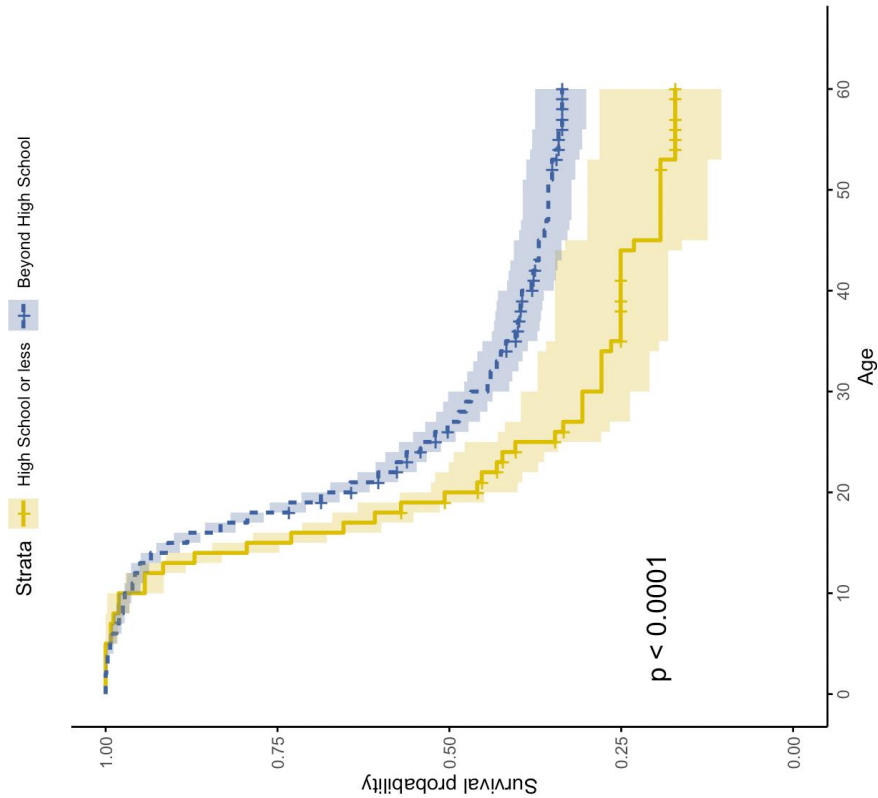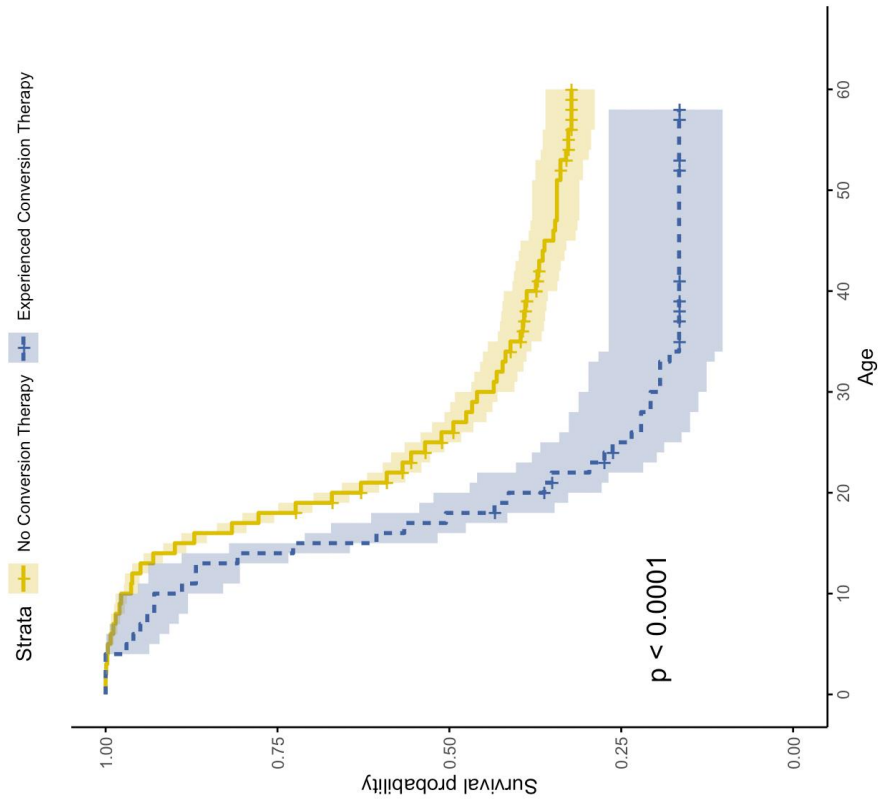**Figure 12**

Survival probability of outed to Family as LGBQ+
by experiencing conversion therapy

CHAPTER 5: DISCUSSION AND CONCLUSION

This concluding chapter comprises three parts. In the first part, the major findings from all analyses are discussed in relation to research objectives, questions and previous research. Next, the key policy implications of the study are discussed. The final section addresses the study's limitations in which suggestions for future research are provided.

