Intergenerational Ties, Sexual Orientation, and Health and Well-Being of Sexual Minority Adult Children

by

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A Dissertation

Submitted to the University at Albany, State University of New York

in Partial Fulfillment of

the Requirements for the Degree of

Doctor of Philosophy

College of Arts and Sciences

Department of Sociology

January 2024

ABSTRACT

The three studies in this doctoral dissertation explored overarching themes related to intergenerational relationships, health, and well-being of sexual minority adult children, using data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). The studies have shared but distinctive focal points, including various dimensions of intergenerational relationships, specific subsets of data sources, and methodologies. The first study used two latent growth curve models to examine how intergenerational relationships between adult children and their older parents evolve over time, specifically focusing on the emotional closeness gap between sexual minority and heterosexual adult children. The results showed that sexual minority status was significantly associated with lower emotional closeness to both mothers and fathers during early adulthood. The results also revealed that sexual minority status did not significantly impact the trajectory of maternal and paternal closeness from early to midlife. These findings suggest that sexual minority adult children have poorer intergenerational relationships compared to their heterosexual counterparts, and this disparity persists throughout adulthood without significant improvements over time.

The second study investigated the impact of sexual minority status on parental financial assistance, focusing on general assistance and specific types of assistance (i.e., education, housing, and other expenses). The results revealed that, when considering overall financial assistance across all types, there was no significant difference based on sexual minority status; sexual minority adult children were not more or less likely to receive financial assistance compared to their heterosexual counterparts. However, when focusing on educational assistance, being a sexual minority seemed to confer an advantage, as parents were more inclined to provide financial support for the education of their sexual minority adult children. Therefore, the study

found that the impact of sexual minority status on parental financial assistance may be type specific.

The third study examined the mediating role of intergenerational relationships in the association between sexual orientation and two mental and physical health outcomes, depressive symptoms and self-rated health. The results affirmed the well-established link between sexual minority status and adverse mental and physical health outcomes, with a particularly robust association observed for mental health. Moreover, certain dimensions of intergenerational relationships, such as maternal and paternal closeness were identified as mediators in the relationship between sexual minority status and poor mental and physical health outcomes, although the patterns and relationships varied depending on the specific mediators. Taken together, these three studies present a complex story of how the intergenerational family context shapes the health and well-being of sexual minority individuals. Ultimately the findings highlight the importance of interventions and practices for sexual minority individuals and their families.

Table of Contents

Chapter 1 Introduction

Currently, it is estimated that there are more than 11 million lesbian, gay, bisexual, and other sexual minority individuals in the United States in 2020, which composes 5.6% of the U.S. adult population (Jones, 2021). The proportion of the U.S. population that identifies as lesbian, gay, bisexual, and other sexual minority is even larger among younger generations; 15.9% of people born after 1997 identified as lesbian, gay, bisexual, or 'other' sexual minority in 2020 (Jones, 2021). Oftentimes, the demographic estimates of those who identify as sexual minority vary from 3.5% to 10%, depending on the definition and measures of sexual minority population (Gates, 2014). However, even the most conservative estimate of 3.5% accounts for approximately 9 million Americans, a number roughly equivalent to the population of New Jersey. Thus, sexual minorities, though still a minority group in terms of numbers, still account for a sizable portion of the population in the United States.

This substantial sexual minority population and the growing number of persons who identify as a sexual minority, however, experience unique challenges in society, including issues related to policy, law, education, workplace, family, and social support. Numerous studies have underscored the prevalence of mistreatment and discrimination again sexual minority individuals within legal and administrative systems, a heightened likelihood of harassment and discrimination in schools and workplaces, increased economic insecurity, and a greater risk of social isolation for sexual minority individuals compared to non-heterosexual individuals (The National Academies of Sciences, Engineering, and Medicine, 2020). Despite strides toward a more accepting and equitable social atmosphere over the past few decades, discrimination and stigma persist in many aspects of everyday life, taking a toll on the well-being of sexual minority individuals throughout their life course. Notably, sexual minority

individuals, as a population, are relatively unhealthy compared to their non-sexual minority counterparts, exhibiting high rates of behavioral, mental, and physical health risks (The Institute of Medicine, 2011) and lower scores on multiple measures of well-being (Stacey et al., 2022). Even in recent times, a longitudinal study examining diverse birth cohorts of sexual minority individuals found enduring social stress emanating from a stigmatized social status that affected health and well-being, even among more recent and younger cohorts aged 18 to 25 years (Frost et al., 2022).

Many broadscale social factors have been suggested to explain why sexual minority individuals often exhibit worse health outcomes compared to their heterosexual counterparts across various metrics. Despite recent advancements such as the legalization of same-sex marriage in the US, exemplified by the landmark Obergefell v. Hodges Supreme Court case in 2015, society is still heteronormative, perpetuating increased stress and ostracization for individuals who do not identify as heterosexual (Russell & Fish, 2016). According to the minority stress theory (Meyer, 1995, 2003), the social stigma associated with minoritized social identities can contribute to worse health outcomes, a pattern evidenced in studies examining health disparities between racial/ethnic minorities and the majority white population (Calabrese et al., 2015). The negative mental and physical health consequences resulting from experienced minority stress encompass depression, suicidality, substance abuse, HIV/AIDS, STIs, cancer, cardiovascular diseases, and obesity, in comparison with their heterosexual peers (Lick et al., 2013). These detrimental outcomes are not limited to health, but also include worse financial standing, poverty, homelessness, and food insecurity (Emlet, 2016). Thus, sexual minority individuals unfortunately face a heightened risk of adverse life outcomes and may find themselves in a position necessitating assistance and safe havens.

One potential refuge from the social stigma faced by sexual minority individuals, particularly adolescents and young adults, may be sought within their families at home. Sadly, in many cases, home and family fail to provide the safe havens these individuals need. Sexual minority individuals can often encounter family rejection and lack of support based on their sexual identities (Reczek & Bosley-Smith, 2022). This rejection can be extreme to the point of sexual minority children being ejected from their homes or running away on their own, largely explaining why sexual minority youth tend to be runaways, thrownaways, and homeless (Ormiston, 2022). In an effort to avoid such family drama, some sexual minority individuals may refrain from coming out to their families – a significant milestone for many in the sexual minority community (Bishop et al., 2020). However, the knowledge of sexual minority status can often be disclosed whether the individual wants it known or not. Factors involving in the intrafamilial conflict arising from the knowledge of an individual being of sexual minority status include parental proneness to guilt and shame (Armesto & Weisman, 2001). Regardless of the motivations behind familial rejection of sexual minority individuals, it is clear from the research that familial alienation is closely associated with negative health and life outcomes in many domains (Ryan et al., 2009; la Roi et al., 2016; Shilo & Savaya, 2011).

Over the past few decades, research has examined how familial relationships play a role in life outcomes. After all, relationships between children and parents constitute one of the most fundamental bonds throughout a person's life (Rossi & Rossi, 1990). It follows that the quality of this relationship would greatly affect the subsequent quality of life for many individuals. Research has shown that high-quality relationships between parents and children reciprocally benefit both parties (Carr & Springer, 2010; Thomas, Liu, & Umberson, 2017). The benefits of healthy parental relationships extend from better financial standing (Seltzer &

Bianchi, 2013; Spilerman, 2000) to improved health outcomes (Lowenstein 2007; Umberson et al., 2010). Critically, solid ties between children and parents not only serve as an emotional safety net to children during the younger stages of life but also provide an avenue of instrumental and financial support throughout all courses of life, albeit with varying degrees of dependency and characteristics (Bengtson & Kuypers, 2018). Whether strong or weak, intergenerational relationships can affect every major domain of one's life. Thus, parental relationships can be seen as the starting point from which all other relationships and life outcomes unfold.

Given the knowledge that sexual minority children and adults may have more strained intergenerational relationships and that said intergenerational relationships are so important to overall well-being, an important question arises: To what extent can differences in life outcomes between heterosexual and sexual minority individuals be attributed to variations in intergenerational relationship? Fortunately, recent research does speak to this very question. Overall, much of the research indicates that sexual minority children tend to have lower quality relationships with their parents compared to their heterosexual counterparts (Argyriou et al., 2020; Montano et al., 2008; Needham & Austin, 2010; Ueno 2005; Watson et al., 2019). Reczek (2020), for instance, demonstrated that parents may withdraw support, both emotional and otherwise, from their sexual minority adult children. The loss of such support could easily remove the buffer effect of a safety net, such as the ability to temporarily move back home after job loss or a breakup with a cohabitating partner, triggering a cascade effect of life stressors for sexual minority individuals.

This dissertation adopts the life course perspective as an overarching theoretical framework to capture the dynamics of intergenerational relationships, health, and well-being of

sexual minority individuals over the courses of their lives. The life course perspective, above all, emphasizes the importance of understanding individuals' experiences and behaviors within the broader context of their life trajectories (Elder, 1998). For sexual minority individuals, their sexual orientation and its significance in their general life circumstance are not an isolated aspect but interacts with various life stages, timing, transitions, and developments (Floyd & Bakeman, 2006). Viewing intergenerational relationships through this lens allows for a deeper understanding of how sexual minority individuals navigate these relationships across different developmental periods, as reflected in the first study reported in Chapter 2. Furthermore, the life course perspective acknowledges the accumulation of advantages or disadvantages, and chains of risk, over time and their impact on individuals' lives (Elder, 1998). It recognizes that early life experiences can have long-lasting effects that extend into adulthood, influencing both the quality and dynamics of intergenerational relationships. For sexual minority individuals, this perspective helps uncover how cumulative experiences of stigma, discrimination, and resilience may shape their intergenerational relationships and exert a lasting impact on their health and well-being throughout their lives. This point is reflected in the second study reported in Chapter 3 and the third study reported in Chapter 4. Lastly, the life course perspective considers the influence of historical and social factors on individuals' lives (Elder, 1998). For sexual minority individuals, societal changes, legal advancements, and shifts in attitudes towards sexual orientation have shaped the opportunities and constraints they face within intergenerational relationships. Understanding these broader contextual factors is crucial for exploring the experiences and dynamics of sexual minority individuals across generations in specific times, and this viewpoint forms the background that connects the entire dissertation. Therefore, this dissertation employs a life course perspective throughout the studies to

comprehend sexual minority status, intergenerational relationships, and health and well-being. In doing so, the current dissertation pays particular attention to the life stages in and after young adulthood, extending beyond a wealth of research has centered on sexual minority adolescents and their family relationships (see Bouris et al., 2010 for a systematic review).

Importantly, over the life course, intergenerational relationships are characterized by different dimension -- emotional closeness, contact, and instrumental help – which this dissertation closely examines in each study. According to Hogerbrugge & Komter (2012), intergenerational emotional closeness, often referred to as affectional solidarity, means the emotional bonds and feelings of closeness, warmth, and support among family members across generations. It signifies the depth of emotional attachment, love, and care, forming a fundamental basis for intergenerational relationships. Intergenerational contact, often referred to as associational solidarity, encompasses the frequency and regularity of contact and social interaction between parents and children. It also includes shared activities, time spent together, and ongoing communication within the family. Higher associational solidarity implies frequent and meaningful interactions, while lower associational solidarity may indicate infrequent or limited contact among family members. Intergenerational instrumental help, oftentimes referred to as functional solidarity, involves practical support given and received between generations. This support includes tangible assistance, material resources, caregiving for children, patients, or elderly individuals within the family network. Functional solidarity demonstrates the reliance on and provision of practical assistance among generational members. All three dimensions of intergenerational relationships are important and interconnected, yet they have distinct natures that necessitate nuanced considerations in studies.

This dissertation consists of the three distinct studies reported in Chapters 2, 3, and 4, in addition to the introduction and conclusion chapters. The three studies share key topics of sexual orientation, intergenerational family relationships, health, and well-being of sexual minority adults in the US. However, they diverge in their specific focal points on various dimensions of intergenerational relationships, the subsets of data sources, and methodologies.

All three studies use data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a national longitudinal panel survey starting with over 20,000 adolescents in grades 7-12 in the United States during the 1994-1995 school year and has since undergone five waves of data collection, amassing a wide range of demographic, social, familial, socioeconomic, geographical, behavioral, and health data. The Add Health sample was drawn with a random probability sampling technique, selecting high schools across the United States stratified by region, urbanicity, size, type, racial composition, and grade span. Among many nationally representative, population-based, large-scale longitudinal datasets, Add Health stands out for providing comprehensive and detailed items regarding sexual orientation, family relations, health, and well-being throughout individuals' lifespans, which is best suited for the topics of the current dissertation. In particular, Add Health stands as one of the rare national surveys incorporating questions on sexual orientation across multiple waves, which is the key explanatory variable across all current studies. Only recently have national surveys started routinely collecting information about sexual orientation, and Add Health has been exceptional in that it included survey questions on sexual orientation since its inception in 1994 until the present. Thus, the availability of such rich data over a longitudinal timeframe aligns perfectly with the goals of the present dissertation, allowing us to explore interactions between sexual minority status, intergenerational relationships, and health and well-being

throughout the lifespan. This contrasts with much of the previous research that has focused on a narrow time window, such as adolescence.

The first study reported in Chapter 2 focused on the trajectories of emotional closeness between parents and adult children from young adulthood to midlife, particularly observing variations by sexual minority status. Prior studies have suggested potential differences in parent-child emotional closeness, indicating it might be weaker for sexual minority children compared to their heterosexual counterparts (Argyriou et al., 2020; Montano et al., 2008; Needham & Austin, 2010; Ueno 2005; Watson et al., 2019). While existing research has paid attention to strained relationships between adolescent and emerging adult sexual minority children and their parents, little is known about the long-term evolution of these relationships as sexual minority children age towards midlife. Given that understanding the temporal patterns and potential changes in these relationships is crucial for comprehending the interplay between sexual minority status and intergenerational relationships, the first study utilized longitudinal data from Wave III, IV, V from the National Longitudinal Study of Adolescent to Adult Health (Add Health) and latent growth curve modeling. The goal was to investigate the trajectories of emotional closeness between sexual minority and heterosexual adult children and their mothers and fathers. By comparing these trajectories by the sexual minority and heterosexual adult children groups, this study aimed to identify disparities, as well as changes or continuity in emotional closeness over time from emerging adulthood to midlife. Emotional closeness serves as a foundational element within intergenerational relationships, fostering meaningful contact and instrumental support within parent-child dynamics (Bengtson & Kuypers, 2018; Silverstein & Giarrusso, 2010). Investigating the longitudinal dynamics of

emotional closeness can provide insights into the experiences of sexual minority individuals and their parents, shedding light on the intergenerational relationships that shape their lives.

The second study reported in Chapter 3 focused on parental financial assistance and its specific types provided between adult children and older parents, investigating potential differences based on sexual minority status. Parents play a significant role in providing financial assistance to their adult children (Seltzer & Bianchi, 2013; Nomaguchi & Milkie, 2020). Moreover, the increase in educational costs and delayed employment made financial assistance from parents even more significant to adult children (Furstenberg et al., 2004). Parental financial assistance has a profound impact on the life chances and well-being of adult children, influencing their education, earnings, and occupational achievements (Spilerman, 2000). However, little research has explored the influence of a child's sexual minority status on parental financial assistance, potentially shaping the life prospects and well-being of sexual minority adult children differently. Therefore, the third study aimed to examine variations in the provision of general financial help and three specific types of financial help (i.e., education, housing, and other expenses) based on sexual minority status. Additionally, it sought to explore how two theoretical motives of parental financial help (i.e., altruism vs. reciprocal exchange) might explain these variations. The third study used data from the Add Health Parent Study (AHPS, 2015-2017) and conducted a series of multivariate analyses on each type of help.

The third study reported in Chapter 4 focused on all three dimensions of intergenerational relationships and their roles in mediating the connections between sexual minority status and mental/physical health. Health is a dynamic process influenced by various factors, including social relationships such as intergenerational relationships (Halfon & Forrest, 2018; Marmot & Bell, 2012; Thoits, 2011; Umberson & Thomeer, 2020) as well as social

status such as stigmatized social identities, like sexual minority status, which is linked to minority stress (Meyer, 1995, 2003). Studies have shown that quality parent-child relationships act as a protective factor for sexual minority individuals fin the face of hostile social environments and negative experiences outside the home, while strained relationships can directly and indirectly harm sexual minority individuals (Thomeer et al., 2018). However, prior studies have overwhelmingly focused on adolescent and young adult children (Bouris et al., 2010), leaving a knowledge gap in understanding how sexual orientation and intergenerational relationships influence the health and well-being of adult children entering midlife, a less explored life course stage. To expand our current understanding of sexual orientation, intergenerational relationships, and health beyond adolescence and young adulthood, the third study considered multidimensional domains of intergenerational relationships, including emotional closeness, contact, and instrumental help. Using data from Wave V of the National Longitudinal Study of Adolescent to Adult Health (Add Health), the third study conducted a pair of structural equation modeling analyses to examine the mediating role of each domain between sexual minority status and the mental health (i.e., depressive symptoms) and physical health (i.e., self-rated health) of adult children entering midlife.

Although each of the three studies focus on distinct research inquiries and utilize unique segments of Add Health data and statistical methodologies, the broad themes connecting them are sexual minority adult children, their relationships with their older parents, and the consequential impacts on their overall health and well-being. While the existing literature provides a solid baseline of knowledge on these themes, there remain gaps in knowledge, which will be further examined in the individual chapters. Ultimately, the core aim of this dissertation is to contribute to the expanding body of sociological literature on sexual

minority families and health. Research such as this not only expands our understanding of an increasingly relevant phenomenon in current society but also offers valuable insights to inform policy decisions aimed at better serving this often overlooked population.

Chapter 2

The Longitudinal Trajectories of Parental Closeness among Sexual Minority and Heterosexual Children from Emerging Adulthood to Midlife

Introduction

Intergenerational relationships between children and parents are one of the most salient and pivotal relationships throughout an individual's life course (Rossi & Rossi, 1990). Young children and adolescents rely intensively on their parents for care and resources. Even after children grow up and come of age, parents continue to provide care and serve as a safety net for their offspring. This support helps them smoothly transition into full adulthood, including finishing education, securing jobs, and establishing stable partnerships (Seltzer & Bianchi, 2013). Afterwards, adult children and their aging parents largely continue to be involved in close relationships, which include affective ties as feeling of connectedness, as well as instrumental support such as financial assistance, co-residence, and caregiving when necessary (Swartz, 2009). Life course theory highlights the aspects of "linked lives" (Elder, 1995) embedded in family generations, "being counted on by others and a resulting sense of significance" (p. 112). Parents and children are profoundly interconnected, shaping each other's life paths, opportunities, and outcomes. All of this to say, quality parent-child ties benefit the health and well-being of offspring throughout their lifespan and reciprocally benefit their parents (Carr & Springer, 2010; Thomas, Liu, & Umberson, 2017).

Despite this knowledge, we still know little about how parent-child ties differ by children's sexual orientation, especially considering the unique challenges posed to sexual minority children, such as family rejection, lack of support and understanding, conflict over

values and beliefs (Reczek & Bosley-Smith, 2022). Recent studies have begun to explore possible disparities in the strengths and quality of parent-child ties between heterosexual children and sexual minority children. Many studies have shown that parent-child ties may be relatively weaker for sexual minority children than their heterosexual counterparts (Argyriou et al., 2020; Montano et al., 2008; Needham & Austin, 2010; Ueno 2005; Watson et al., 2019).

On the other hand, studies on weaker intergenerational ties tend to focus on sexual minority children during adolescence and emerging adulthood, as this is the period when the majority of them actively develop their sexual identity and disclose it to others, including their parents (Mills-Koonce et al., 2018). Yet, what remains particularly understudied is how parent-child ties and potential disparities by sexual minority status unfold *over time*, especially as sexual minority children age into midlife. Although cross-sectional studies at one time point can offer insights into the parent-child relationships of sexual minority children, they could not fully capture the whole picture of the temporal development of intergenerational relationships that can transform as individuals progress through different life stages. What happens to the parental ties of sexual minority children who went through the external and internal turmoil of adolescence and emerging adulthood? As the children mature, do they get better, worse, or stay the same? Following these trajectories can provide us with a better understanding of possible changes and their temporal patterns in relationships throughout the course of life, as emphasized by the life course principles of timing, turning points, transitions, and developments in understanding individual and family lives (Elder, 1998).