5.1. Discussions of this study's major findings

This thesis addressed and examined the timing of three coming out milestones for sexual identity minorities against sociodemographic correlates. The study has provided quantitative evidence on the timing and patterns of coming out and being outed. This study has also studied proportional hazards and likelihood of coming out and being outed among different sub-population of LGBQ+ persons to assess likelihood over time that a person would or would not come out or be outed.

5.1.1. Patterns and age of 'coming out'

Previous literature has highlighted that older generations tend to come out less compared with their younger generations (Grierson & Smith, 2005). In relation to coming out to straight friends, this study was in line with that finding. There was one noticeable difference in that older and middle generations as they had higher rates of coming out to their family compared with the younger generation. One reason may be in relation to the timing of the study where the Older generation have had up to 30 years more to come out compared with the younger generation. Although the patterns of age when the first coming out happened most of the time before age 25. This finding is different from some previous research and further studies may be required to understand the rationale for this difference (Grierson & Smith, 2005). There have been no quantiative studies on age or patterns of being outed without consent previously so it's not possible to compare these results with any previous literature for that outome. Although the patterns show that the median age tends to be around the same age compared with coming out on your own free will. The higher rates of older cohorts being outed may be in relation to the homophobic era that they were brought up with resulting in larger rates of being outed (Hall et al., 2021).

5.1.2. Correlates of 'coming out'

The previous literature hypothesized that being outed in unsupportive environment may result

in negative health outcomes (Reisner et al., 2020) and this research helps to demonstrate that especially when assessing the impacts on enrollment in Sexual Orientation Change Efforts (SOCE) for those outed without consent along with higher ACE scores. This study's findings highlight the importance of understanding and identifying which groups have higher odds of being outed as LGBQ+ to their family members before they are ready and which factors or groups have higher or lower likelihood of coming out. The study and findings also help to include quantitative analysis and include a temporal aspect in relation to the age when sexual identity minorities may meet coming out milestones.

As mentioned in relation to Cohort, previous literature has found that older generations tend to come out later in life (Grierson & Smith, 2005). Our logistic regression results were not significant for coming out in relation to the older generations and thus we are unable to compare this finding. In relation to being outed, our findings that show the middle and older generations were more likely to be outed to their family compared with the younger generations. This is most likely due to the rampant homophobia and fear of being LGBQ+ in the past when these older participants were coming of age (Grierson & Smith, 2005).

Men compared with women have lower likelihood of coming out and being outed when compared with women. Previous literature had mostly found that gender was not a significant variable (Dunlap, 2016) so it is especially interesting that this research has found a number of significant variables in relation to gender and coming out and being outed for both types of multivariate analysis while keeping other factors constant. This research will add to the literature and for one of the first times showing that men compared with women are less likely to come out and be outed to their families and across age they have a lower likelihood of all the coming out milestones assessed. One potential reason for this is that we live in patriarchal societies that expect men to be masculine and there are stereotypes that some LGBQ+ men tend to be more feminine (Lick & Johnson, 2015). Further research is needed to better understand why women may be more likely to come out and the anthropological and cultural reasons this has occurred in American society.

In line with the previous literature (Hall et al., 2021), we see higher likelihood of coming out milestones for lesbian and gay persons and mixed results among gender categories. This research will help policy makers and practitioners who work directly with and determine legislation on where to focus support to help reduce disparities for LGBQ+. It also sheds an anthropological and cultural lens on social groups and how factors influence reaching coming out milestones and which groups may either come out or be outed at earlier ages. It helps to

understand that while we have made significant progress in making LGBQ+ persons feel more comfortable to come out on their own terms, younger cohorts still don't feel fully safe to share this with their family members. It also shows that more attention may be needed for bisexuals and other sexual minorities who tend to come out later in life and that more insight and research need to be done specifically on non-binary persons to assess qualitatively for that subgroup which was not found to be statistically significant in this research.

The race variable highlights that among people of color, there is a higher tendency to being outed to family and also at younger ages as demonstrated through the survival analysis. This may help to understand why black and latinx LGBQ+ people face additional hurdles and stigma that white people do not face due to cultural norms. This is an interesting finding as most of the previous literature has found that race was not statistically significant in relation to coming out milestones although this is the first paper to assess quantitatively being outed without consent (Dubé & Savin-Williams, 1999; Parks et al., 2004). Lesbian and gay persons had higher likelihood and at younger ages of coming out to family and being outed to family compared with bisexual and other sexual minorities. This is of interest and in line with previous research where bisexuals may face specific stigma and since some may be in heterosexual presenting relationships, less likely to tell their family members or be outed (Bishop et al., 2020).

Our research in particular highlights the dangers of outing LGBQ+ persons, especially youth, to their family without consent as we have demonstrated those persons had 3.61 times the odds of being enrolled in SOCE/conversion therapy and correlation of higher levels of Adverse Childhood Experiences. Our survival analysis has shown that on average at any given time, those who experienced conversation therapy were almost twice as likely to have been outed to their family without their consent (HR=1.67). This may help illustrate why many LGBQ+ persons decide not to come out to a family member as they rightfully fear it could result in being enrolled in dangerous and unscientific psychological abuse from SOCE that manifests into long term mental health issues and negative health outcomes. Currently, in the United States many states including Florida, Texas and other conversative areas are enacting legislation that would require schools to out LGBQ+ youth to their families without consent (Young, 2022).

This research quantitatively demonstrates the negative outcomes this type of legislation will have and how that may result in long term trauma due to enrollment of conversation therapy and/or higher frequencies of adverse childhood experiences. While being outed to a family

member has a lower frequency of occurring compared with coming out to at least one family member by oneself, the issue of being outed without consent is very harmful. This research project has specifically demonstrated these dangers in the correlation of higher likelihood of being enrolled in conversion therapy when being outed without consent.

5.2. Policy Implications of the study

This section presents the implications of the study for policy actors, community activists, LGBQ+ community members, allies, and health providers. Three key policy implication of the study are discussed and provide implications to ensure youth have voice, rights and self-determination in determining when and whether to come out as a sexual identity minority.

First, this research can be used by those involved in the policy and advocacy space to advocate against laws that would require schools, partners, doctors or other professional to forcibly out sexual identity minority youth. This type of legislation at the state level is becoming increasingly common in the United States. This research provides the first quantitative figures to be utilized for data to advocate against these harmful policies and showcase the prospective impacts the legislation would have.

Secondly, this research may be used for those who are advocating on banning and efforts to eliminate Sexual Orientation Change Efforts (SOCE) or conversion therapy. These practices are detrimental to sexual and gender minorities and this research helps to provide quantitative evidence as to the correlations between being outed as LGBQ+ and enrollment in such torture.

Lastly, this research may be used by school systems and public health interventions to better target LGBQ+ youth in their education and counseling programs. For example, targeting those who are more likely to have higher ACE score and experiencing those negative childhood experiences may be a useful targeting approach. LGBTIQ+ counseling and education programs should be led my community members and will benefit from peer led approaches to ensure do no harm in reaching these youth.

5.3. Limitations and Directions for Future Research

While this study has several strengths and contributions to the academic literature related to the demography of sexuality, there are certain limitations that come with using this data set and the analyses. First, the data set used, and the eligibility criteria leaves out some key groups of LGBQ+ persons in the United States that are of interest to this type of research. For age, persons who are under 18 have not been included as well as persons who fall outside of

the age threshold for the three cohort generations of interest. This means that the analyses are not representative of those populations in the US nor for ethnicities outside of white, Latino and black. Asian Americans and Indigenous populations have their own cultural and societal norms that may impact sexuality milestones which would be of relevance and help add to the literature. The fact that the original eligibility screening took place in only English language means that some minority groups such as Latinos who only speak Spanish would not be able to participate in the survey resulting in a potential coverage error.

Furthermore, given the nature of the data collection and historical reporting by participants of their age of sexual identity milestones, there is a possibility of recall bias within the sample. For the middle and older cohorts could have a number of years between date of data collection and the recalled date of event. Recall bias is a type of measurement bias in retrospective studies. Also, the age cohort and time-to-event analysis may have some limitations in terms of censoring and age of coming out as those from the youngest cohort have not had as much time as those from the oldest cohort in terms of reaching their sexual identity milestone. However, asking three cohorts of this range these questions regarding sexual identity milestones at around the same age would take over 30 years to complete which would be extremely difficult to do. Lastly, the study also only included up to Millennials so Generation Z and the next generation are missing from the data set and it will be useful to conduct similar data collection and studies for the newest generation as significant progress has been made in the United States to help support sexual identity minorities compared with the context that the Oldest generation had faced.

While there are some minor limitations in terms of this analysis and the eligibility to be included in this study, the strengths overweigh these in terms of the contribution to the literature. This study also provides new insights into using a method of statistical analysis that has not been used yet to assess sexual identity milestones and coming out among LGBQ+ populations.

This study sheds light on the sociodemographic correlates for coming out and being outed for sexual identity minorities in the United States and highlights the diversity and major differences among sub-populations that should be understood among LGBTIQ+ persons that tend to be lumped together as one monolithic group. This study helps contribute to the nascent quantitative literature among sexual identity minorities and rates of coming out as well as the dangers of being outed to family without consent.

It has also demonstrated on how those interested and studying sexual and gender minorities may adapt and utilize quantitative techniques typically used in mortality studies such as time-to-event analysis. Hopefully, this research may act as a basis and support future research on this topic utilizing survival analysis in countries outside of the United States and to shed light on this understudied and important population.

CHAPTER 6: ETHICAL DECLARATION

The data was publicly available and not individually identifiable and therefore this research does not constitute human subjects research and thus exempt from ethical review from an Institutional Review Board. No conflict of interests exists in carrying out this research.

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