Intergenerational ties, often conceptualized as intergenerational solidarity (Bengtson & Roberts, 1991), is a broader term that encompasses various dimensions of parent-child relationships. This study specifically focuses on emotional closeness (affectional solidarity).

Emotional closeness between generations fosters a sense of belonging, acceptance, comfort, reassurance, and understanding, which in turn strengthens intergenerational bonds (Gilligan et al., 2015). It is a core dimension that reinforces other dimensions such as contact (associational solidarity) and instrumental help (functional solidarity; Hogerbrugge & Komter, 2012); emotional closeness serves as a foundation for frequency and quality of contact by fostering connection, attachment, and shared experiences between generations as well as a foundation for the willingness of providing and receiving instrumental support, caregiving, and practical assistance between generations (Bengtson & Kuypers, 2018). When parents and children feel emotionally close to each other, they are more likely to engage in mutually beneficial contact and instrumental help (Silverstein & Giarrusso, 2010). Therefore, the primary objective of this study is to compare the longitudinal trajectories of emotional closeness between sexual minority and heterosexual adult child and their parents, including both mothers and fathers, in order to identify potential disparities and any change or continuities over time *during* and *after* emerging adulthood.

Literature Review

Variations in Parent-Child Closeness

While the majority of individuals maintain active lifelong parent-child ties (c.f., Hartnett et al., 2018), considerable variations and diversity may exist based on demographic characteristics and family situations, including parents' and children's gender, race/ethnicity, education, family structure, number of siblings, and partnership status. In terms of parents' gender, female parents generally maintain closer ties throughout their children's lives than male parents do. This difference is attributed to the larger emphasis on women playing

parenting and kinship work roles, actively nurturing emotional bonds between family members and across generations (Di Leonardo, 1987). Mothers typically exhibit higher involvement in their children's lives, spending more time with them and fulfilling their needs. Similarly, in terms of children's gender, female children tend to report closer ties to their parents than male children, as they are traditionally expected to play a more familial role in fostering emotional bonds and caregiving. Empirical evidence suggests that daughters are more likely to express feelings of closeness to their parents, especially their mothers, compared to sons (Silverstein and Bengtson, 1997). In some instances, a son may report closer ties to the same-gender parent (father) than the different-gender parent (mother) as they may share gendered interests and activities together (Starrels, 1994).

Parents and children of color are known to have tighter intergenerational ties compared to their White counterparts. This is partly attributed to the fact that Black, Hispanic, and Asian families often uphold family-centered cultural values that serve as a racial/ethnic shelter buffering against racism and discrimination from the outside world (Sarkisian et al., 2007; Hardie & Seltzer, 2016; Cichy et al, 2014). However, fewer resources, often linked to lower educational attainment, can strain these intergenerational ties (Conger et al., 2010). This strain may manifest through the family stress mechanism of economic pressure, resulting in conflicts and emotional withdrawal, or diminished attention and investment in relationships (Conger et al., 2010).

Moreover, parental divorce exerts a detrimental effect on parent-child relationships both at the time of the divorce and in its aftermath (Ward et al., 2014). This detrimental effect tends to be more pronounced for fathers than mothers, largely because most mothers gain custody and continue to reside with their children while fathers typically move out.

Consequently, nonresidential/noncustodial fathers often experience a reduced frequency of contact and lower levels of emotional closeness with their children (Deane et al., 2016). The introduction of step or quasi-step parents through parental re-partnering also affects the parent-child relationships. In such cases, re-partnered mothers and fathers often report diminished ties with their children (Lawton et al., 1994; Noël-Miller, 2013).

A higher number of siblings may be linked to a lower quality of intergenerational relationships for each child (Ward et al., 2009). Also, when children establish their own partnerships and have their own children, this can result in shifts in their parent-child relationships. As married individuals form a new family separate from their family of origin, they are expected to allocate their emotional and material resources to their own family, potentially diminishing the strength of existing ties ("marriage as a greedy institution"; see Sarkisian & Gerstel, 2008). This phenomenon can also apply to individuals in cohabiting relationships, as cohabitation typically signals commitment and investment (Sassler & Lichter, 2020). Some studies suggest that relationship quality may actually improve when adult children become parents themselves, as they often develop a greater understanding and sympathy for their own parents' experiences, seeing themselves 'in the same shoes' (Merrill, 2011).

Parent-Child Relationships and Sexual Minority Children

Just like any other children, parent-child relationships are central to sexual minority children (Reczek, 2014). However, it is known that family lives of young sexual minority children may involve unique challenges related to the rejection or acceptance of their minoritized identities, especially when they come out to their parents during adolescence and

emerging adulthood (DeChants, 2022). Coming out to parents is a key milestone in the lives of young sexual minority individuals (Bishop et al., 2020). A recent paper using data from *the Generations Study*, the national probabilistic sample of sexual minority population cohorts, found that the mean ages at which recent cohorts of participants first came out to their parents and family members was approximately 17 years old for the cohort aged 18-26 and 22 years old for the cohort aged 32-43 (Bishop et al., 2020).

Coming out to parents can have a dramatic impact on how children perceive their parental relationships. Once accepted, they may feel their relationships grow stronger by openly sharing a key aspect of their identity with their parents. However, negative reactions from parents, through varying in intensity, are still prevalent in the experiences of sexual minority children even today, which can introduce conflicts and strain into their parent-child relationships (Pistella et al., 2018). Parent-child relationships can face challenges even before children come out or if they do not come out. Monitoring identity concealment and disclosure places additional vigilance and stress on the daily lives and interactions of sexual minority children; they may constantly worry and feel anxious about the eventual disclosure of their sexual identity sooner or later and how their parent may respond (Pachankis et al., 2020). This underlying anxiety and possibility of negative responses can lead children to perceive their ties as precarious and conditional, compromising attachment to their parental ties (Robinson, 2018).

In addition to qualitative studies on the challenges experienced by sexual minority children within their family, some studies have directly compared the intergenerational ties of heterosexual and non-heterosexual groups. Using a nationally representative German sample, Hank & Salzburger (2015) found that gay and lesbian adult children reported modestly lower

levels of emotional closeness to both parents and less frequent contacts with both parents compared to their heterosexual counterparts. Fisher & Kalmijn (2020), using a nationally representative Dutch sample, found that adult children in same-sex relationships were more likely to leave their parental home earlier, move farther away, and cite parental conflicts as a more common reason for leaving than adult children in different-sex relationships during the transition to adulthood. Leal et al. (2020) also discovered that sexual minority survey participants in Portugal reported lower levels of affection and higher levels of conflicts with their parents when compared to heterosexual survey participants. Focusing on parent-adult children estrangement, an extreme form of disrupted intergenerational ties, Reczek et al. (2023) found that American gay, lesbian, and bisexual adult children were more likely than heterosexual adult children to be estranged from their fathers.

Changes and Continuity

Although parent-child relationships are not necessarily static and the dynamics between parent and child may evolve and change across different life stages, surprisingly little research has explicitly examined the changing trajectories of parent-child ties and emotional closeness among the general population from a longitudinal approach, not to mention those of sexual minority adult children. Some previous studies have shown both the importance and pattern of parent-child ties over different life stages, using various measures. For instance, Birditt and colleagues (2008) found that filial maturity (i.e., ability of adult children to perceive and accept parents as individuals with flaws) increased with age. Other work has shown that, when controlling for variables such as parental demographics, contact between parents and adult children tends to remain consistent and stable over time (Ward et al., 2014). Thus, though there

is surprisingly scant research on this broad topic, evidence suggests that when looking at the general population, at least in the US, parent-child ties remain stable and may even improve over time as the child progresses through the stages of later adulthood.

Though even less work has focused on sexual minority individuals, some qualitative or mixed-methods studies on parent-child ties of sexual minority adult children give us insights into resilience and flexibility over the life course. A recent study theorized how LGBTQ adult children manage sexual/gender identity-related conflict with their parents, using the concept of "conflict work" (Reczek & Bosley-Smith, 2021). Conflict work includes a variety of strategies to sustain the functioning of the parent-child ties and mend or prevent drastic outcomes, such as estrangement from rejecting parents. For example, the study respondents perform education work, conflict avoidance work, conflict acceptance work, and conflict boundary work on their parents. Stone (2020) and Jhiang (2018) also described efforts that LGBTQ adult children made for better parental relationships, which were conceptualized as "comfort work" (Stone, 2020) and "scaffolding behaviors" (Jhang, 2018). Gay/lesbian adult children invited their parents to gay/lesbian spaces in an attempt to cultivate more comfort and emotional understanding, engaging in the iterative process of reconciling discrepant expectations on each side. The study of Samarova et al. (2014) also hints at possible improvements in the perceived parental acceptance a few years after their initial disclosure, although the study subjects were adolescent children and not full adult children.

Meanwhile, mid-to later life LGBTQ adult children and their aging parents might still struggle with a mixture of relationship strains, support, and ambivalence (Reczek, 2016). The adult children could still experience tensions and conflicts, especially concerning the position and role of their same-sex partner (Ocobock, 2013; Reczek & Umberson, 2016) or biological

or non-biological children of the couple (Nordqvist, 2015) in daily family lives, rituals, boundaries and responsibilities in relation to their parents. Sometimes, they choose to distance themselves from their parents due to persisting struggles and turn to friends for unmet needs of emotional and practical support (Weston, 1991; Dewaele et al., 2011). For example, Weston (1991) observed "families of choice" or "chosen families", which consist of close friends, partners, and other supportive individuals of sexual minority individuals who provide emotional and material support, affirmation, and a sense of belonging as an alternative to traditional kinship families. Yet, it is uncommon that adult children and parents completely withdraw and dissolve close relationships with each other, and the majority of adult children and parents typically make efforts to adapt to and improve relationships, even in the face of some tensions and conflicts as they mature (Luescher & Pillemer, 1998). For sexual minority adult children, progressing into full adulthood and midlife can be a period of more amendment for better parent-child relationships after the turbulence of adolescence and emerging adulthood, which facilitates renewed appreciation and closeness between them (Reczek & Bosley-Smith, 2022). Therefore, based on the previous research discussed, I make the following hypotheses:

Hypothesis 1: Sexual minority adult children are likely to have lower emotional closeness to their mothers and fathers compared to heterosexual adult children in young adulthood.

Hypothesis 2: Sexual minority adult children are likely to experience more positive changes in emotional closeness to their mothers and fathers compared to heterosexual adult children in the later stages of their lives.

Data and Method

Data

The current study used data from Waves III, IV, and V of the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a nationally representative probability sample survey that commenced with 20,745 adolescents in grades 7-12 in the United States. These adolescents were born between 1974 and 1983. The sample was drawn from U.S. high schools that were stratified by region, urbanicity, size, type, racial composition, and grade span, using a random sampling technique. Following the initial wave of interviews in 1994-1995 when the participants had a mean age of 15, the same individuals were repeatedly interviewed in 1996 (Wave II) when their mean age was 16, in 2001-2002 (Wave III) with a mean age of 22, in 2008-2009 (Wave IV) with a mean age of 28, and in 2016-2018 (Wave V) with a mean age of 37. Additional details on Add Health's sampling procedures and study design can be obtained on their website (see https://addhealth.cpc.unc.edu/documentation/study-design). The subsample used in this study corresponds to the three age bands of 18-24 (representing emerging adulthood), 24-32 (late young adulthood) and 32-42 (early midlife), respectively.

Add Health data serves as the sole source of nationally representative longitudinal data that includes variables measuring sexual minority status and child-parent relationships, along with other valuable information on family circumstances used in this study. Add Health Wave III featured 15,197 respondents who completed the survey interview. For the analytic sample, first, I excluded 64 respondents who lacked information on both outcome variables of maternal and paternal emotional closeness across all three waves. Then, I excluded 558 respondents who had missing information regarding sexual minority status (n = 87) or who reported to be

attracted to neither female nor male (n = 471), as asexual individuals are known to have distinctive characteristics compared to heterosexual and sexual minority individuals (Rothblum et al., 2020) but their group size was too small to create a separate analytic category. After applying the exclusion process, the final analytic sample consisted of 14,575 individuals.

Measures

Outcome Variable

Emotional Closeness. The Add Health respondents were asked the questions "How close do you feel to your mother (mother figure)" and "How close do you feel to your father (father figure)" in all waves. Respondents provided responses on a scale ranging from 1 = *not at all close*, 2 = *not very close*, 3 = *somewhat close*, 4= *quite close*, to 5 = *very close* (with reverse coding applied for Wave III).

Key Explanatory Variables

Sexual minority status. The Add Health respondents were asked whether they had a romantic attraction to males or females, respectively, so that his or her same- and different-sex attraction could be inferred based on his/her own sex and their answers. If a respondent reported having been attracted to a person of the same sex, he or she was considered a sexual minority, regardless of whether he or she also reported attractions to individuals of the opposite sex. Among different measures of sexual orientation and sexual minority status, such as same-sex attraction and self-identification, same-sex attraction has been deemed as the most appropriate for adolescents and young adults who may or may not have developed specific self-identifications (Pearson et al., 2007; Pearson & Wilkinson, 2013; Wilkinson & Pearson,

2009). Thus, the current study primarily used same-sex attraction as a measure of sexual minority status. Yet, I also conducted sensitivity/supplement analyses using the self-identification measure, which will be discussed below. Starting from Wave III, the sexual minority status variable was coded as 1 when a respondent was male and attracted to male. Likewise, the sexual minority status variable was coded as 1 when a respondent was female and attracted to female. The sexual minority status variable was coded as 0 when a respondent was male and only attracted to female, and when a respondent was female and only attracted to male.

Control Variables

Child's sex was a binary variable coded as male (reference) or female; the Add Health questionnaires did not provide options other than male or female. Race/ethnicity was coded using three dummy variables of non-Hispanic white (reference), non-Hispanic Black, Hispanic of any race, or non-Hispanic other race (e.g., Native American and Asian/Pacific Islander). Age was coded as a continuous variable. The educational level of the child was measured in years of education and was included as a time-invariant variable, as there was not significant variation across the three waves. Parental education, for both the mother and father, was measured on a 10-point ordinal scale (from 0 = *never went to school* to 9 = *professional training beyond a four-year college or university*). Family structure was a binary variable coded as families with two biological parents (reference) and families with a single parent, step-parent, or other family structure. The number of siblings was coded as a continuous variable, indicating how many brothers and sisters a respondent had. All time-invariant variables above were measured from Wave III. For time-varying covariates across the three

waves, child's partnership status was a binary variable coded as single (reference) or partnered (e.g., married or cohabitating) for the specific survey wave. The number of children was a continuous variable, indicating how many children a respondent had for the given survey wave.

Analytic Plan

The analyses proceeded in several steps. First, I conducted descriptive statistics for the outcome variables, demographic and family characteristics variables for the total sample and compared them by sexual minority status. I also conducted a series of t-tests to examine significant differences in variables between the two groups. Second, I used two pairs of unconditional latent growth curve analyses based on a structural modeling (SEM) approach (see Bullen & Curran, 2006) to estimate and describe trajectories of emotional closeness in two separate models for mothers and fathers. Because of having a three time-point dataset, I estimated linear trajectories. For the outcome variable of emotional closeness, I treated this as a continuous variable, following the approach of Fang et al.(2021) that used a similar outcome variable in the SEM framework; ordinal scaling reflects an underlying continuum of the construct being measured, and latent growth modeling on a categorical variable is rarely used (See Lee at al., 2018). Third, I used two pairs of conditional latent growth curve models, including the key variable of this study (i.e., sexual minority status) and covariates, in two separate models for mothers and fathers again.

Latent growth curve modeling, designed to measure both intra-individual and inter-individual variability of baseline and change, estimates individual growth curves from repeated-measures data with more than two time points. It is the optimal approach for describing and comparing the initial levels of emotional closeness to mothers and fathers (i.e.,

latent intercept) and their changes and/or continuity (i.e., latent slope) for sexual minority and heterosexual adult children in a longitudinal context while controlling for other predictors (see Figure 1.1).

[Figure 1.1 here]

In terms of missing values, the preliminary analyses indicated that the missingness in the variables used was random and ignorable. The proportion of missing values was at most 2.12%. I addressed missing values in the variables by employing the full information maximum-likelihood (FIML) model estimation method that is especially useful for structural equation modeling (Acock, 2005). The FIML method uses all available information to obtain maximum likelihood parameter estimation while accounting for missing data. These analyses were performed using STATA 16.1, with the *method(mlmv)* command for FILM model estimation. In terms of survey attrition, the Add Health survey data adopted pooling and re-interview survey design strategies, which effectively minimized non-response bias (Harris et al., 2019). Regular analyses were conducted to assess whether attrition patterns introduced any bias to estimates of survey outcomes (Harris et al., 2019). The analyses of attrition-related bias consistently indicated that bias rates rarely exceeded 1%, and after applying final sampling weights to adjust study estimates, any remaining total and relative biases were found to be negligible (Brownstein et al., 2018; Chantala et al., 2005). In terms of model fit, the goodness of fit of the models was assessed using the root mean square error of approximation (RMSEA), the Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) as commonly used for SEM (Hooper et al, 2008). In general, cutoff values of < 0.06 for RMSEA, > 0.95 for CFI, and $>$

0.95 for TLI have been recommended in the literature (Hu & Bentler, 1998; 1999; Steiger & Lind, 1980; Steiger, 1990).

Results

Descriptive Statistics

[Table 1.1 here]

Table 1.1 provides descriptive statistics stratified by sexual minority status. Out of 14,575 respondents, 1,397 individuals (9.58%) were sexual minority individuals. Heterosexual adult children reported higher levels of emotional closeness to their mothers compared to sexual minority adult children at each wave. Yet, a series of t-tests revealed that the gap was significantly different only at Wave III; the scores of emotional closeness to their mother perceived by heterosexual adult children were 4.45, 4.49, and 4.07 during early adulthood, late young adulthood, and early midlife, respectively. In contrast, sexual minority adult children reported scores of 4.24, 4.42, and 3.92, for the same waves. Similarly, heterosexual adult children reported higher levels of emotional closeness to their fathers compared to sexual minority adult children at each wave, with statistically significant differences observed in all three waves. Scores for heterosexual adult children were 4.16, 4.23, and 3.83 at the three time points, whereas scores for sexual minority adult children were 3.89, 3.93, and 3.51.

The sexual minority and heterosexual groups exhibited significant differences in some demographic and family characteristics. The sexual minority group had a higher proportion of female individuals (68.93 vs. 47.59%). This aligns with findings from several nationally

representative surveys, which consistently show a greater percentage of women identifying as sexual minority or expressing non-exclusively heterosexual orientations when compared to their male counterparts (Evans & Silva, 2020; Gates, 2014; England & Caudillo, 2016). Moreover, even though there were no significant difference in child's, mother's, and father's education, age, race/ethnicity, family structure, number of siblings, or partnership status based on sexual minority status, the sexual minority group tended to have fewer children in their early midlife (M = 1.27 vs. 1.57).

Unconditional Models

[Table 1.2 here]

Two unconditional latent growth curves models were estimated before introducing the sexual minority status variable and all other covariates. Unconditional growth curves modelling examines the overall baseline progress over time without considering predictor variables, serving as a benchmark for more complex models (Singer & Willet, 2003). The results from the two unconditional models for mothers and fathers showed that the average latent intercepts and slopes for both parents were significantly different from zero (all *p*s < .001, SRMR < 0.01). This indicates that emotional closeness to both parents had non-zero starting points and underwent systematic changes, not merely due to random fluctuations in the data. Specifically, the results within the unconditional model for mothers showed that the average initial level of maternal closeness for all young adult children, regardless of sexual minority status, was high at 4.51 (SE = .02, $p < .001$). On average, maternal closeness

significantly declined by -.19 (SE = .01, $p < .001$) per wave. The results within the unconditional model for fathers indicated that the average initial level of paternal closeness for all young adult children, regardless of sexual minority status, was 4.26 (SE = .03, $p < .001$), slightly lower than the initial level of maternal closeness. On average, paternal closeness significantly declined by -.23 (SE = .02, $p < .001$) per wave. Therefore, in the absence of any other influences, the two unconditional baseline trajectories of maternal and paternal emotional closeness began at relatively high values and followed a declining trend over time. Nevertheless, compared to maternal closeness, paternal closeness started lower and exhibited a steeper decline over time. Although the model fit indices indicate the unconditional model displayed less than ideal fit, we would not necessarily expect the unconditional model to display great fit due to lacking all theoretically relevant predictors.

Conditional Models

The subsequent step involved estimating two conditional latent growth curves models to examine the relationship between sexual minority status and the trajectories of maternal and paternal closeness, while controlling for demographic and family characteristics (Table 1.2). The upper section of the table displays coefficients predicting the latent intercept (i.e., initial level), while the lower section presents coefficients predicting the latent slope (i.e., the rate of change) of the trajectories in the conditional growth models, taking into account all predictors, including sexual minority status. Of particular relevance to the research question are the coefficients associated with sexual minority status.

[Table 1.3 here]

First, in terms of emotional closeness to mothers, sexual minority status was found to be significantly associated with a lower initial level of closeness to mothers compared to their heterosexual counterparts ($b = -.21$, $p < .001$). However, sexual minority status was not significantly related to the rate of change in closeness to mothers across the three time points ($b = .04$, $p > .10$), indicating that sexual minority status did not influence either a decline or increase in emotional closeness to mothers over time. Given that the unconditional baseline trajectory of maternal closeness already indicated a high starting point but an overall downward trend over time, these results suggest that sexual minority status was negatively related to the starting point of maternal closeness but did not significantly contribute to the subsequent decline in maternal closeness later.

Second, regarding emotional closeness with fathers, it was observed that individuals with a sexual minority status exhibited a significantly lower initial level of closeness to their fathers compared to heterosexual individuals ($b = -.32$, $p < .001$). Nevertheless, their sexual minority status did not have a significant impact on the rate of change in emotional closeness to fathers across the three time points ($b = .02$, $p > .10$). This suggests that their sexual minority status did not influence either a decline or increase in the change of emotional closeness to fathers over time. Since the unconditional baseline trajectory of paternal closeness already indicated a moderate starting point but an overall downward trend over time, the findings suggest that sexual minority status was negatively associated with the initial level of paternal closeness but did not significantly impact the subsequent decline in paternal closeness over time. In summary, the trajectories of maternal and paternal emotional closeness associated with sexual minority status were similar to each other, with a slightly greater effect of sexual

minority status on the initial level of emotional closeness to fathers. Model fit indices indicated this conditional model displayed good fit.

[Figure 1.2 here]

To aid in understanding the results, Figure 1.2 illustrates the predicted values of emotional closeness to mothers and fathers by sexual minority status for each wave. The x-axis represents each wave, and the y-axis represents the level of emotional closeness to mothers and fathers. The solid line represents the overall trajectory of sexual minority adult children, while the dashed line represents that of heterosexual adult children. Error bars indicate 95% confidence intervals. From this figure, sexual minority individuals reported lower levels of closeness to both their mothers and fathers on average from the beginning. However, there were no differences in the pattern of change in closeness over the three waves. Thus, both sexual minority and heterosexual adult children showed a gradual decline in maternal and paternal closeness over time, regardless of their sexual minority status, although they started with different initial values.

Regarding the control variables in the mother model, for the intercept equation, Black adult children tended to have a significantly higher initial level of closeness to mothers ($b = .13$, $p < .001$), while other-race adult children tended to have a significantly lower level ($b = -.22$, $p < .001$). Child's gender, age, education, mother's and father's education did not have a significant effect on the initial level of maternal closeness. Having lived in a single-parent, step-parent, or other family structure was associated with a lower initial level of closeness to mothers ($b = -.06$, $p < .001$). The number of siblings was not significantly associated with the

initial level of emotional closeness to mothers. For the slope equation, child's age was the only predictor that had a significantly negative impact on the rate of change in maternal closeness among the time-invariant controls, which included gender, race/ethnicity, child's age, education, and mother's and father's education, family structure and the number of siblings. Older adult children experienced a faster rate of decline in maternal closeness over time than younger adult children, even within the same age cohort. When it comes to time-varying control variables, partnership status during late young adulthood and midlife as well as the number of children had adverse effects on emotional closeness to mothers; partnered adult children at those time points experienced a greater decrease in maternal closeness than single adult children, and adult children with more children of their own at those time points experienced a greater decrease in maternal closeness compared to adult children with fewer children of their own.

Regarding the control variables in the father model, for the intercept equation, female ($b = -.10$, $p < .01$) and other-race ($b = -.33$, $p < .001$) adult children tended to have lower initial levels of closeness to fathers. Child's education ($b = .02$, $p < .05$) positively affected the initial level of closeness to fathers, whereas child's age and mother's and father's education did not have a significant effect on the initial level of paternal closeness. Having lived in a single-parent, step-parent, or other family structure ($b = -.13$, $p < .001$), as well as having more siblings ($b = -.03$, $p < .001$), were associated with a lower level of closeness to fathers. For the slope equation, being non-Hispanic Black ($b = .07$, $p < .01$) or Hispanic ($b = .06$, $p < .05$) was positively associated with the rate of change in paternal closeness. In other words, Black and Hispanic adult children were likely to experience a slower decline in paternal closeness over time, even after accounting for the baseline downward trend. Yet, having lived in a single-

parent, step-parent, or other family structure had a significantly negative impact on the rate of change in paternal closeness; adult children with these family structures experienced a faster rate of decline in paternal closeness over time than adult children with two biological parents. Gender, age, child's, mother's, and father's education, and the number of siblings did not have a significant impact on the rate of change in paternal closeness. As for time-varying control variables, partnership status during late young adulthood and midlife adversely affected emotional closeness to fathers; partnered adult children at those time points experienced a greater decrease in paternal closeness than single adult children, whereas the number of children at any time points did not have significant impact on paternal closeness.

Supplementary Analyses

For the robustness test, I conducted an array of sensitivity and supplementary analyses. The first part of these sensitivity/supplementary analyses involved examining a different measure of sexual minority status to assess the extent to which the results are sensitive to changes in operationalization. In addition to the same-sex attraction measure used in the main analyses, I also considered the self-identification measure, which asked respondents to select the description that best represented their self-identity on a scale ranging between 1 = *100% heterosexual (straight),* 2 = *mostly heterosexual, but somewhat attracted to people of your own sex,* 3=*bisexual, that is, attracted to men and women equall*y, 4 = *mostly homosexual (gay), but somewhat attracted to people of the opposite sex*, 5 = *100% homosexual (gay)*. Respondents were categorized into two groups: 100% heterosexual and sexual minority individuals. The analyses demonstrated that the findings using the self-identity measure were similar to those obtained with the attraction measure (Appendix Table 1.1).

[Appendix Table 1.1 here]

First, in terms of emotional closeness to mothers, sexual minority status was found to be significantly related to a lower initial level of closeness to mothers compared to their heterosexual counterparts ($b = -.21$, $p < .001$). However, sexual minority status was not significantly related to the rate of change in closeness to mothers across the three time points, implying that sexual minority status did not influence either the decline or increase in emotional closeness to mothers and did not significantly contribute to the baseline downward trend over time. Similarly, in terms of emotional closeness to fathers, sexual minority status was also found to be significantly related to a lower level of initial closeness to fathers compared to their heterosexual counterparts ($b = -.32$, $p < .001$). However, sexual minority status was not significantly related to the rate of change in closeness to fathers across the three time points, indicating that the status had no effect on either the decline or increase in emotional closeness to fathers and did not significantly contribute to the baseline downward trend over time. Therefore, according to the first sensitivity/supplementary analysis of alternating the operationalization of sexual minority status, although the significant coefficients of sexual minority status on the initial levels of closeness became slightly larger, the overall pattern of the negative association between sexual minority status and the initial levels of closeness to both mothers and fathers, as well as the non-association between sexual minority status and the rate of change in closeness to both mothers and fathers, remained robust to the different measure of sexual minority status.

The second part of the sensitivity/supplementary analysis concerned the sample eligibility criteria. In the main analyses above, 558 individuals were excluded from the primary analyses because they had missing information regarding sexual minority status (n = 87) or were attracted to neither females nor males (n = 471). Although this was a highly heterogeneous and small group of respondents, in order to determine whether this eligibility criteria would introduce some bias into the analyses, I created a "missing/other" category as a separate group in addition to the sexual minority and heterosexual groups used in the main analyses. I then re-conducted descriptive analyses (Appendix Table 1.2) and latent growth curves analyses (Appendix Table 1.3) using a total sample of 15,133.

[Appendix Table 1.2 here]

The descriptive statistics that included the "missing/other" group showed no statistically significant differences in maternal and paternal closeness throughout the waves compared to the full analytic sample. However, there were some potentially interesting demographic and family characteristics of the "missing/other" group; the "missing/other" group were more likely to be Black and Hispanic, had lower educational levels of themselves, their mothers, and their fathers, and were more likely to have a biological two-parent family structure. Further, the "missing/other" group was less likely to be in a partnership throughout the waves compared to the full analytic sample and had fewer children in their 30s and 40s. Table S3 illustrates how the inclusion of this group might impact the results of the main analysis.

[Appendix Table 1.3 here]

Table S3 shows that, overall, the core results of the growth curves model analyses remained similar when comparing the main analyses using the analytic sample that excluded and included the "missing/other" group. To be specific, regarding emotional closeness with mothers, sexual minority status was significantly associated with lower levels of closeness ($b = -.20$, $p < .001$). However, their sexual minority status did not significantly influence the rate of change in emotional closeness with mothers over time. Similarly, in terms of emotional closeness with fathers, sexual minority status was significantly associated with lower levels of initial closeness ($b = -.22$, $p < .001$). However, the sexual minority status did not have a significant impact on the rate of change in emotional closeness with fathers over the three time points. For the "missing/other" group, the initial levels of maternal or paternal closeness and their rates of changes were all non-significant; their trajectories of maternal and paternal closeness over time did not exhibit distinguished patterns, even though the group may have a few distinct characteristics as shown in the descriptive statistics. In conclusion, the overall pattern of a negative association between sexual minority status and initial closeness to both mothers and fathers, as well as the absence of a significant association between sexual minority status and the rate of change in closeness to both mothers and fathers, remained consistent and robust regardless of the inclusion of the "missing/other" group.

Discussion and Conclusion

The study explored the longitudinal dynamics of intergenerational relations between adult children and their older parents over time, with a focus on the potential gap in emotional closeness to mothers and fathers based on sexual minority status. The study employed two

latent growth curve models to capture the possibly evolving nature of intergenerational relationships across different life stages. The study yielded two key findings. First, it found that sexual minority status was significantly associated with lower emotional closeness to both mothers and fathers from early adulthood. Existing studies that have compared the intergenerational relations of sexual minority and heterosexual adult children have consistently reported weaker ties between sexual minority adult children and their parents (Hank & Salzburger, 2015; Fisher & Kalmijn, 2020; Leal et al., 2020; Reczek, et al., 2020). For instance, Campbell and Perales (2022) found a similar pattern among an Australian sample, with parental closeness being overall lower among sexual minority adult in comparison to their heterosexual counterparts, though following a largely similar trajectory. Thus, in alignment with these prior studies, the current work provides additional evidence that sexual minority young adult children are more likely to have weaker intergenerational ties compared to their heterosexual counterparts, thereby lending support to Hypothesis 1.

Furthermore, the study aligns with an existing body of research in family demographics and intergenerational studies that highlight several significant predictors of emotional closeness (Hardie & Seltzer, 2016; Deane, Spitze, Ward, & Zhuo, 2016; Lawton, Silverstein, & Bengtson, 1994; Noël-Miller, 2013). Along with sexual minority status, the findings reveal that female adult children were more likely to report lower paternal closeness compared to their male counterparts, while Black adult children were more likely to report higher maternal closeness and other-race adult children (e.g., Native American and Asian/Pacific Islander) were more likely to report lower maternal/paternal closeness compared to their white counterparts. Adult children who had lived in a single-parent, step-parent, or other family

structure were more likely to report lower maternal and paternal closeness than those who lived in a biological two-parent family structure.

Second, the current study found that sexual minority status did not significantly affect the trajectory of both maternal and paternal closeness from early to midlife. Both sexual minority and heterosexual adult children equally experienced a downward trajectory in maternal and paternal closeness as they aged, without further improvements or deteriorations particularly associated with sexual minority status. This finding contrasts with Hypothesis 2, which predicted more positive changes in emotional closeness to mothers and fathers in the later stages of lives. Instead, the primary predictor that significantly affected the trajectory of maternal and paternal closeness from early adulthood to midlife was partnership status. Partnered adult children experienced a greater decrease in maternal and paternal closeness than single adult children. This can be explained by the nature of marriage and stable partnerships, which lead individuals to prioritize their spouses/partners over their older parents (Sarkisian & Gerstel, 2008).

Taken together, the findings indicate that sexual minority adult children had poorer intergenerational ties compared to their heterosexual counterparts during their early adulthood, and the disparity did not significantly narrow over time; once established in a relatively lower quality, it persisted throughout adulthood. These findings align with the life course perspective, emphasizing the enduring impact of cumulative intergenerational influence on individuals from early life into their later years (Elder, 1995). Furthermore, as parents play a pivotal role in providing support and resources to their children, the continued disparity in intergenerational ties of sexual minority adult children suggests that they remain vulnerable over the courses of life. This, in turn, could translate into disparities in their health and well-being. Research

consistently shows that close relationships with parents are associated with positive outcomes for children, including better mental and physical health, as well as overall well-being (Umberson and Thomeer, 2020). For instance, emotional closeness to parents can foster a sense of security, validation, and self-esteem, all of which are crucial factors for health and well-being, helping individuals cope with stress and adversity in daily life (Fingerman et al., 2012). Emotional closeness to parents also remains an important predictor of life satisfaction, regardless of the life stages (Johnson and Barer, 2000).

Given the importance of intergenerational ties for health and well-being, the finding that the poorer intergenerational relationships experienced by sexual minority adult children experienced in early life extend well into later life stages underscores the significance of early intervention. To support sexual minority children and their parents in addressing these vulnerabilities and fostering resilience in their relationships, a diverse range of programs and practices for individuals and families could be helpful. For example, programs that offer counseling services, educational resources, and support groups for families can facilitate better understanding and acceptance among family members.

The findings, which reveal that sexual minority adult children exhibited even poorer emotional closeness to fathers, highlight the need for interventions specifically targeting fathers. This is especially important given that previous studies have shown that fathers tend to be less accepting and more homophobic to sexual minority children compared to mothers (Bosley-Smith & Reczek, 2022). Taking steps to reduce emotional distance and facilitate resilient bonding between fathers and their sexual minority adult children can be mutually beneficial and contribute to the overall well-being of both parties (Horn & Wong, 2017). Moreover, it is worth noting that psychological and sociological studies have indicated that the

relationship quality with mothers and fathers can impact the relationship quality with partners (Umberson et al., 2005) and their own children (Hou et al., 2023). This inter-family and intergenerational transmission of relationship quality may have adverse effects on the partners and children of sexual minority individuals, which underscores the importance of preventive interventions that consider multiple family members and future generations.

Nonetheless, there are several limitations of the current study that should be considered when interpreting the findings. First, the study focused on emotional closeness to mothers and fathers as a single measure among various dimensions of intergenerational relationships. Theoretically, emotional closeness is a core dimension that can serve as a basis for other dimensions of intergenerational dimension (Bengtson & Kuypers, 2018). Practically, emotional closeness was the only consistently measured variable across all survey waves. Other dimensions, such as contact frequency and financial exchange, were not consistently available for conducting trajectory analyses. For example, parent-child contact frequency and instrumental help was worded differently in the survey questionnaires. In future research, where data availability permits, more comprehensive measures of intergenerational relationships can be employed. Second, the parent-child emotional closeness measure solely relies on the adult children's self-reports, not incorporate both adult children's and parents' perspectives. Since both parties in a relationship may perceive it differently, using dyadic models would allow for comparisons between parents' and children's viewpoints.

Parent-children ties are dynamic and change throughout the life course, necessitating a longitudinal approach. By shedding light on the disparities in parent-child ties between sexual minority and heterosexual adult children, as well as their persistence, the current study contributes to the growing yet still insufficient body of literature on the family lives of the

sexual minority population. It also provides valuable insights for informed policy and intervention strategies to enhance the well-being of this population.

Chapter 3

Children's Sexual Orientation and Parental Financial Help in Emerging Adulthood

Introduction

Parents provide financial support to their children throughout their life span, even after they reach adulthood (Seltzer & Bianchi, 2013). Over the past few decades, there has been a significant increase in the amount and duration of parental financial support to adult children (Nomaguchi & Milkie, 2020). The rise in educational years and costs, as well as delayed full-time employment and stable partnership have resulted in heightened dependence of adult children on parental resources (Furstenberg et al., 2004). Parental financial transfers and assistance significantly impact the life prospects and well-being of their offspring, such as their educational status, earnings, and occupational achievements (Spilerman, 2000).

While a substantial body of empirical literature has examined the mechanisms and predictors of parental financial assistance to children (Seltzer & Bianchi, 2013), there has been limited research considering the role of a child's sexual orientation. In one of the rare studies on this topic, Perales & Huang (2020) used two measures of total amount and frequency of money transferred from parents to adult children in an Australian sample. Although the study found the "LGB premium" questions remain regarding whether this result holds true in the US context and, more importantly, *what adult children use this financial help for,* using detailed measures of parental financial help. The second point regarding the purpose of the parental financial aid is particularly significant, as different types of monetary support can offer varying levels of long-term utility (e.g., buying an adult child a lavish wedding vs. giving an adult child down payment money for the first home-ownership) to the recipient; furthermore,

understanding the intended use of the money by parents can provide valuable insights into their motivations for providing financial assistance. To address this gap in knowledge, the current study analyzed data from the Add Health Parent Study (AHPS, 2015-2017). This survey serves as an auxiliary component of the high-quality, nationally-representative, large-scale National Longitudinal Study of Adolescent to Adult Health (Add Health). Instead of aggregating all parental financial assistance into a single outcome measure, the current work seeks to distinguish between three types of parental financial assistance to adult children: educational expense, housing expense, and other large expenditures.

The current work has two primary research goals. First, this study seeks to shed light on the relationship between adult children's sexual minority status and parental financial assistance in the U.S. This adds to the expanding body of literature on intergenerational dynamics within sexual minority families, which has traditionally focused on the emotional realm, particularly family acceptance and rejection. While the emotional dimension is undoubtedly crucial and warrants significant research attention, the functional dimension, including parental financial assistance, holds equal importance due to its concrete impact on the life opportunities and outcomes of children. Thus, building on related familial research, the current study formulated and tested two predictions regarding whether a child sexual minority status leads to increased support or potential drawbacks in terms of parental financial help (as detailed below). Second, instead of exclusively examining the total sum of parental financial assistance to adult children, this study takes into account various types of financial assistance that may have distinct implications for the life outcomes of adult children. Although any kind of parental financial assistance positively contributes to the overall well-being of adult children, different types of assistance may be associated with different life outcomes. For example, parental financial

assistance for education enables them to pursue higher education, acquire specialized skills, and enhance their job prospects, ultimately leading to improved career opportunities and higher living standards in the long term (Semyonov and Lewin-Epstein, 2001). Parents' financial contributions toward housing expenses can foster residential stability and financial foundation for accumulating assets (Lee et al., 2020). Therefore, purpose-specific analyses of parental financial assistance may offer more nuanced insights into how such support may vary between heterosexual and sexual minority adult children, as well as how it may confer advantages or disadvantages to sexual minority adult children.

Literature Review

Parental Financial Help Assistance for Emerging adult children: Altruistic Perspective vs. Exchange perspective

The literature on why parents help their adult children has elaborated on two theoretical perspectives: altruism and exchange (Seltzer & Bianchi, 2013). These two perspectives are not mutually exclusive and can overlap. First, according to the altruistic perspective, parents assist adult children because they perceive their adult children as legitimate needing help. As the old saying goes, “the squeaky wheel gets the oil”; parents assess which adult child has the greatest need based on their situation. For instance, using a German sample, Leopold & Schneider (2011) found that specific events of economic need triggered parents’ monetary gifts. Using a French sample, Spilerman and Wolff (2012) found that, in support of the altruistic perspective, parents seem to be attuned to the dynamic financial needs of their adult children, housing purchase in this case, and may provide need-based aid as they see fit. Essentially, because

parents love and care about adult children with fewer resources, they do not mind a loss of resources on their part to help them overcome hardships and improve their well-being.

Using the altruistic perspective, parents might be inclined to provide more financial assistance to their sexual minority adult children because they perceive them facing greater societal challenges due to their sexual minority status, as compared to heterosexual adult children. They want to ensure that their sexual minority adult children do not experience a decline in well-being as a result. Indeed, the well—documented life disadvantages experienced by the sexual minority population include discrimination, weaker social support, poorer mental and physical health, and compromised socioeconomic standing (Thomeer et al., 2018). Thus, the altruistic perspective of parental financial help would predict that, all else being equal, sexual minority adult children would receive more monetary assistance from their parents compared to heterosexual adult children because they are in greater need (Altruism Hypothesis). Furthermore, this relatively greater financial aid to sexual minority adult children would be explained by factors related to situational challenges, such as mental and financial hardships, as well as the existence of the adult children's own children. This prediction operates under the assumptions that parents indeed perceive their child's sexual minority status as a life disadvantage and do not disapprove of the sexual minority status of the adult child to the point where they would seek to punish them by withholding financial assistance or be too estranged from them to even consider the option.

The exchange perspective argues that parents provide their adult children with the expectation of current or future reciprocity. In other words, parents may be "paying it forward" in the hope that their adult children would help them when needed. In support of this, there is evidence that the level of services an adult child provides to their parents, such as

transportation or home repairs, correlate with the financial assistance provided by parents (Cox & Rank, 1992). Thus, the exchange perspective of parental financial help assistance would predict that, all else being equal, sexual minority adult children would receive less monetary assistance from their parents compared to heterosexual adult children because their parents may assume that they are less likely to provide reciprocal help to them (Exchange Hypothesis). This relatively smaller amount of financial aid to sexual minority adult children would be explained by factors related to current or expected reciprocity between parents and adult children, such as the amount of assistance already provided by the adult children and the level of closeness in the relationship.

Predictors of Financial Assistance to Adult Children

Parental socioeconomic status is a predominant factor in predicting financial assistance to adult children. In general, parents with higher earnings and educational backgrounds tend to make greater investments in their children (Albertini & Radl, 2012; Zissimopoulos et al., 2020; Albertini & Kohli, 2013; Albertini & Radl, 2012; Brandt & Deindl, 2013; Cooney & Uhlenberg, 1992; Hansen & Wiborg, 2019; Spilerman & Wolff, 2012). Furthermore, this socioeconomic disparity in monetary transfer from parents is most pronounced during young adulthood (Huang & Pareles, 2022). Thus, it is not surprising that a key factor determining the frequency and amount of money transferred between parents and adult children is the financial standing of the parents in the first place.

Another significant factor that determines financial transfers from parents to adult children is family demographics, including the size and structure of the family. Since parental financial resources are limited, a transfer made to a child may impact other children (i.e., siblings) in the

family. Parental resources are usually shared and diluted among multiple children; for example, an only child is much more likely to receive financial help than someone with siblings (Kohli, 1999; Emery, 2013). Parental financial assistance to children is also stratified by family structure. Single parents or cohabiting parents make smaller financial investments in children than married parents (Hastings & Schneider, 2021). Stepparents may also provide smaller financial investments to their stepchildren (Carlson & Berger, 2013; Clark & Kenney, 2010). On the contrary, because of greater availability and a greater need for help, single individuals, either never married or divorced, may exchange support more (Fingerman, Miller, Birditt, & Zarit, 2009; Kalmijn, 2016).

Finally, demographic characteristics have been shown to impact parental help towards adult children. For instance, women/daughters tend to receive more financial assistance from their parents than men/sons (Nordblom & Ohlsson 2008). There also appear to be some impacts of race/ethnicity, with white and Asian parents more likely to provide help to their children compared to Black and Hispanic parents (Berry 2016; Hogan al. 1993; Lee and Aytac 1998). Parental financial support typically declines as the parent and adult child age (Cooney and Uhlenberg 1992). Thus, many factors influence the degree to which parents assist their adult children, and these were included as covariates in the analyses of the current study.

Adult Children's Sexual Orientation and Parental Financial Help

To the best of this author's knowledge, Perales & Huang (2020) is the sole study that has examined whether parental financial assistance differs based on adult children's sexual orientation, using measurements of frequency and the amount of cash transfers. The study revealed that adult children identifying as lesbian, gay, and bisexual received more money

from their parents compared to their heterosexual counterparts, even when controlling for other factors. This pattern persisted across the life course of the grown children. Specifically, when accounting for controls, parents with LGB adult children had a 12.7% conditional probability of providing financial assistance compared to the 8% probability for parents of heterosexual adult children. Thus, being a sexual minority turned out to be an asset for adult children in terms of securing financial assistance from their parents.

This finding of an 'LGB premium' in parental financial help may be quite puzzling and goes against the conventional belief that sexual minority adult children would experience parental discrimination, resulting in less financial assistance. To be specific, the conventional belief suggests that, due to long-standing heterosexist expectations and values in society, a significant number of parents may struggle to accept their children's non-heterosexual identities. This reluctance may be fueled by societal stereotypes or fear of societal judgment, leading to negative and discriminatory behaviors toward their sexual minority children. This lack of acceptance could manifest in family rejection, maltreatment, and withdrawal of support for sexual minority children, including financial support (Reczek, 2020). Rather, the empirical study by Perales & Huang (2020) found the opposite -- the 'LGB premium'. In their analyses, some altruism-related variables and exchange-related variables were statistically significant but could not fully explain the observed LGB premium. However, it is difficult to fully disentangle parental motives from the authors' data, given that all types of parental aid were lumped together into one outcome. The authors thus found no conclusive evidence for either explanation regarding why parents send money more to LGB than heterosexual adult children, leaving this question unanswered.

Data and Method

Data

This study primarily used data from the Add Health Parent Study (AHPS), conducted from 2015 to 2017, in conjunction with the National Longitudinal Study of Adolescent to Adult Health (Add Health). AHPS is an auxiliary survey focusing on the biological, adoptive, or stepparents of the participants in Add Health. It collected social, behavioral, and health data from a probability sample of 2,013 parents, representing 2,247 Add Health sample members. As the original Add Health sample represented U.S. adolescents and young adults, the AHPS sample was also designed to represent their parents. The AHPS participants were predominantly mothers aged between 50-80 years old. More detailed information about the AHPS data can be found at https://www.cpc.unc.edu/research-themes/projects/add-health-parent-study-phase-i/.

Using matching cases of the parent and adult child datasets, the study excluded respondents with missing information on the three types of parental financial help (i.e., outcome variables) (n = 7) and adult child's sexual minority status (i.e., key explanatory variable) (n = 158), which resulted in a final sample size of 2,082. To preserve the sample size that is not large from the outset and enhance statistical power, I imputed missing values for other variables by using multiple imputation, with estimates averaged across ten imputed datasets, instead of list-wise deletion that drops cases with any missing values. In addition to the advantage of maximizing the sample size, the multiple imputation method has the advantage of producing unbiased standard errors (Acock, 2015). Missing values for other variables were random and ranged from 0.14% (*parental education)* to 11.69% (*parental assets*).

Measures

Outcome Variables

The study used three measures of intergenerational financial support on the basis of the dataset availability: (a) educational expense, (b) housing expense, and (c) other expense. The survey questions included the following questions for each measure: (a) *Did you [or your spouse/partner] give any financial support such as money, personal loans or gifts to [Add Health Sample Member] to pay for school, including tuition, room and board, and books?* (b) *Did you [or your spouse/partner] give any financial support such as money, personal loans or gifts to [Add Health Sample Member] for buying a home, including a down payment?* (c) *Did you [or your spouse/partner] give any financial support to [Add Health Sample Member] for any of the following: for buying for other large expenses, such as a car, a wedding, helping to start a business, or substantial help with living expenses?* The study used a binary outcome variable for each question to indicate whether the parent respondents reported providing each type of financial help to their adult child (yes=1, no=0).

Independent Variables

The key independent variable in the current analyses was the sexual minority status of the adult child. The study used the AHPS respondents' Child Roster and matched/merged the questionnaire items on the adult child's sexual orientation from the Add Health Wave III dataset. The current study used same-sex attraction to identify sexual minority status; the Add Health respondents were asked whether they were romantically attracted to males or females. A respondent's sexual orientation was then matched with their own sex and their answers. If a

respondent reported any same-sex attraction, he or she was categorized as a sexual minority, regardless of having reported opposite-sex attractions as well (see Pearson et al., 2007; Pearson & Wilkinson, 2013; Wilkinson & Pearson, 2009 for the same operationalization)

Controls

The control variables included demographic, household, and parental characteristics. The adult child's sex was represented as a binary variable, with coding for male (reference) and female; Add Health questionnaires did not offer options beyond these two categories. Race/ethnicity was coded using three dummy variables of non-Hispanic white (reference), non-Hispanic Black, Hispanic of any race, and non-Hispanic other race (e.g., Native American and Asian/Pacific Islander). Family structure was indicated by a binary variable, with coding for families with two biological parents (reference) and those with a single parent, step-parent, or another family configuration. Both parent and adult child age were coded as a continuous variable. Parental education indicated the highest grade or year of education completed, treated as a continuous variable (0= *no formal education*, 1= *grades 1-11*, 2= *high school*, 3= *some college*, 4= *college grad*, 5= *post college*). Child educational status was not included due to the ongoing education status of a significant portion of the sample, given the mean age of approximately 21 years old. Parental income was represented as a continuous variable, reflecting the total household income from all sources in the past 12 months (in $10,000s). Similarly, parental assets were coded as a continuous variable. They included all assets such as home equity, other real estate, businesses, bank accounts, retirement plans, and stocks (in $10,000s). Variables related to the child's socioeconomic status were not included; due to the adult children's young age in this sample, their socioeconomic status is inseparably linked with

their parents' socioeconomic status. The number of siblings was a continuous variable, indicating the count of brothers and sisters the adult child had. The controls also included how geographically distant is the child ("*How far do you live from one another?*", "*live together*" = 1, *"within 1 mile*" = 2, "*1 to 10 miles*" = 3, "*11 to 50 miles*" = 4, "*51 to 100 miles*" = 5, *"101 to 200 miles"* = 6, *"more than 200 miles*" = 7) and whether the adult child was married to or cohabitating with a partner (yes = 1, no = 0).

The altruistic motive of parental financial help to young adult children included the three variables indicating whether the adult child had financial hardships ("*In the last years, do you think that the child or his/her wife/husband/partner has fallen behind on paying his/her/their bills?", "definitely fallen behind"* and *"probably fallen behind"* = 1, *"definitely not fallen behind"* and *"probably not fallen behind"* = 0), whether the adult child had mental hardships *(In the last years, do you think that the child suffered from depression?", "definitely has been told"* and *"probably has been told"* =1, *"definitely has not been told"* and *"probably has not been told"* = 0), and whether the adult child had any dependent child to support (yes = 1, no = 0). These were conceptualized as indicators of altruistic motivation because all these variables indicate the adult child's need for assistance.

The exchange motive of parental financial help to young adult children included the two variables indicating whether the adult child also helped the parents ("*Did the child help you with activities such as errands, transportation, chores, or hands-on care in the past 12 months?" "Yes"* = 1*, "no"* = 0) and how emotionally close the parents perceive the adult child (*"How close do you feel to the child?", "not at all close"* = 1*, "not very close"* = 2*, "somewhat close"* = 3*, "quite close"* = 4*, "very close"* = 5).These were conceptualized as

indicators of exchange motivations since they reflect reciprocal relationships between the adult children and older parents.

Analytic Plan

The analyses began with bivariate comparisons between heterosexual and sexual minority young adult children across all study variables to identify group differences that may affect variations in intergenerational financial help. This involved a series of t-tests between the two groups. Additionally, correlation tests were conducted to examine the relationships among the three outcome variables of financial help. Next, the study performed a series of multivariate analyses for an outcome variable represents any financial assistance. Then, three separate hierarchical logistic regressions were conducted for the three different types of financial assistance (i.e., education, housing, and other). All three analyses mirrored each other in terms of variables and steps. The first step of the model tested the effect of sexual minority status on each of the outcome variables. The second step incorporated the following control variables: adult child sex, adult child race/ethnicity, adult child's and parent's age, parent education, parent assets, parent income, family structure, the number of siblings, adult child's geographic distance, and adult child's partnership status. The third step included three variables to test the altruistic hypothesis: adult child's mental/ financial hardships, and adult child's child status. The fourth step removed the altruistic variables and added the two exchange variables: adult child also helping parents and adult child felt close to parents. The fifth and final step included all variables to assess the combined effects of sexual minority

status, altruism, and exchange motives simultaneously. The analyses were performed using STATA 16.1.

Results

Descriptive Statistics

[Table 2.1 here]

Of the 2,082 respondents, 13.21% (n = 275) had a sexual minority adult child. 74.06% of the respondents reported providing any kind of financial assistance to their adult children; Specifically, 62.72% reported contributing to education expenses, and 14.89% reported contributing to housing expenses. Additionally, 61.19% reported providing financial support for other large expenses, such as cars, weddings, or business endeavors. A series of *t*-tests revealed differences between parents of heterosexual and sexual minority adult children. Significant differences were observed in educational help and other large expense help: 75.22% of parents with sexual minority adult children, compared to 61.15% of parents with heterosexual adult children, assisted with education expenses. Meanwhile, 53.45% of parents with sexual minority adult children provided support for other large expenses, as opposed to 62.37% of parents with heterosexual adult children.

There were significant differences between the two groups in several control variables. Sexual minority adult children were predominantly female and White, and less likely to live with two biological parents but more likely to live with single/step/other parents. The noticeable percentage of females in the sexual minority group (81.41%) aligns with findings

from many nationally representative surveys consistently showing that a higher proportion of women than men identify as sexual minorities or something other than exclusively heterosexual (Evans & Silva, 2020; Gates, 2014; England & Caudillo, 2016). Furthermore, parents with sexual minority adult children tended to have higher educational attainment and fewer adult children (i.e., the adult child's siblings). Also, sexual minority adult children were less likely to have a married/cohabiting partner and live farther away from their parents compared to their heterosexual counterparts. Regarding the altruistic motive variables, sexual minority adult children were more likely to experience both financial and mental hardships and less likely to have any child of their own compared to their heterosexual counterparts. Regarding the exchange motive variables, sexual minority adult children were more likely to feel less close to their parents, to their heterosexual counterparts. However, there were no significant differences between sexual minority and heterosexual adult children in the likelihood of helping their parents.

[Table 2.2 here]

As depicted in Table 2.2, the likelihood of educational assistance and other assistance were all positively correlated. Though all three correlation coefficients are significant, certain correlations are stronger than others. For instance, the relationship between education assistance and other assistance is the most robust, suggesting that parents who assist with educational costs are more inclined to assist with other costs (e.g., weddings, cars, etc.) and vice versa. The weakest, albeit still positive and significant, relationship was observed between

education and housing assistance, suggesting these may represent more distinct types of financial support.

Any Assistance

[Table 2.3 here]

Following the analytic plan, a 5-step hierarchical logistic regression was run with 'any assistance' as the outcome (see Table 2.3). In the first step, sexual minority status significantly predicted parental investment, with sexual minority adult children being 229% more likely to receive help compared to their heterosexual counterparts; this "LGB premium" effect for all costs only held across step 1, 2 and 4, indicating it may not be a robust effect when accounting for other variables. The second step included control variables of demographics and family characteristics. Many of these control variables, with the exception of Black or Hispanic race/ethnicity, child age, child partnership status, and geographic distance, held consistently as statistically significant predictors across the models. The third step added the three altruistic motive variables. The presence of adult child's financial hardship was associated with a 31% lower likelihood of assistance, whereas the presence of mental hardship was associated with a 102% greater likelihood of assistance. The fourth step added the exchange motive variables. Among these, both adult child having helped parents (41% increased likelihood) and adult child felt close (14% increased likelihood) predicted any kind of parental assistance. The fifth and final step included all variables, of which only the presence of mental hardships (108% increased likelihood), history of helping parents (43% increased likelihood), and emotional

closeness (13% increased likelihood) remained statistically significant as positive predictors of parental assistance, indicating a potential mix of altruistic and exchange motives at play. Critically, sexual minority status was not a significant predictor of parental financial assistance when accounting for all other variables.

Education Assistance

[Table 2.4 here]

Following the analytic plan, a 5-step hierarchical logistic regression was run with educational assistance as the outcome (see Table 2.4). In the first step, sexual minority status did significantly predict parental investment in education, with sexual minority adult children being nearly 29% more likely to receive help as their heterosexual counterparts; this "LGB premium" effect for educational costs held across all steps in the model. The second step included control variables of demographics and family characteristics. Many of these control variables, with the exception of race/ethnicity and child age held consistently as statistically significant predictors across the models. The third step added the three altruistic motive variables, none of which were significantly associated with educational assistance. The fourth added the exchange motive variables; of these, only emotional closeness positively predicted parental educational assistance (16% increased likelihood). In the fifth and final step, sexual minority status (48% increased likelihood) and emotional closeness (14% increased likelihood) positively predicted parental assistance, whereas the adult child having a child or children of their own negatively predicted educational assistance (27% less likely).

Housing Assistance

[Table 2.5 here]

Again, following the analytic plan, a 5-step hierarchical logistic regression was run with housing assistance as the outcome (see Table 2.5). In the first step, sexual minority status was not significantly associated with parental financial help in housing costs; in fact, sexual minority status did not predict housing assistance in either direction at any step of this model. The second step included the control variables of demographics and family characteristics. Many of these control variables, with the exception of race/ethnicity, child age, family structure, and geographic distance held consistently as statistically significant predictors across the models. The third step added the three altruistic motive variables, showing that adult children with their own children were 88% more likely to receive housing assistance. The fourth added the exchange motive variables, none of which were significant predictors of housing assistance. In the fifth and final step, only the presence of adult child's child predicted housing assistance (91% increased likelihood).

Other Assistance

[Table 2.6 here]

Again, following the analytic plan, a 5-step hierarchical logistic regression was run with other assistance as the outcome (see Table 2.6). In the first step, sexual minority status was not significantly associated with other parental financial help; in fact, sexual minority status did not predict other assistance in either direction at any step of this model. The second step included control variables. Many of these control variables, with the exception of Black

and other race/ethnicity, child age, parent age, family structure, and geographic distance held consistently as statistically significant predictors across the models. The third step added the three altruistic motive variables, showing that adult children with their own children were 32% more likely to receive other financial assistance. The fourth added the exchange motive variables, showing that adult children who help their parents were 31% more likely to receive other types of financial assistance. In the fifth and final step, a mix of altruistic and exchange variables predicted parental help, with the presence of adult child's child (34% increased likelihood) and history of helping parents (31% increased likelihood) positively predicting other financial assistance.

Discussion and Conclusion

The present study examined the effect of sexual minority status on general parental financial assistance across three specific domains: education, housing, and other. Accordingly, two hypotheses were tested, reflecting the altruistic and exchange perspectives of parental financial help. If the altruistic perspective of parental financial help held true, then it was predicted that sexual minority adult children would receive more monetary assistance from their parents compared to heterosexual adult children due to greater need. Conversely, if the exchange perspective held true, then sexual minority adult children would receive less monetary assistance from their parents compared to heterosexual adult children because they were less expected to provide reciprocal help to their parents. The analysis results revealed starkly different patterns, depending on the domain of financial assistance; thus, there did not

seem to be a “one size fits all” explanation for the effect of sexual minority status on parental assistance.

Looking at general financial assistance (i.e., all types of parental assistance aggregated together), the analysis revealed that sexual minority adult children were not more or less likely to receive monetary assistance from their parents compared to their heterosexual counterparts. This finding contradicts a prior study that found the so-called “LGB premium” in parental financial aid (Pareles & Huang, 2020). In contrast, both the altruistic factor of mental health issues and the exchange factors of child having helped parents and child felt close positively predicted the likelihood of parental assistance in any domain, indicating mixed motivations for parental financial aid. Thus, the support for any of the hypotheses in this domain is mixed at best, although two exchange motive variables were significant predictors as opposed to only one altruistic variable, indicating a potentially stronger influence of exchange motives .

Looking across the steps of the analyses on any parental financial assistance (see Table 3), it is noteworthy that the effect of sexual minority status disappears at step 3 when the altruistic variables are added, reappears at step 4 when altruistic variables are removed, and then disappears again at step 5 with all variables included. Thus, it is highly likely that the altruistic variables, especially the mental hardship variable, largely accounts for any effect of sexual minority status on general parental assistance. Research has shown that LGBT individuals tend to suffer from worse mental health than heterosexual individuals (Russell & Fish, 2016). Perales and Huang (2020) did account for mental health scores in their model, but here national context may be different – Perales and Huang conducted their analyses on a sample in Australia where there is a single-payer universal healthcare system in place, whereas the present study is on a sample from the US where healthcare is largely funded by employer-

sponsored private insurance (Commonwealth Fund, 2020). Thus, parents in the US may feel a greater impetus to assist their adult children with mental health issues due to the relatively higher cost of medical treatment. Indeed, other research has emphasized the importance mental health can play in familial support (Chen & Harris, 2019). Therefore, for this study, it may be more accurate to refer to a "mental health premium" as opposed to an "LGB premium" in the context of parental financial assistance.

In the realm of educational assistance, being a sexual minority seemed to be an asset in obtaining parental financial assistance; parents were more likely to give money for educating their sexual minority adult children compared to heterosexual adult children, even when accounting for altruistic and exchange motives. Parents may see paying for an adult child's education as an investment in their sexual minority adult child's future that is worthwhile (Keane & Wolpin, 2001) and are thus more inclined to offer this kind of assistance, contributing to the "LGB premium" in education support. Furthermore, sexual minority individuals are more likely to pursue college education compared to their heterosexual counterparts (Mittleman, 2022), which may further explain why this form of assistance is more common for sexual minority adult children.

In contrast to the pattern with educational assistance, being a sexual minority seemed to have no statistically significant effect on receiving financial assistance for housing. Exchange motives also played little to no part in parents' decisions to assist their adult children with housing, with neither of the exchange-related variables being statistically significant in the analysis. On the flipside, altruistic motives played a small part, as adult children who had their own child were considerably more likely to receive housing assistance from their parents compared to when adult child's child was not present. In comparison to education, parents may

not see housing assistance as an investment in their adult child's future, thus explaining the lack of effect from any exchange motive variables. It is noteworthy that sex of the adult child here played a reverse role from that in educational assistance, with males being more likely to receive housing assistance. This could be partly because women are simply more likely to attend college than men (National Center for Education Statistics, 2022), thus parents place the heavier investment in education for their female adult children and instead help their male adult children with their housing.

Finally, sexual minority status displayed little to no predictive power for the other domain of financial assistance. In addition, there were mixed findings regarding motives for assistance. On the one hand, like housing assistance, the presence of an adult child's child predicted financial assistance with other domains, which is more in line with altruistic motives for assistance; on the other hand, adult children who helped their own parents were also more likely to receive assistance, which is generally in line with exchange motives. Thus, the pattern of results does not lend conclusive support to either of the perspective. Furthermore, female adult children, similar to educational assistance, were more likely to receive help with things falling under the "other" category, such as wedding. There is some evidence to suggest parents of the bride are more likely to foot more of the bill of a wedding ceremony compared to the parents of the groom (Barnes, 2014). It is also worth briefly noting at this point that, across all analyses, the control variables of parental education, income, assets, and the number of siblings consistently predicted parental giving. Thus, these variables serve as something of a baseline of parental financial assistance and perhaps play the biggest role in predicting any type of giving.

Ultimately, there is no clear support for either hypothesis across the board, but some cautious inferences can be made given the current patterns of results. For all kinds of assistance

taken together, support for either hypothesis is inconclusive – a mixture of exchange and altruistic motives seem to be at play. Also, more importantly for the study purposes, sexual minority status did not reliably predict outcomes. For educational assistance, exchange motives, paired with sexual minority status, seemed to be a motivation for assistance, indicating that parents are more inclined to assist with the education of sexual minority children and perhaps perceive them more likely to return the intergenerational help back. In the domain of housing assistance, with only the presence of adult child's child being a predictor in this model. For other kinds of assistance, it was again a mix of motivations, lending similar support for the two hypotheses.

There are, of course, some limitations to the current study. First, as mentioned before, because the data used in this study pertains specifically to a certain age group of parents and their adult children (i.e., parents mostly in their 40s to 70s and their adult child mostly in their 20s to 30s), some of these patterns could differ in later life stages, especially those concerning assistance with down payments on homes or wedding expenses. Future research should aim to utilize datasets with more diverse age groups across adulthood to further examine these effects. Second, due to the small sample size, the current study had to use a simplistic binary classification of sexual minority vs. heterosexual individuals. This binary classification did not adequately account for individuals with bisexual or diverse sexual identities separately. Relatedly, there existed a notable gender imbalance among the subset of sexual minority individuals in this study, with women being overrepresented. Given possible differences between lesbian/bisexual women and gay/bisexual men, it would be beneficial for future research to explore whether the findings of the study vary among more diverse categories of

sexual minority and gender. Future work should aim to utilize datasets that allow for more nuanced classifications of sexual minority status.

Third, the altruism and exchange hypotheses often involve comparing aid given among siblings within the family context. Yet, sibling-match intrafamilial data is relatively uncommon and many studies have implemented interfamilial designs instead (Spilerman & Wolff, 2012; Leopold & Schneider, 2018; Perales & Huang 2020). As the Add Health Parent Study used in the current study was not structured to match information regarding an adult child's sibling, future studies incorporating more comprehensive sibling-related data could provide a better examination of the intrafamily dynamics in parental financial assistance. Fourth, there is oftentimes no clear-cut classification of the altruistic vs. exchange motives for some factors of parental financial help. For example, the current study classified 'adult child having their own child' as one of the altruistic motive indicators that increase parental assistance. However, the presence of an adult child's child may also fall under the exchange motive as grandparents may like to invest in their grandchild as a source of future support by providing financial assistance to their adult children. Caution should be exercised in drawing definitive conclusions from the study findings, acknowledging different rationales of the altruism vs. exchange motives indicators. Finally, some say that the predictor variables of parental socioeconomic status have an endogenous nature to the outcome variables, parental financial assistance; even though these socioeconomic variables were included as controls, caution should be used when interpreting their role in the overall model.

The current study explored various factors that impact intergenerational financial assistance by focusing on sexual minority status of young adult children. It reveals that sexual minority young adult children were more likely to receive parental assistance with education

but no more likely to receive assistance in other forms. Additionally, altruistic motives for help, particularly the adult child having their own child, appeared to consistently influence assistance across different domains, although elements of exchange motivations, such as adult child previously assisting the parent or adult child felt close, played a role as well, contingent upon the type of assistance. These findings offer evidence that the influence of sexual minority status on parental financial assistance is domain-specific and that sexual minority adult children do not experience uniform disadvantage or advantaged in all types of financial assistance. This work sheds further light on the topics of intergenerational relationships and sexual minority family studies.

Chapter 4

Sexual Orientation, Parental Ties, and Health in Midlife: A Mediation Analysis

Introduction

Health is a dynamic process, capable of improving and deteriorating within an individual, and is influenced by different factors over the course of an individual's lifespan (Halfon & Forrest 2018; Marmot & Bell 2012). One key factor that social scientists have found significantly influences an individual's health outcomes is social relationships, including intergenerational relationships between parents and children (Thoits, 2011; Umberson & Thomeer, 2020). The better quality of one's relationship is with their parents, the better their mental and physical health outcomes tend to be in a variety of domains (Chen & Harris, 2019).

On the flipside, a key variable that has been found to negatively affect mental and physical health outcomes is stigmatized social identity (Meyer, 1995, 2003). According to minority stress theory, individuals carrying stigmatized social identities face unique daily chronic stressors such as discrimination and social exclusion related to their identities, which can adversely impact their mental and physical health. Among various stigmatized identities that triggering minority stress, one that has garnered much attention from scholars over the past couple of decades is sexual minority status. Namely, being a part of the LGBTQ community often heightens the risk of experiencing adverse mental and physical health outcomes for a variety of reasons (Hatzenbuehler, 2009; Russell & Fish, 2016).

Recently, numerous studies have delved into how intergenerational relationships and sexual minority status interact across the lifespan, influencing health outcomes (Newcomb et al., 2019; Katz-Wise et al., 2016; Mills-Koonce et al., 2018 for reviews). The intricate three-

way relationship among intergenerational relationships, sexual minority status, and health outcomes is complicated by the fact that sexual minority status, depending on context, frequently deteriorates intergenerational relationships due to parental rejection and disapproval (Ryan et al., 2020). As posited by other researchers (Argyriou et al., 2020; Montano et al., 2008; Needham & Austin, 2010; Haas et al., 2011; King et al. 2008; Ueno 2005; Watson et al., 2019), intergenerational relationships could be conceptualized as a pathway *through* which sexual minority status influences mental and physical health outcomes. The current research employed this framework to investigate how sexual minority status and intergenerational relationships influence mental and physical health using a mediation model. Previous studies have shown that positive family relationships can mediate the association between sexual minority status and poor health in adolescents (Luke et al., 2018; Needleham 2012; Pearson & Wilkinson, 2013; Rosario et al., 2014). Using data from Wave V of the National Longitudinal Study of Adolescent to Adult Health (Add Health), this study seeks to apply a similar approach to explore these relationships at the mid-life stage, examining whether the mediating role of intergenerational relationships between sexual minority status and poor health outcomes persists beyond adolescence and young adulthood.

Literature Review

Intergenerational Relationships and Health

Parent-child relationships carry enormous implications for the health of children across their lifespan, both positively and negatively, through various complex pathways (Thoits, 2011; Umberson & Thomeer, 2020). Because parents are key sources of emotional and financial resources for offspring, positive, attached, and close parent-child relationships benefit

children's psychological and physical well-being (Chen & Harris, 2019). These relationships also serve as a buffer against external stressors of daily lives; research strongly support that a positive family environment moderates the effects of discrimination on mental and physical health symptoms (Kim et al., 2021). Another pathway in which positive parent-child relationships promote good health is through parents instilling positive norms that encourage healthier behaviors of children and monitor their poor health behaviors (Umberson et al., 2010). For instance, parents often exert social control over their children's diet and exercise routines (Tucker et al., 2004). Stress stemming from strained relationships can not only directly deteriorate a child's health but also indirectly lead to stress-coping behaviors that compromise health, such as overeating, drinking, smoking, and drug use (Thomas et al., 2017). Recent evidence showed that adverse ties with fathers were associated with heightened depressive symptoms and reduced life satisfaction in both sons and daughters (Polenick et al., 2018). Thus, research in this field has emphasized the importance of intergenerational relationships that provide direct and indirect health advantages or disadvantages for offspring.

Intergenerational relationships encompass three interconnected yet distinct domains: emotional closeness, contact, and instrumental help (Bengtson & Roberts, 1991). While intergenerational relationships overall negatively or positively impact the health of adult children, each dimension may hold different health implications. First, emotional closeness refers to the degree of bonding between generations. Strong emotional ties within intergenerational relationships correlate with positive health outcomes for adult children. Literature widely supports the notion that emotional closeness reduces stress levels, enhances life satisfaction, and improves overall health (Lowenstein 2007; Umberson et al., 2010). For instance, Roberts & Bengtson (1998) found that close parent-child relationships bolstered self-

esteem and psychological well-being of adult sons and daughters. Second, contact refers to the frequency and quality of communication and interaction between adult children and their parents. Regular and meaningful contact positively influences health; studies reveal that maintaining social connections and consistent communication with parents is associated with reduced depression and better overall health (Suitor et al., 2022) Last, instrumental help refers to tangible assistance exchanged across generations, such as financial aid, caregiving, or practical support with daily tasks. The impact of instrumental help on health outcomes varies based on the nature and quality of assistance; since adequate instrumental help meets the practical needs of adult children, such as financial aid during challenging life events, it may alleviate stress and improve health outcomes (Johnson, 2013). Conversely, excessive or intrusive instrumental help may compromise autonomy and well-being (Mortimer et al., 2016). Therefore, while acknowledging the importance of overall intergenerational relationships on health, paying attention to the multifaceted domains of intergenerational relationship regarding health - rather than treating them as a single entity- would provide more comprehensive insights. This approach helps avoid oversimplifying the complex dynamics at play, offering a closer and more nuanced understanding of their impact.

Sexual Minorities, Health, and the Role of Parental Ties

Minority stress theory (Meyer, 1995, 2003) asserts that individuals facing social stigma, discrimination, and alienation in daily life often experience adverse psychological and physical health problems. This theory aims to explain how belonging to stigmatized social groups – like racial/ethnic minorities, sexual/gender minorities, immigrants, and people with disabilities - can lead to chronic stressors affecting health. Meyer (1995, 2003) introduced this theory to

elucidate the relationship between social identity, stress, and health within minority populations. These chronic stressors experienced by individuals with stigmatized social identities can be categorized into three types: external, internalized, and interpersonal. External stressors encompass encounters with discrimination, victimization, and social inequality. Internalized stressors involve the adoption of negative societal attitudes and beliefs, resulting in self-stigma, shame, and low self-esteem. Interpersonal stressors involve strained relationships, rejection, and a lack of support from family, friends, and communities. The accumulation of these stressors over time often leads to adverse mental health outcomes, including increased depressive symptoms, anxiety, substance abuse, and suicidal ideation among those with stigmatized social identities. Moreover, minority stress impacts physical health by triggering physiological arousal, disruptions in immune functioning, and unhealthy coping behaviors (Meyer, 1995, 2003).

As one of the most representative minoritized groups in society, sexual minority individuals encounter various stressors from an early age, including peer victimization, physical and psychological assaults, and lack of support within heteronormative, homophobic society (Russell & Fish, 2016). This heightened exposure to stressors can negatively impact intra- and interpersonal processes, increasing vulnerability and susceptibility to various health issues (Hatzenbuehler, 2009). Indeed, the well-documented mental and physical health disparities between sexual minority and heterosexual individuals are a significant concern in both scholarly and policy discussions. Overall, sexual minorities experience a spectrum of poorer physical and mental health outcomes, such as depression, suicidality, substance abuse, HIV/AIDS, STIs, cancer, cardiovascular diseases, and obesity, compared to their non-sexual minority counterparts (Lick et al., 2013). Given these added health risks for sexual minority

individuals , numerous studies have shed light on the role of parent-child relationships in the health and well-being of sexual minorities (Mills-Koonce et al., 2018).

Research in this field indicates that quality parent-child relationships serve as a protective factor for sexual minority children from hostile social environments and negative events outside the home. Parental support and acceptance consistently correlate with positive outcomes for sexual minority youth, whereas rejecting and estranged parental relationships often lead to negative outcomes (Ryan et al., 2009; la Roi et al., 2016; Shilo & Savaya, 2011). Specifically, studies suggest that disparities in health and well-being between heterosexual and non-heterosexual groups could, in part, stem from differences in their parental relationships, given the potential for weaker ties for sexual minority children compared to their heterosexual counterparts (Argyriou et al., 2020; Montano et al., 2008; Needham & Austin, 2010; Ryan et al., 2020; Haas et al., 2011; King et al. 2008; Ueno 2005; Watson et al., 2019). Furthermore, growing evidence highlights that factor such as perceived closeness with parents (Needleham 2012), parental involvement and family support (Pearson & Wilkinson, 2013), self-rated family satisfaction (Luke et al., 2018), and secure attachment to mothers (Rosario et al., 2014) mediate the link between sexual minority identity or same-sex attraction and a variety of health outcomes in youth. For instance, the higher levels of depressive distress reported by lesbian, gay, bisexual, and mostly heterosexual emerging adults compared to their completely heterosexual counterparts were partially explained by less secure maternal attachment (Rosario et al., 2014). In sum, the literature suggests that parent-child relationships play a crucial mediating role in shaping mental and physical health outcomes for sexual minority individuals.

Limitations of Previous Studies

While existing studies have contributed significantly to understanding the mediating role of intergenerational relationships in the connection between sexual orientation and health, two critical points warrant further investigation. First, prior studies have overwhelmingly focused on adolescent and young adult children (Bouris et al., 2010). This focus is justified as adolescence and young adulthood represent crucial life stages when individuals typically grapple with same-sex attraction and construct their sexual minority identity (Bishop et al., 2020). However, limited attention has been directed towards understanding how sexual orientation and intergenerational relationships contribute to impact children's health and well-being *beyond* this extensively studied period. Although it is assumed that the relationship between sexual orientation, intergenerational relationships, and health would remain stable post this period, this is an empirical question to further explore. Midlife, roughly spanning from the mid-thirties to mid-sixties, is a relatively understudied life course stage, and the influences of intergenerational relationships on the health and well-being of middle-aged adult children have received less attention. This is mostly because of more emphasis placed on the influences of spouses or cohabiting partners on the health and well-being of midlife individuals (Umberson et al., 2006). However, given that parent-child ties endure throughout life, intergenerational relationships might still substantially contribute to the health and well-being of midlife adult children, albeit with varying degrees of influences. In midlife, adult children become less dependent on their parents compared to younger life stages, yet it does not necessarily mean the absence of dependency and ties (Infurna et al., 2020). To date, there is a dearth of studies that particularly consider children's sexual orientation when exploring intergenerational relationships and midlife health. Second, the existing literature on sexual orientation, intergenerational relationships, and health has predominantly focused on the

affective dimension of intergenerational relationships. However, comprehensive aspects such as frequency of contact (associational dimension) and instrumental help (functional dimension; Bengtson & Roberts, 1991) in intergenerational relationships remain relatively underexplored.

Thus, the present work aims to expand the existing understanding of sexual orientation, intergenerational relationships, and health from adolescence and young adulthood toward further life course stages and considering multidimensional aspects of intergenerational relationships. Specifically, the present work examines how the three dimensions of intergenerational relationships (i.e., affective, associational, and functional dimensions) mediate the relationship between sexual orientation and adult child's mental and physical health while entering midlife. In doing so, the present study utilized depressive symptoms as a proxy for mental health and self-rated general health as a proxy for physical health, for several reasons. First, depression stands out as a prevalent mental health condition that affects a significant portion of the population (World Health Organization, 2023), rendering it a pertinent and extensively investigated measure in mental health research. Depressive symptoms are also commonly comorbid with other mental health conditions, such as anxiety disorders or substance use disorders (Kessler et al., 2005). Second, self-rated health is a common measure in health research, enabling individuals to assess their physical well-being based on their own perceptions and experiences. This assessment considers various aspects of health such as chronic conditions, functional limitations, symptom burden, and overall health status (Ware & Sherbourne, 1992). As a globally recommended primary metric by the World Health Organization, it is methodologically simple and efficient to administer in large-scale population surveys. Notably, extensive research on sexual minority health employs these two measures to compare the health and well-being of the sexual minority community with the

general population (Denney et al., 2013; Luk et al., 2018; Reczek et al., 2017; Roi et al., 2016). Therefore, the focus on depressive symptoms and self-rated health is useful to comprehend the population-level landscape of mental and physical health and, in the context of this study, potential disparities experienced by sexual minority adult children.

Predictors of Self-Rated Health and Depressive Symptoms

Although there is a myriad of factors that affect the self-rated health and depressive symptoms of individuals and populations, the current study narrowed its focus to several demographic and family factors, aligning with the other two studies of this dissertation reported in Chapters 2 and 3. Gender and race/ethnicity are significant factors, with research indicating that women (Nolen-Hoeksema & Grayson 1999) and racial/ethnic minority individuals (Dunlop et al., 2003; Williams, 2003) generally report higher levels of depressive symptoms and lower levels of health compared to men and white individuals. Age is another significant factor, as it is associated with changes in the prevalence and patterns of depressive symptoms. Rates of depression tend to increase during adolescence and early adulthood, decreasing in later life (Kessler et al., 2005). Advanced age is also likely to be linked with declining overall health (Idler & Benyamini, 1997) Educational attainment and income are well-established factors to mental and physical health. Higher levels of education and income are associated with lower rates of depressive symptoms and better self-rated general health (Lorant, 2003; Shen, 2020). Family structure, such as single-parent households or blended families, can influence the health of its members. Research suggests that individuals from non-traditional family structures may experience more depressive symptoms and compromised health, possibly due to increased stress, disrupted family dynamics, or lack of social support (Amato, 2000). Regarding the

number of siblings, its impact is not straightforward; some studies suggest that having more siblings may be associated with an increased risk of depressive symptoms, possibly due to competition for resources or increased family stress. However, other studies have found no significant relationship or even protective effects of having siblings on depressive symptoms (Grinde & Tambs, 2016). Regarding partnership status, research univocally suggests that individuals in stable and supportive partnerships tend to have lower rates of depressive symptoms compared to those who are single or in unstable relationships (Whisman & Uebelacker, 2006; Umberson et al., 2006). Meanwhile, the impact of having children on depressive symptoms and health is somewhat mixed. Some studies suggest that having children is associated with an increased risk of depressive symptoms and compromised health conditions possibly, possibly due to increased parenting stress and demands, while other studies have found no significant relationship or even protective effects of parenthood on health (Nomaguchi & Milkie, 2003).

Research Questions and Hypotheses

Building upon the literature, I propose the following research questions:

(1) Do depressive symptoms differ by sexual minority status?

(2) Does self-rated health differ by sexual minority status?

(3) How do the three dimensions of intergenerational relationships mediate the association between sexual minority status and depressive symptoms in early midlife?

(4) How do the three dimensions of intergenerational relationships mediate the association between sexual minority status and self-rated health in early midlife?

Based on the previous literature reviewed, I propose the following hypotheses:

H1a: Sexual minority individuals will display higher levels of depressive symptoms compared to their heterosexual counterparts.

H1b: This relationship between sexual minority status and depressive symptoms will be mediated by maternal/paternal emotional closeness, contact, and financial exchange.

H2a: Sexual minority individuals will display higher levels of negative physical health symptoms compared to their heterosexual counterparts.

H2b: This relationship between sexual minority status and negative physical health symptoms will be mediated by maternal/paternal emotional closeness, contact, and financial exchange.

Data and Method

Data

Data were drawn from Wave V of the National Longitudinal Study of Adolescent to Adult Health (Add Health) conducted in 2016-2018. Add Health is a national probability sample survey starting with 20,745 adolescents in grades 7-12 in the United States, who were born between 1974 to 1983. This sample was drawn from U.S. high schools that were stratified by region, urbanicity, size, type, racial composition, and grade span, using a random sampling technique. The first wave of survey interview took place in 1994-1995 when participants were 15 years old on average. Subsequently, the same individuals were repeatedly interviewed in 1996 (Wave II) at an average age of 16, in 2001-2002 (Wave III) at an average age of 22, in 2008-2009 (Wave IV) at an average age of 28, and in 2016-2018 (Wave V) at an average age of 37. Additional details regarding Add Health's sampling procedures and survey design can be accessed on their website (see https://addhealth.cpc.unc.edu/documentation/study-design). With its wealth of social, familial, psychological, behavioral and health information spanning

the life course, Wave V of Add Health, which focuses on the age range between 32-42, is ideally suited for examining sexual orientation, intergenerational relationships, and health entering midlife.

Of the 12,300 respondents who completed the Wave V survey interview, I first excluded individuals with missing information on questions related to the sexual minority status variable (n = 56). Asexual individuals (n = 35) were also excluded as this group are known to have distinctive characteristics from heterosexual and sexual minority individuals (Rothblum et al., 2020) but the group size was too small to create a separate analytic category. Then, individuals with missing values for the health outcome variables were excluded (self-reported general health n = 25 and depressive symptom score n = 206, see the *measures* section). Furthermore, those who had missing information across six intergenerational relationships mediators (n = 220, see the *measures* section) were dropped from the analysis, which resulted in a final analytic sample of 11,772 individuals.

Measures

Outcome Variables

General Physical Health

General physical health (*"In general, how is your health?")* was self-reported at Wave V *using a 5-point Likert scale ranging from 1 ="excellent," 2 ="very good," 3 = "good", 4 = "fair" to 5 ="poor."*

Depressive Symptoms

Depressive symptoms were measure at Wave V using five items from the Center for Epidemiological Studies Depression (CES-D) scale. They included a series of five questions assessing respondents' experiences over the past 7 days. These questions asked how often "*I felt that I could not shake off the blues, even with help from my family and friends," "I felt depressed," "I was happy,"* (reverse coded), *"I felt sad,"* and *"I felt that life was not worth living."* The respondents provided answers to each question on a scale of 1= "*never or rarely,"* 2= *"sometimes,"* 3= "*a lot of the time,"* and 4= "*most of the time or all of the time".* The responses to the questions were summed to create a total score ranging from 5 to 20, where higher scores indicated greater depressive symptoms. The internal consistency of t the five-item measures assessed by Cronbach's alpha was .82, which indicated good reliability.

Independent Variables

The key independent variable in this study is sexual minority status. Sexual minority status was operationalized using the following question from Wave V: *"Please choose the description that best fits how you think about yourself.*" Respondents provided answers on a scale ranging from 1 = *100% heterosexual (straight),* 2 = *mostly heterosexual, but somewhat attracted to people of your own sex,* 3=*bisexual, that is, attracted to men and women equally*, 4 = *mostly homosexual (gay), but somewhat attracted to people of the opposite sex,* 5 = *100% homosexual* (gay), to 6 = *not sexually attracted to either males or females.* As the current study focused on middle-aged individuals who are likely to have established their sexual orientation and self-identification, the study used the self-identification measure for analyses. Asexual individuals were excluded from the sample, and respondents were regrouped into two categories: 100% heterosexual and sexual minority individuals.

Potential Mediators: Intergenerational Relationships

The three dimensions of intergenerational relationships included maternal/paternal emotional closeness, contact, and financial exchange. Maternal/paternal emotional closeness was assessed at Wave V using the survey question, "*How close do you feel to your mother/father figure?*". Respondents rated their emotional closeness on a 5-point scale, with options ranging from 1 = "*not at all close,"* 2 = "*not very close*," 3 = "*somewhat close*," 4= "*quite close"* to 5 = "*very close."*

Maternal/paternal contact was assessed using the survey question, "*How often do you and your mother/father figure see each other, talk on the telephone, exchange letters, exchange email, text message, or communicate via social media, such as Facebook?".* Respondents indicated the frequency on a 6-point scale, with options scored as 1 = never, 2 = once a year or less, 3 = a few times a year, 4 = once or twice a month, 5 = once or twice a week, 6 = almost every day.

Parental financial exchange was assessed using two survey questions. The first question was "*How many times has a parent or parent figure paid your living expenses or given you $50 or more to pay living expenses during the past 12 months*?". The available responses were scored as follows: 1 = *never*, 2 = *1 or 2 times*, 3 = *3 or 4 times*, 4 = *5 or more times.* The second question was "*How many times have you paid a parent or parent figure's living expenses or given him or her more than $50 to pay living expenses during the past 12 months?*". The available responses were also scored as follows: 1 = *never*, 2 = *1 or 2 times*, 3 = *3 or 4 times*, 4 = *5 or more times*. As described below, SES indicators of both parents and

children were entered as control variables to control for baseline ability of parents to give financial assistance as well as children's baseline need for assistance.

Controls

The control variables include gender, race/ethnicity, age, the educational level and income of adult child, the educational level and income of each parent, family structure, the number of siblings, partnership status, and number of children. Gender was a binary variable coded as male (reference) or female. Race/ethnicity was coded using three dummy variables of non-Hispanic white (reference), non-Hispanic Black, Hispanic of any race, and non-Hispanic other race (e.g., Native American and Asian/Pacific Islander). Age was coded as a continuous variable. Adult child's educational level was measured on a 16-point ordinal scale from 1 = *8th grade or less* to 16 = *completed a post baccalaureate professional degree.* Adult child's income was coded as a continuous variable in $5 thousands. Each parent's educational level was measured on a 10-point ordinal scale from 0 = *never went to school* to 9 = *professional training beyond a four-year college or university*. Each parent's income was coded as a continuous variable in $ thousand. Family structure was a binary variable coded as families with two biological parents (reference) and families with a single parent, step-parent, or other family structure. The number of siblings was a continuous variable indicating how many brothers and sisters a respondent has. Partnership status was a binary variable coded as single (reference) or partnered (e.g., married or cohabitating). The number of children was a continuous variable representing the count of the adult child's own child.

Analytic Plan

First, I conducted analyses of self-rated health and depressive symptoms outcomes by sexual minority status using a series of t-tests (see Table 10). Second, I performed correlation and VIF analyses on the six mediators to diagnose potential multicollinearity issues (see Table 11). Next, I assessed the mediation hypotheses of the study using two general linear model (GLM) frameworks with the potential mediator, intergenerational relationships. Three dimensions of intergenerational relationships were examined in parallel. The models were utilized to test the association between sexual minority status and intergenerational relationships in midlife (*a* path), the association between intergenerational relationships, self-rated health, and depressive symptoms in midlife (*b* path), and the indirect effects of these *a* and *b* paths, respectively. The total indirect effect was the sum of all indirect effects. The direct effect (*c'* path) was the effect of sexual minority on depressive symptoms and self-rated health, respectively, without any mediators. The total effect represents the combined influence of sexual minority status on depressive symptoms and self-rated health, respectively, considering both the direct effect and the total indirect effect in the mediation model.

Model fit was assessed using the root mean square error of approximation (RMSEA), the Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) as commonly used for SEM (Hooper et al, 2008). In general, cutoff values of < 0.06 for RMSEA, > 0.95 for CFI, and > 0.95 for TLI have been recommended in the literature (Hu & Bentler, 1998; 1999; Steiger & Lind, 1980; Steiger, 1990). Missing data were addressed by full information maximum likelihood (FIML) model estimation (Acock, 2005). FIML employs non-missing variables to compute the maximum likelihood of each missing data point and is frequently used in structural equation modeling. The missing data in the dataset was random and ignorable, with

the largest proportion of missing values being 3.67%. Statistical procedures were performed using STATA 16.1.

Results

[Table 3.1 here]

First, I conducted analyses of self-rated health and depressive symptoms outcomes by sexual minority status using a series of t-tests. Table 3.1 provides descriptive statistics for variables used in the analyses, stratified by sexual minority status. Among 11,772 respondents, 1,731 individuals (14.70%) identified as sexual minorities. The sexual minority group fared significantly worse in self-rated health (M = 2.58 vs. 2.43) and depressive symptom scores (M = 8.27 vs. 7.19) than the heterosexual group. In terms of intergenerational relationships, the sexual minority group had significantly lower levels of maternal closeness (M= 3.90 vs. 4.13) and paternal closeness (M = 3.45 vs. 3.80) compared to their heterosexual counterparts. The sexual minority group also had significantly lower levels of paternal contact (M = 4.34 vs. 4.63), while their maternal contact was not significantly different from their heterosexual counterparts. The sexual minority group was more likely to receive financial help from parents (M =1.49 vs. 1.41), while there was no difference in giving financial help to parents. It is worth noting that, since ability to give financial help is oftentimes inversely proportional to need for financial help, thus potentially explaining sexual minority adult children being less giving toward parents.

Moreover, the sexual minority and heterosexual groups exhibited significant differences in several demographic and family characteristics. The sexual minority group was more likely to be female (74.60% vs. 53.76%), aligning with findings from many prior studies that women are more prone to identify as lesbian or bisexual compared to men (Silva and Evans, 2020; England & Caudillo, 2016). The sexual minority group was also more likely to be white (61.54% vs. 57.58%) and younger in age (M = 36.83 vs. 37.12). Notably, the sexual minority group had a significantly lower income compared to the heterosexual group (M = $34,200 vs. $36,650), although the years of education were significantly higher for the sexual minority group (M = 8.48 vs. 8.19). The mothers and fathers of sexual minority adult children tended to have significantly higher educational levels than the mothers and fathers of heterosexual adult children. The sexual minority group was more likely to have had families with a single or step-parent or families with another structure (50.61% vs. 45.09%) than their heterosexual counterparts. The sexual minority group was also less likely to be stably partnered (67.88% vs. 74.69%) and had fewer children (M = 1.17 vs. 1.57).

[Table 3.2 here]

The second part of the analyses involved pairwise correlation tests and VIF analyses of the six mediators of intergenerational relationships to diagnose the potential existence of multicollinearity issues. The pairwise correlation tests revealed small to moderate positive correlations between the six mediators. The two highest correlations, 0.59 and 0.65, were found between the mediator maternal closeness and maternal contact, and paternal closeness and paternal contact, respectively. However, these values did not exceed the common threshold

for a high level of correlation coefficient, which is above 0.7 or 0.8, and does not raise concerns about multicollinearity. According to the VIF test, the mean VIF value of the six mediators was 1.84, and the highest VIF value was 2.39 for the paternal contact mediator. Again, this value did not exceed 5 or 10, which are considered indicative of potential multicollinearity issues. In conclusion, the correlation magnitudes analyzed among the six mediators were modest at best, implying that their associations may not be particularly strong to be concerned for further analyses.

Next, I addressed the mediation research questions of the study using two GLM frameworks with the six mediators of intergenerational relationships. The first mediation model analysis tested the direct effect of sexual minority status on depressive symptoms outcomes and the indirect effects of intergenerational relationships variables while controlling for demographic and family characteristics (see Figure 3.1).

[Figure 3.1 here]

The analysis yielded a significant total effect (coef. = 1.08, SE = .07, p < .001). The direct effect was significant, with sexual minority status predicting a higher depressive symptom score. Furthermore, the indirect paths of maternal closeness (Sobel $Z = 6.31$, SE = 0.01, $p < .001$), paternal closeness (Sobel $Z = 6.86$, SE = 0.02, $p < .001$), and parental giving (Sobel $Z = 4.37$, SE = .01, $p < .001$) were significant with negative *a* and *b* coefficients, indicating these variables partially mediated the relationship between sexual minority status and depressive symptoms. Furthermore, these variables all mediated positively in their total indirect effects, indicating they were associated with increased depressive symptoms.

Specifically, maternal and paternal closeness were both negatively associated with sexual minority status and were also negatively associated with depressive symptoms, indicating that though being a sexual minority may lower ties with both parents, maintaining some level of closeness with them may act as a buffer against poor mental health. Additionally, sexual minority status also predicted greater parental financial giving; however, this giving ironically seemed to be associated with poorer mental health. None of the other intergenerational relationships variables mediated the association between sexual minority status and depressive symptoms (see Table 3.3 for coefficients). Model fit indices by and large indicated good model fit.

[Table 3.3 here]

The second mediation model analysis tested the direct effect of sexual minority status on self-reported health and the indirect effects of intergenerational relationships variables while controlling for demographic and family characteristics (see Figure 3.2).

[Figure 3.2 here]

The analysis yielded a significant total effect (coef. = .15, SE = .03, p < .001). The direct effect was significant, with sexual minority status predicting a poorer self-rated health. Furthermore, the indirect paths of maternal closeness (Sobel $Z = 5.27$, SE = 0.003, $p < .001$), paternal closeness (Sobel $Z = 5.07$, SE = 0.004 , $p < .001$), and parental giving (Sobel $Z = 4.33$, SE = 0.003, $p < .001$) were significant, indicating these variables partially mediated the

relationship between sexual minority status and self-reported health. Furthermore, these variables all mediated positively in their total indirect effects, indicating they were associated with increased poor physical health symptoms. Specifically, maternal and paternal closeness were negatively associated with sexual minority status and was also negatively associated with self-reported health; indicating that, similar to the first model, though being a sexual minority may lower ties with parents, maintaining some level of maternal closeness may act as a buffer against poor self-rated health. Additionally, the same pattern with parental financial giving from the first model replicated here, with sexual minority adult children receiving more financial assistance but then having this assistance associated with poorer self-reported health. None of the other intergenerational relationships variables mediated the association between sexual minority status and self-reported health (see Table 3.4 for coefficients). Model fit indices by and large indicated good model fit.

[Table 3.4 here]

Supplementary Analyses

As supplementary analyses, I replicated the same mediation analyses using data from previous wave of the Add Health survey. If the intergenerational relationship indicators from a previous point in time demonstrate a mediating effect on physical and mental health at a later point in time, a pseudo-causal argument can be proposed for this effect. Thus, the two mediation analyses presented in the results section above were mirrored in these supplementary analyses, with the key difference being that the mediating intergenerational relationships variables are from Wave 3 of the survey, when the respondents' age range fell between 18-24, which

represents the emerging adulthood. It is worth noting that the survey question regarding adult children providing money to their parents was not asked in this wave, possibly due the fact that children in the age band are likely not in a financial position yet to be giving money to their parents; thus, this mediator was omitted from the model, resulting in five intergenerational relationships mediators instead of six. All else aspects of the analysis remained the same from the mediation analyses in Chapter 4.

[Appendix Table 3.1 here]

The first mediation analysis looked at the mediating effect of maternal/paternal closeness, maternal/paternal contact, and parental giving on the relationship between sexual minority status and depressive symptoms. The total effect in the model was significant (coef. = 1.08, SE = .07, $p < .001$), as was the direct effect of sexual minority status on depressive symptoms (see Appendix Table 3.1). As for indirect effects, all were significant except for maternal contact, indicating partial mediating effects from the parental relationship variables. Patterns largely mirrored those of the primary analyses in Chapter 4.

[Appendix Table 3.2 here]

The second mediation analysis looked at the mediating effect of maternal/paternal closeness, maternal/paternal contact, and parental giving on the relationship between sexual minority status and self-rated health. The total effect in the model was significant (coef. = 0.15, SE = .03, $p < .001$), as was the direct effect of sexual minority status on self-rated health (see Appendix Table 3.2). As for indirect effects, all were significant except for maternal closeness,

indicating partial mediating effects from the intergenerational relationships variables. Patterns differed slightly from those of the primary analyses, where maternal closeness was a significant mediator, but maternal and paternal contact were not.

Overall, like the primary analyses above, these supplemental analyses reveal a pattern of parental variables being associated with mental and physical health outcomes. Namely, parental giving positively mediated the effect of sexual orientation on both outcomes. However, some differences emerged. In the case of these analyses, paternal contact and closeness seemed to display a more consistent effect across the two outcomes compared to maternal contact and closeness. This lends some evidence toward a potential quasi-causal relationship between these predictor variables and the health outcomes of interest.

Discussion and Conclusion

The present study explored the mediating role of intergenerational relationships in the association between sexual minority status and two health outcomes. Using Wave V of the Add Health survey, both mental (i.e., depressive symptoms) and physical (i.e., self-reported general health) health outcomes were examined to identify possible mediation effects from maternal/paternal closeness, maternal/paternal contact, and the two directions of parent-child monetary help. First of all, the results replicated well-known findings that sexual minority status is associated with negative mental and physical health (Meyer & Northridge, 2017), though the association with poor mental health was notably stronger than the one with physical health. Furthermore, some indicators of intergenerational relationships were identified as mediators in the relationship between sexual minority status and poor mental and physical

health outcomes. Nevertheless, it was evident that the patterns and significance among these variables varied.

Both mediation analyses on depressive symptoms and self-rated health revealed highly similar patterns. In both cases of depressive symptoms and self-rated health outcomes, only maternal/paternal closeness and parents' financial giving partially mediated the relationship between sexual minority status and the two health scores. Specifically, both maternal/paternal closeness was negatively associated with sexual minority status, consistent with finding in the literature that being a sexual minority may strain emotional bonds between the child and parents, particularly on the part of the father (van Bergen et al., 2020). On the other hand, having a positive relationship with one's parents was associated with lower depression symptom symptoms and better self-rated health, suggesting a potential causal pathway in which being a sexual minority could deteriorate one's parental closeness, which, in turn, negatively impacts one's mental and physical health. Of particular interest was the mediating effect of parental giving, which was positively associated with both sexual minority status and higher depressive symptoms and poorer self-rated health. It could be that parents were more inclined to support adult children facing mental and physical health hardships compared to those who were not.

There are some limitations to the current study. First, the current study employed a binary classification of heterosexual vs. sexual minority categories for the sake of simplicity and ease of interpretation, considering that the models have six mediating variables. However, given research indicating that bisexuals may experience different rates of physical and mental illness compared to gay men or lesbians (Dyar et al., 2019), it may be worthwhile for future research to specifically investigate this subpopulation. Future work should try to utilize

datasets that allow for more multidimensional operationalizations of sexual minority status. Second, the outcome variables, depressive symptoms and general health are based on self-report. Future studies can investigate whether similar results hold when employing diagnostic and clinical assessments of mental and physical health. Third, it should be noted that it is difficult to infer causal relationships, because the survey dataset did not inquire time point or time order of events. For instance, the analyses in the study cannot establish whether parental giving *occurred in response to* or *brought about* depressive symptoms. Thus, the present effects are correlational by nature and must be interpreted as such. To address this weakness, supplemental mediation analyses were conducted where intergenerational relationship variables from a previous wave were entered into the model (see Table S4 and S5 for these results). Though clearly not to the level of randomized control design, which would be virtually impossible for the current research questions, the time lag effect enables us to infer pseudo-causality given that the predictor variable precedes the outcome in time. Indeed, these previously measured intergenerational relationship variables were largely still significant mediators, indicating they may potentially play a causal role in the two health outcomes.

The current work sheds light on the complexity of the pathway between sexual minority status and health in midlife. Specifically, some domains of intergenerational relationships do indeed mediate the relationship between sexual minority status and mental/physical health outcomes in similar ways, with parental emotional closeness and financial giving playing a role in both. Thus, this research highlights the important but domain-specific effects of intergenerational relationships on sexual minority health. Moreover, regarding the counter-intuitive findings on financial giving from parents, future research can look more specifically at what kinds of parental giving are most effective for maintaining physical/mental health and

under what circumstances. These results also could inform health interventions for sexual minority individuals and communities by seeking to involve parents whenever possible or appropriate as a supporting role. Ultimately, this work sheds further light on the topics of public health and sexual minority family studies and moves forward our knowledge in both fields.

Chapter 5

Conclusion

The three empirical studies in this doctoral dissertation explored the overarching topics of intergenerational relationships, health, and well-being of sexual minority adult children from young adulthood to midlife, each with shared but distinctive focal points. These studies are important for several reasons. First and foremost, studying sexual minority individuals within family contexts, especially in the intergenerational relationship contexts, helps us gain important insight into their unique experiences, challenges, and dynamics. Intergenerational relationships between parents and their children are vital and enduring connections throughout an individual's life, influencing individuals' emotional and material support networks, well-being, and overall quality of life (Fingerman et al., 2012). By investigating the intergenerational relationships of sexual minority adult children in comparison with heterosexual adult children, we can discern whether sexual orientation impacts the quality and dynamics of these relationships. This knowledge is crucial not only for advancing understanding in the fields but also for developing interventions and support systems that address the unique needs of sexual minority individuals and their families.

As such, the first study reported in Chapter 2 and second study reported in Chapter 3 primarily focused on potential differences in emotional closeness and financial assistance, respectively, among various aspects of intergenerational relationships whereas the third study reported in Chapter 4 focused on health outcomes in connection with multiple dimensions of intergenerational relationships. Emotional closeness forms the foundation for nurturing strong and meaningful relationships with long-lasting positive impacts between children and parents (Fingerman et al., 2012). Financial assistance provided by parents to children, encompassing

support for education, housing, and other expenses, can contribute to financial security and transfer wealth and assets over generations (Silverstein et al., 2002). Using three waves of the National Longitudinal Study of Adolescent to Adult Health (Add Health) data (2001-2018), the first study reported in Chapter 2 longitudinally examined the trajectories of perceived maternal and paternal closeness among sexual minority and heterosexual adult children, identifying possible gaps in emotional closeness from young adulthood to midlife. Drawing data from the Add Health Parent Study (2015-2017), the second study reported in Chapter 3 investigated whether parental financial assistance to adult children differed based on adult children's sexual minority status, and which type of financial assistance made a difference and how theoretical explanations of intergenerational financial help can explain the difference. The third study reported in Chapter 4, utilizing Wave V of the National Longitudinal Study of Adolescent to Adult Health (Add Health) data (2016 - 2018), examined how the different dimensions of intergenerational relationships, such as maternal/paternal closeness, maternal/paternal contact, and parent's financial giving and receiving, mediated the association between sexual orientation and adult children's physical and mental health entering midlife.

Taken together, these three studies present a complex story of how the intergenerational family context shapes the health and well-being of sexual minority individuals. According to the findings from the first study reported in Chapter 2, sexual minority individuals tend to perceive less emotional closeness to both mothers and fathers compared to their heterosexual counterparts. This pattern emerges in early adulthood and persists throughout life. The second study reported in Chapter 3 revealed that sexual minority adult children tend to receive more financial assistance from their parents for educational costs. However, the third study reported in Chapter 4 found that the financial assistance from their parents does not necessarily translate

into health benefits in midlife for sexual minority adult children. Rather, poorer quality in various domains of intergenerational relationships between sexual minority adult children and their parents mediated the associations between sexual minority status and physical and mental health outcomes. To be specific, the first study reported in Chapter 2 examined how intergenerational relationships between adult children and their older parents evolve over time, focusing on the emotional closeness gap based on sexual minority status. Employing two latent growth curve models, the study aimed to capture the changing dynamics of intergenerational relationships across various life stages. The study yielded two main findings. First, the study established a significant association between sexual minority status and lower emotional closeness to both mothers and fathers during early adulthood. Previous research comparing intergenerational ties of sexual minority and heterosexual adult children has indicated weaker connections between sexual minority individuals and their parents (Hank & Salzburger, 2015; Fisher & Kalmijn, 2020; Leal et al., 2020; Reczek et al., 2020). Consistent with these prior studies, the current study provided further evidence that sexual minority young adults are more likely to experience weaker intergenerational ties. Second, the study revealed that sexual minority status did not significantly impact the trajectory of maternal and paternal closeness from early adulthood to midlife. Both sexual minority and heterosexual adult children experienced a decline in emotional closeness with their parents as they aged, without any distinct improvements or deteriorations specifically related to sexual minority status.

Overall, these findings from the first study reported in Chapter 2 suggest that sexual minority adult children experience poorer intergenerational relationships compared to their heterosexual counterparts, and this disparity persists throughout adulthood without significant changes over time. Given the crucial role parents play in providing support and resources to

their children, the sustained discrepancy in intergenerational ties among sexual minority adult children implies their ongoing vulnerability throughout their lives. This vulnerability may contribute to health and well-being disparities, as research consistently demonstrates the positive association between close parent-child relationships and mental and physical health (Umberson and Thomeer, 2020). Thus, the key finding that poorer intergenerational ties experienced by sexual minority adult children in early adulthood extend into later stages underscores the importance of early interventions. Implementing a diverse range of programs and practices targeting sexual minority families can help address vulnerabilities and promote resilience within these relationships, benefiting sexual minority adult children and their parents.

The second study reported in Chapter 3 investigated the impact of sexual minority status on parental financial assistance, specifically examining general assistance as well as assistance in education, housing, and other domains. In doing so, the study explored two theoretical perspectives: the altruistic motive, which suggests that sexual minority adult children might receive more financial help due to their perceived greater need, and the exchange motive, which posits that sexual minority adult children might receive more assistance because they are more likely to reciprocate support to their parents. The results revealed distinct patterns depending on the specific types of financial assistance, indicating that a one-size-fits-all explanation was not applicable. In terms of general financial assistance across all types, the study revealed that sexual minority adult children were not more or less likely to receive financial assistance compared to their heterosexual counterparts. That is, the sexual minority status of adult children was not significantly associated with the likelihood of receiving parental financial assistance. However, concerning educational support, being a sexual

minority appeared advantageous, as parents were more inclined to provide financial support for the education of their sexual minority adult children. In contrast, the study found that sexual minority status did not have a statistically significant effect on financial assistance for housing or other purposes. Therefore, the study conclusion is that the impact of the sexual minority status of adult children on parental financial assistance is type-specific and does not universally align with either the altruistic or exchange motives.

The third study reported in Chapter 4 focused on the mediating role of intergenerational relationships on the association between sexual orientation and two mental and physical health outcomes: depressive symptoms and self-rated general health. The study examined six moderators related to various domains of intergenerational relationships, including maternal and paternal closeness, maternal and paternal contact, and parent-child monetary assistance. The findings reaffirmed the well-established association between sexual minority status and negative mental and physical health outcomes, with a particularly robust connection to mental health. Moreover, certain indicators of intergenerational relationships were identified as mediators in the relationship between sexual minority status and adverse mental and physical health outcomes, although the patterns varied depending on the specific mediators. Both mediation analyses on depressive symptoms and self-rated health revealed highly similar patterns. In both cases of depressive symptoms and self-rated health outcomes, only maternal/paternal closeness and parents' financial giving partially mediated the relationship between sexual minority status and the two health scores. Specifically, both maternal/paternal closeness was negatively associated with sexual minority status. On the other hand, having a positive relationship with one's parents was associated with lower depression symptom symptoms and better self-rated health, suggesting a potential causal pathway in which being a

sexual minority could deteriorate one's parental closeness, which, in turn, negatively impacts one's mental and physical health. Of particular interest was the mediating effect of parental giving, which was positively associated with both sexual minority status and higher depressive symptoms and poorer self-rated health. It could be that parents were more inclined to support adult children facing mental and physical health hardships compared to those who were not.

The three studies are well connected to the life course framework to explore how individual lives unfold over time by emphasizing the importance of the interconnectedness of various life events and experiences in shaping an individual's trajectory from birth to death (Elder, 1998). Specifically, the studies are relevant to the chain-of-risk model that focuses on how certain early life events or conditions can set in motion a chain of events or circumstances that increase the likelihood of negative outcomes later in life. It suggests that risks accumulate over time, and the consequences of one risk factor can lead to the emergence of additional risks, creating a chain-like pattern of disadvantage (Kuh & Shlomo, 2004). In the current study context, the lower emotional closeness experienced by sexual minority adult children during early adulthood can be seen as an early risk factor in the chain. This initial disadvantage may influence the accumulation of challenges over time. On the other hand, the type-specific advantage in educational assistance for sexual minority individuals could be considered a moderating factor in the chain. Support in specific domains may interrupt the chain of risk, potentially influencing subsequent life course trajectories. Furthermore, the mediating role of intergenerational relationships in health outcomes provides a mechanism through which early disparities in emotional closeness may lead to cumulative health risks. The quality of relationships acts as a mediator, influencing the trajectory of mental and physical health outcomes. In summary, this dissertation overall contributes to understanding the chain of risk

for sexual minority individuals within the life course framework by highlighting persistent disparities in intergenerational relationships, the role of financial assistance, and the mediating impacts of these relationships on health outcomes across the life course.

The limitations of the three studies, at the same time, guide future research on sexual orientation, family relationships, and physical and mental well-being of sexual minority populations. First, future research needs to pay attention to diverse sexual identities, including categories such as bisexual and 'mostly heterosexual', which are not easily captured by the binary scheme of sexual minority vs. heterosexual. Existing research suggest that individuals who identify as bisexual or those who fall outside the exclusive heterosexual or homosexual categories may encounter unique challenges in their family relationships and health (Scherrer et al., 2015; Dyar et al., 2019; Jorm et al., 2002; Matsuno & Budge, 2017; Ross et al., 2018). Compared to individuals who identify as exclusively heterosexual or exclusively homosexual, bisexual individuals may face distinct issues related to biphobia, stereotypes, and misconceptions. Navigating disclosure and achieving acceptance within family relationships can be more complex, potentially impacting the quality of these relationships (Scherrer et al., 2015). Several studies have indicated that bisexual individuals may experience more severe mental and physical disadvantages, such as depression and anxiety, compared to the general sexual minority population (Dyar et al., 2019; Jorm et al., 2002; Matsuno & Budge, 2017; Ross et al., 2018). Furthermore, research on individuals who fall into the 'mostly heterosexual' category suggests some disadvantages in their family relationships and health (Vrangalova & Savin-Williams, 2014; McCabe et al, 2009). Therefore, it is crucial for future research to explore these diverse but understudied sub-populations within the sexual minority community and employ datasets that allow for more nuanced measures of sexual minority status.

Second, future studies need to pay attention to the issues of intersectionality in sexual minority family and health studies. Intersectionality scholars have highlighted the interlocking systems of race/ethnicity, gender, sexual orientation, religiosity, and many other social locations to fully understand the complexity of societal power relations and inter-categorical differences (Crenshaw 1989). Thus, family relationships and health research applying the intersectionality approach has primarily explored how multiple marginalized identities contribute to inequalities in these realms (Allen, 2017; Few-Demo & Allen, 2020; van Eeden-Moorefield, 2018). In the realm of family relationships, Black sexual minority individuals, for example, may feel less supported and more disfranchised within their families due to historical contexts, such as traditions from religion-based Black community (Constantine-Simms 2000; Ward 2005). In addition to prevailing homophobia in mainstream society, Black sexual minority individuals may face additional and the threat of ostracism, placing them in a more precarious position within Black families, which are expected to serve as valuable resources in buffering against daily life racism (LaSala & Frierson, 2012). Hispanic families, historically influenced by Catholic culture, have been oftentimes associated with anti-LGBTQ+ attitudes within families (Acosta, 2013; Schmitz et al., 2020). The cultural value of familismo may also impose heterosexist norms on family members (Pastrana, 2015; Muñoz-Laboy, 2008). Indeed, a comparative study examining White and Hispanic sexual minorities found that Hispanic individuals reported higher levels of parental rejection (Ryan et al., 2009). Similarly, the study of Richter et al. (2017) revealed significant racial/ethnic disparities in parental rejection stemming from homonegativity. Concerning health, research indicates that sexual minority individuals belonging to multiple marginalized groups, such as being both sexual and racial/ethnic minorities, may face intersecting forms of discrimination contributing to poorer

health outcomes (Denise, 2014). Specifically, Black sexual minorities tend to experience worse health outcomes compared to their White counterparts within the sexual minority population (Choi et al., 2021). Thus, recognizing the complexities and intersections between these identities is essential for a deeper understanding of sexual minority family and health research.

Third, future studies can pay further attention to gender aspects in the sexual minority population. Consistent with prior studies (Evans & Silva, 2020; Gates, 2014; England & Caudillo, 2016), the descriptive statistics of the three studies revealed a notable predominance of females in the sexual minority group; the number of female sexual minority individuals exceeded male sexual minority individuals by more than twice the number. The social system of gender shapes how individuals experience sexuality and identify themselves (Evans, 2020). England et al. (2016) highlighted that, because heterosexuality and homophobia are more deeply rooted in masculinity than to femininity, men tend to be more resistant to identifying as anything other than exclusively heterosexual compared to women. Women may also have more incentive and flexibility in challenging heterosexist gender norms, as they occupy a lower position in the gender hierarchy than men (England et al., 2016). From a psychological perspective, Diamond (2008) posits that female sexuality tends to be more malleable, and women often experience greater variability and fluidity in their attractions, desires, and behaviors, making them more open to embracing a non-heterosexual identity. Future studies can investigate how such a female-dominant demographic may influence family relationships and health in the sexual minority population.

Fourth, there is a need for more studies on the health and familial experiences of sexual minority populations across different life stages, especially in mid to older life. Presently, the academic and public attention to sexual minority populations has been predominantly centered

around younger individuals. This emphasis is understandable as adolescence and young adulthood are pivotal periods of identity formation and exploration, including sexual orientation and gender identity (Bishop et al., 2020). As individuals in these age groups navigate their identities, their experiences, challenges, and health issues often become focus points for research and public attention. Moreover, the visibility and recognition of sexual minority populations have historically increased only in recent decades, with legal and policy changes frequently spotlighting the needs of younger generations who advocate for their rights at the forefront of the societal shifts. However, a significant number of older LGB adults have concealed or hidden their sexual orientation for a considerable portion of their lives, leading to their experiences and needs remaining largely unexplored and unrecognized. Our academic understanding of these populations is only beginning to emerge (Fredriksen-Goldsen, 2010). Studying aging sexual minority populations from a life course perspective is important because it allows researchers to examine the cumulative effects of minority stress, discrimination, resilience, and other factors across different stages of life (Choi et al., 2016). This approach provides insights into the unique challenges and strengths that sexual minority individuals may face as they age, informing the development of targeted interventions and policies to support their well-being.

Indeed, the scholarship of family relationships and health and well-being of the sexual minority population is rapidly expanding across social science fields, including sociology, psychology, family studies, and health studies. There is ample opportunity for further exploration and advancement in these areas. This can be achieved by not only deepening our existing knowledge on the established topics but also by expanding knowledge on lesser-known topics. These include delving into diverse sexual minority identities, intersectional

approach that consider sexual orientation and other social locations such as race/ethnicity and gender, and aging sexual minority populations in the mid to older stages of life.

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Tables

Table 1.1. Descriptive Statistics for Variables used in Analysis of Trajectories of Parental Closeness by Sexual Minority Status, The National Survey of Adolescent to Adult Health

	Full Sample (n=14,575)	Heterosexual (n=13,178)	Sexual Minority (n=1,397)
	Prop./Mean (SD)	Prop./Mean (SD)	Prop./Mean (SD)
Parental Closeness			
Mothers			
Wave III [a]	4.43 (.02)	4.45 (.02)	4.24 (.05)
Wave IV	4.48 (.02)	4.49 (.02)	4.42 (.05)
Wave V	4.05 (.03)	4.07 (.03)	3.92 (.06)
Fathers			
Wave III [a]	4.14 (.02)	4.16 (.02)	3.89 (.06)
Wave IV [a]	4.20 (.02)	4.23 (.02)	3.93 (.06)
Wave V [a]	3.80 (.03)	3.83 (.03)	3.51 (.07)
Sex			
Female [a]	49.63	47.59	68.39
Race/Ethnicity			
White	66.21	66.02	67.90
Black	15.58	15.66	14.83
Hispanic	11.65	11.65	11.64
Other	6.56	6.67	5.63
Age	21.80 (.12)	21.81 (.12)	21.73 (.15)
Child Education	13.15 (.09)	13.16 (.08)	13.08 (.14)
Mother Education	5.36 (.10)	5.35 (.10)	5.50 (.19)
Father Education	5.52 (.12)	5.51 (.11)	5.66 (.23)
Family Structure			
Single/Step/Other	42.56	42.00	47.71
Number of Siblings	2.77 (.05)	2.77 (.06)	2.42 (.11)
Partnered			
Wave III	18.89	19.19	16.08
Wave IV	64.33	64.77	60.24
Wave V	72.70	72.95	70.45
Number of Children			
Wave III	0.21 (0.01)	0.21 (0.01)	0.19 (0.02)
Wave IV	0.91 (0.03)	0.92 (0.03)	0.80 (0.07)
Wave V [a]	1.54 (0.03)	1.57 (0.03)	1.27 (0.07)

Note. Superscript a indicates a statistically significant difference between the heterosexual and sexual minority groups at .05.

Table 1.2. Standardized Parameter Estimates for Unconditional Latent Growth Curves Models, The National Survey of Adolescent to Adult Health (N = 14,575)

	Mother		Father	
	B (CI)	SE	**B** (CI)	SE
Intercept (mean)	4.51 (4.48, 4.54)***	.02	4.26 (4.23, 4.29)***	.03
Slope (mean)	-.19 (-.21, -.17)***	.01	-.23 (-.25, -.21)***	.02

Note: * p< .05 **p< .01 ***p< .001
Model fit indices for the mother model: RMSEA = 0.072, CFI = 0.848, TLI = 0.848
Model fit indices for the father model: RMSEA = 0.067, CFI = 0.899, TLI = 0.899

Table 1.3. Standardized Parameter Estimates for Conditional Latent Growth Curves Models, The National Survey of Adolescent to Adult Health

	Mother		Father	
	B (CI)	SE	B (CI)	SE
Intercept Equation				
Sexual Minority Status	-.21 (-.29, -.14)***	.04	-.32 (-.42, -.22***	.05
Sex				
Female	-.02 (-.07, .03)	.03	-.10 (-.16, -.03)**	.03
Race/Ethnicity				
White (ref.)				
Black	.13 (.07, .19)***	.03	-.07 (-.15, .00)	.04
Hispanic	-.00 (-.06, .06)	.03	-.03 (-.10, .04)	.03
Other	-.22 (-.33, -.12)***	.05	-.33 (-.46, -.20) ***	.03
Age	.00 (-.01, .02)	.01	.02 (-.00, .03)	.01
Child Education	-.01 (-.00, .02)	.01	.02 (.00, .04) *	.01
Mother Education	-.01 (-.01, .01)	.01	-.01 (-.03, .01)	.01
Father Education	-.01 (-.01, -.01)	.01	-.00 (-.03, .01)	.01
Family Structure				
Two Biological Parents (ref.)				
Single/Step/Other Family	-.06 (-.09, -.04)***	.01	-.13 (-.17, -.10)***	.02
Number of Siblings	- .00 (-.02, 01)	.01	-.03 (-.05, -.02)***	.01
Slope Equation				
Sexual Minority Status	.04 (-.01, .10)	.03	.02 (-.03, .07)	.03
Sex				
Female	.03 (-.01, .06)	.02	.02 (-.01, .05)	.02
Race/Ethnicity				
White (ref.)				
Black	.02 (-.02, .06)	.02	.07 (.02, .11)**	.02
Hispanic	.02 (-.02, .08)	.02	.06 (.01, .10)*	.02
Other	.05 (-.02, .12)	.03	.00 (-.04, .05)	.02
Age	-.01 (-.02, -.00)*	.01	-.02 (-.03, -.01)**	.01
Child Education	.00 (-.00, .01)	.00	-.01 (-.02, .00)	.00
Mother Education	-.00 (-.02, .01)	.01	.01 (-.00, .02)	.00
Father Education	.01 (-.00, .01)	.00	.00 (-.01, .01)	.00
Family Structure				
Two Biological Parents (ref.)				

Single/Step/Other Family	-.01 (-.03, .01)	.01	- .01 (-.10, -.03) ***	.02
Number of Siblings	-.01 (-.01, -.00)	.00	.00 (-.00, .01)	.00
Time-Varying Covariates				
Partnered W3	-.02 (-.09, .04)	.03	.04 (-.01, .1)	.03
Partnered W4	-.10 (-.15, -.06)***	.02	-.18 (-.21, -.14)***	.02
Partnered W5	-.24 (-.30, -.18)***	.03	-.09 (-.14, -.04)**	.03
Number of Children W3	-.05 (-.13, .02)	.04	-.01 (-.07, .04)	.03
Number of Children W4	-.02 (-.04, -.01)	.01	-.01 (-.02, .01)	.01
Number of Children W5	-.05 (-.08, -.02)***	.01	-.00 (-.02, .02)	.00

Note: * p< .05 **p< .01 ***p< .001
Model fit indices for the mother model: RMSEA = 0.029, CFI = 0.926, TLI = 0.914
Model fit indices for the father model: RMSEA = 0.021, CFI = 0.973, CFI = 0.939

Appendix Table 1.1. Standardized Parameter Estimates for Latent Growth Curves Models, The National Survey of Adolescent to Adult Health (n = 14,575)

	Mother		Father	
	B (CI)	SE	**B (CI)**	SE
Intercept Equation				
Sexual Minority Status	-.24 (-.29, -.19)***	.03	-.32 (-.42, -.22)***	.05
Sex				
Female	-.01 (-.05, .02)	.02	-.10 ** (-.16, -.03)	.03
Race/Ethnicity				
White (ref.)				
Black	.08 (.05, .11)***	.02	-.06 (-.13, .00)	.04
Hispanic	-.00 (-.04, .03)	.02	-.03 (-.10, .04)	.03
Other	-.18 (-.24, -.12)***	.03	-.33 (-.46, -.20)***	.03
Age	.00 (-.01, .01)	.00	.02 (-.00, .03)	.01
Child Education	.01 (.01, .02)**	.00	.02 (-.00, .04)	.01
Mother Education	-.01 (-.01, .01)	.01	-.01 (-.03, .01)	.01
Father Education	-.01 (-.01, -.01)	.01	-.00 (-.03, .01)	.01
Family Structure				
Two Biological Parents (ref.)				
Single/Step/Other Family	- .14 (-.18, -.11)***	.02	-.43 (-.50, -.36)***	.04
Number of Siblings	- .00 (-.00, 01)	.00	-.02 (-.04, -.02)**	.01
Slope Equation				
Sexual Minority Status	.04 (.00, .08)	.03	.01 (-.06, .07)	.03
Sex				
Female	.03 (.00, .06)*	.01	.01 (-.03, .06)	.02
Race/Ethnicity				
White (ref.)				
Black	.03 (.01, .05)*	.01	.06 (.01, .11)*	.02
Hispanic	.02 (.00, .06)*	.01	.01 (-.02, .04)	.02
Other	.01 (-.03, .06)	.02	.06 (-.02, .13)	.04
Age	-.01 (-.02, -.00)*	.01	-.02 (-.04, -.01)**	.01
Child Education	.00 (-.00, .01)	.00	-.01 (-.02, .00)	.00
Mother Education	-.00 (-.02, .01)	.01	.01 (-.00, .02)	.00
Father Education	.01 (-.00, .01)	.00	.00 (-.01, .01)	.00
Family Structure				
Two Biological Parents (ref.)				

Single/Step/Other Family	-.03 (-.05, .00)*	.01	.03 (-.02, .08)	.02
Number of Siblings	-.01 (-.01, -.00)*	.00	.01 (-.00, .02)	.01
Time-Varying Covariates				
Partnered W3	.01 (-.03, .05)	.02	.03 (-.04, .11)	.04
Partnered W4	-.11 (-.14, -.09)***	.01	-.17 (-.23, -.11)***	.03
Partnered W5	-.21 (-.25, -.16)***	.02	-.16 (-.23, -.07)***	.04
Number of Children W3	-.04 (-.08, .00)	.02	-.01 (-.04, .11)	.02
Number of Children W4	-.01 (-.02, .00)	.01	-.01 (-.02, .01)	.01
Number of Children W5	-.04 (-.06, -.02)***	.01	-.02 (-.04, .01)	.01

Note: Numbers are weighted and adjusted for Add Health's complex survey design.
* p< .05 **p< .01 ***p< .001

Appendix Table 1.2. Descriptive Statistics for Variables used in Analysis of Trajectories of Parental Closeness by Sexual Minority Status, The National Survey of Adolescent to Adult Health (N = 15,133)

	Full Sample (n=15,133)	Heterosexual (n=13,178)	Sexual Minority (n=1,397)	Other/Missing (n=558)
	Prop./Mean (SD)	Prop./Mean (SD)	Prop./Mean (SD)	Prop./Mean (SD)
Parental Closeness				
Mothers				
Wave III	4.43 (.01)	4.45 (.02)	4.24 (.05)	4.43 (.08)
Wave IV	4.51 (.01)	4.49 (.02)	4.42 (.05)	4.54 (.07)
Wave V	4.10 (.02)	4.07 (.03)	3.92 (.06)	4.15 (.09)
Fathers				
Wave III	4.14 (.02)	4.16 (.02)	3.89 (.06)	4.20 (.10)
Wave IV	4.20 (.02)	4.23 (.02)	3.93 (.06)	4.23 (.11)
Wave V	3.81 (.03)	3.83 (.03)	3.51 (.07)	3.92 (.13)
Sex				
Female	49.62	47.59	68.39	49.37
Race/Ethnicity				
White [b]	65.53	66.02	67.90	43.59
Black [b]	15.84	15.66	14.83	24.33
Hispanic [b]	12.07	11.65	11.64	25.70
Other	6.56	6.67	5.63	6.38
Age	21.81 (.12)	21.81 (.12)	21.73 (.15)	22.17 (.22)
Child Education [b]	13.13 (.09)	13.16 (.08)	13.08 (.14)	12.31 (.16)
Mother Education [b]	5.33 (.10)	5.35 (.10)	5.50 (.19)	4.22 (.29)
Father Education [b]	5.47 (.12)	5.51 (.11)	5.66 (.23)	3.82 (.37)
Family Structure				
Single/Step/Other [b]	42.46	42.00	47.71	39.14
Number of Siblings	2.77 (.05)	2.77 (.06)	2.42 (.11)	2.94 (.22)
Partnered				
Wave III [b]	18.86	19.19	16.08	16.81
Wave IV [b]	64.01	64.77	60.24	53.59
Wave V [b]	72.13	72.95	70.45	50.77
Number of Children				
Wave III	0.21 (0.01)	0.21 (0.01)	0.19 (0.02)	0.22 (.05)
Wave IV	0.91 (0.03)	0.92 (0.03)	0.80 (0.07)	0.92 (.13)
Wave V [b]	1.52 (0.03)	1.57 (0.03)	1.27 (0.07)	1.01 (.12)

Note. Superscript b indicates a statistically significant difference between the full sample and the missing/other group at .05.

Appendix Table 1.3. Standardized Parameter Estimates for Latent Growth Curves Models, The National Survey of Adolescent to Adult Health (n = 15,133)

	Mother		Father	
	B (CI)	SE	**B (CI)**	SE
Intercept Equation				
Sexual Minority Status				
Heterosexual (ref.)				
Sexual Minority	-.20 (-.26, -.15)***	.03	-.22 (-.28, -.16)***	.03
Missing/Other	.07 (-.02, -.16)	.05	.09 (.00, .19)	.05
Sex				
Female	-.03 (-.06, .01)	.02	-.14 (-.17, -.10)***	.02
Race/Ethnicity				
White (ref.)				
Black	.08 (.05, .11) ***	.02	-.02 (-.05, .01)	.02
Hispanic	-.01 (-.04, .03)	.02	-.04 (-.08, - .01)*	.02
Other	- .17 (-.22, -.11)***	.03	-.19 (-.25, -.13)***	.03
Age	.00 (-.01, .02)	.01	.01 (.00, .02)**	.01
Child Education	.02 (.00, .03)**	.00	.02 (.00, .03)**	.01
Mother Education	-.00 (-.01, .01)	.00	-.01 (-.02, .00)	.01
Father Education	-.01 (-.02, -.00)*	.01	-.00 (-.01, .01)	.01
Family Structure				
Two Biological Parents (ref.)				
Single/Step/Other Family	- .04 (-.06,-.03)***	.01	-.13 (-.14, -.11)***	.01
Number of Siblings	- .00 (-.01, 01)	.01	-.02 (-.03, -.01)***	.01

Slope Equation				
Sexual Minority Status				
Heterosexual (ref.)				
Sexual Minority	.04 (-.00, .08)	.02	.00 (-.04, .04)	.02
Missing/Other	.00 (-.07, .08)	.03	- .01 (-.08, .06)	.04
Sex				
Female	.03 (.01, .06)	.01	.04 (.01, .06)**	.01
Race/Ethnicity				
White (ref.)				
Black	.04 (.02, .06)**	.01	.05 (.03, .08)***	.01
Hispanic	.03 (.00, .06)*	.01	.02 (-.00, .05)	.01
Other	.02 (-.03, .06)	.02	.02 (-.02, .07)	.02
Age	-.01 (-.02, -.00)*	.00	-.02 (-.03, -.01)***	.00
Child Education	-.00 (-.01, .00)	.00	.00 (-.01, .01)	.00
Mother Education	.00 (-.00, .01)	.00	.01 (-.00, .02)	.00
Father Education	.01 (-.00, .01)	.00	.00 (-.01, .01)	.00
Family Structure				
Two Biological Parents (ref.)				
Single/Step/Other Family	-.02 (-.03, -.00)*	.01	- .00 (-.01, .04)	.00
Number of Siblings	-.01 (-.01, -.00) *	.00	.01 (-.01, .02)	.01
Time-Varying Covariates				
Partnered W3	.01 (-.03, .05)	.02	.04 (-.04, .12)	.04
Partnered W4	.12 (.09, .14)***	.01	.17 (.11, .23)***	.03
Partnered W5	-.21 (-.25, -.16)***	.02	-.15 (-.23, -.08)**	.04
Number of Children W3	-.04 (-.09, .00)	.02	-.08 (-.16, .01)	.04
Number of Children W4	-.01 (-.02, .01)	.01	-.01 (-.04, .02)	.01
Number of Children W5	-.04 (-.05, -.02)***	.01	-.01(-.04, .01)	.01

Note: * p< .05 **p< .01 ***p< .001

Table 2.1. Descriptive Statistics for Variables used in Analysis of Parents' Financial Help by Sexual Minority Status, The National Survey of Adolescent to Adult Health Parent Study

	Full Sample (N = 2,082)	Heterosexual (N = 1,807)	Sexual Minority (N = 275)
	Prop./Mean (SD)	Prop./Mean (SD)	Prop./Mean (SD)
Any Help [a]	74.06	73.46	80.36
Education Help [a]	62.72	61.15	75.22
Housing Help	14.89	14.87	15.04
Other Help [a]	61.19	62.37	53.45
Controls			
Child Sex [a]			
Female	56.05	55.49	81.41
Child Race			
White [a]	62.71	62.42	64.89
Black [a]	18.00	18.37	15.37
Hispanic	11.84	10.81	12.04
Other	7.44	7.40	7.78
Child Age	21.48 (.01)	21.46 (.01)	21.60 (.03)
Parent Age	61.84 (.03)	61.74 (.03)	62.69 (.09)
Parent Education [a]	3.00	2.97	3.20
Parent Income	8.06	8.05	8.11
Parent Assets	5.68	5.68	5.69
Family Structure			
Single/Step/Other Family [a]	39.02	38.55	42.38
Number of Siblings [a]	2.79	2.81	2.65
Child Partnership [a]	58.53	59.47	49.53
Child Distance [a]	4.10 (.01)	4.06 (.01)	4.41 (.03)
Altruistic Motives			
Child Financial Hardships [a]	11.94	11.41	15.81
Child Mental Hardships [a]	12.82	10.64	28.69
Child with Child [a]	73.35	74.65	60.93
Exchange Motives			
Child Former Help	74.75	75.01	72.75
Child Felt Close [a]	4.35 (.01)	4.37 (.01)	4.20 (.04)

Note. Superscript a indicates a statistically significant difference between the heterosexual and sexual minority groups at .05.

Table 2.2. Correlations among Binary Outcome Variables used in Analysis of Parents' Financial Help, The National Survey of Adolescent to Adult Health (N = 2,082)

Variable	Education Assistance	Housing Assistance	Other Assistance
Education Assistance	–	–	–
Housing Assistance	.10 (<.001)	–	–
Other Assistance	.28 (<.001)	.16 (<.001)	–

Table 2.3. Logistic Regression Testing Effects on Any Assistance, The National Survey of Adolescent to Adult Health (N = 2,082)

	Step 1 OR (SE)	Step 2 OR (SE)	Step 3 OR (SE)	Step 4 OR (SE)	Step 5 OR (SE)
Sexual minority status	3.29 (.16) **	1.53 (.32) *	1.43 (.31)	1.59 (.34) *	1.48 (.32)
Controls					
Child Sex		1.33 (.15) *	1.29 (.15) *	1.30 (.15) *	1.25 (.15)
Child Race					
Black		.93 (.15)	.95 (.16)	.87 (.15)	.93 (.16)
Hispanic		.80 (.14)	.78 (.14)	.77 (.14)	.78 (.14)
Other		1.84 (.53) *	2.00 (.58) *	1.84 (.53) *	1.95 (.57) *
Child Age		.99 (.03)	.99 (.03)	1.00 (.03)	1.00 (.03)
Parent Age		.96 (.01) ***	.96 (.01) ***	.86 (.01) ***	.96 (.01) ***
Parent Education		1.50 (.09) ***	1.48 (.09) ***	1.52 (.09) ***	1.49 (.09) ***
Parent Income		1.12 (.03) ***	1.12 (.03) ***	1.11 (.03) ***	1.12 (.03) ***
Parent Assets		1.15 (.03) ***	1.15 (.03) ***	1.15 (.03) ***	1.15 (.04) ***
Family Structure					
Single/Step/Other		.66 (.08) **	.66 (.08) **	.67 (.08) **	.67 (.08) **
Number of Siblings		.86 (.02) ***	.86 (.02) ***	.87 (.02) ***	.87 (.02) ***
Child Partnership		.84 (.10)	.82 (.10)	.86 (.10)	.85 (.07)
Geographic Distance		1.05 (.04)	1.06 (.04)	1.06 (.04)	1.07 (.04)
Altruistic Motives					
Financial Hardships			.69 (.12) *		.71 (.12)
Mental Hardships			2.02 (.43) **		2.08 (.45) **
Child with Child			.96 (.14)		.99 (.14)
Exchange Motives					
Child Former Help				1.41 (.22) *	1.43 (.22) *
Child Felt Close				1.14 (.07) *	1.13 (.07) *
Pseudo R^2	0.0018	0.1829	0.1848	0.1842	0.1887

Note: * p<.05, ** p<.01 p *** p<.001

Table 2.4. Logistic Regression Testing Effects on Educational Assistance, The National Survey of Adolescent to Adult Health (N = 2,082)

	Step 1 OR (SE)	Step 2 OR (SE)	Step 3 OR (SE)	Step 4 OR (SE)	Step 5 OR (SE)
Sexual minority status	1.29 (.05)**	1.50 (.25)*	1.44 (.26)*	1.53 (.28) *	1.48 (.27)*
Controls					
Child Sex		1.52 (.16)***	1.58 (.16)***	1.48 (.15) ***	1.55 (.16)***
Child Race					
Black		1.04 (.17)	1.08 (.18)	1.01 (.17)	1.05 (.18)
Hispanic		.89 (.16)	.90 (.16)	.88 (.15)	.88 (.16)
Other		1.12 (.24)	1.10 (.23)	1.12 (.24)	1.12 (.24)
Child Age		.98 (.03)	.99 (.03)	.99 (.03)	.99 (.03)
Parent Age		.94 (.01)***	.94 (.01)***	.94 (.01) ***	.94 (.01)***
Parent Education		1.67 (.09)***	1.66 (.09)***	1.69 (.09) ***	1.67 (.09)***
Parent Income		1.11 (.02)***	1.11 (.02)***	1.10 (.02) ***	1.10 (.02)***
Parent Assets		1.11 (.03)***	1.12 (.03)***	1.11 (.05) ***	1.11 (.03)***
Family Structure					
Single/Step/Other		.49 (.05)***	.50 (.06)***	.49 (.05) ***	.50 (.06)***
Number of Siblings		.89 (.02)***	.90 (.02)***	.89 (.02) ***	.90 (.03)***
Child Partnership		.82 (.09)	.74 (.08)*	.83 (.09)	.75 (.08)*
Geographic Distance		1.11 (.03) ***	1.11 (.03) ***	1.11 (.03)***	1.12 (.03)***
Altruistic Motives					
Financial Hardships			.79 (.13)		.81 (.14)
Mental Hardships			1.02 (.17)		1.02 (.17)
Child with Child			.71 (.09)*		.73 (.09)*
Exchange Motives					
Child Former Help				1.12 (.17)	1.12 (.15)
Child Felt Close				1.16 (.07) *	1.14 (.07)*
Pseudo R^2	0.0024	0.2103	0.2120	0.2140	0.2148

Note: * p<.05, ** p<.01 p *** p<.001

Table 2.5. Logistic Regression Testing Effects on Housing Assistance, The National Survey of Adolescent to Adult Health (N = 2,082)

	Step 1 OR (SE)	Step 2 OR (SE)	Step 3 OR (SE)	Step 4 OR (SE)	Step 5 OR (SE)
Sexual minority status	1.30 (.25)	1.36 (.29)	1.46 (.31)	1.38 (.29)	1.47 (.32)
Controls					
Child Sex		.76 (.10)*	.72 (.10)*	.75 (.10) *	.71 (.09)*
Child Race					
Black		.92 (.25)	.88 (.25)	.90 (.25)	.88 (.25)
Hispanic		1.05 (.27)	1.04 (.27)	1.05 (.27)	1.01 (.26)
Other		1.07 (.27)	1.13 (.29)	108 (.28)	1.15 (.30)
Child Age		.99 (.04)	.98 (.04)	1.00 (.04)	.98 (.04)
Parent Age		.97 (.01)	.97 (.01)*	.97 (.01)	.97 (.01)*
Parent Education		1.19 (.07)**	1.20 (.07)**	1.19 (.07) **	1.20 (.08)**
Parent Income		1.08 (.04)*	1.08 (.04)*	1.08 (.04) *	1.08 (.03)*
Parent Assets		1.23(.05)***	1.24 (.05)***	1.23 (.05) ***	1.24 (.05)***
Family Structure					
Single/Step/Other		.81 (.13)	.82 (.13)	.80 (.13)	.82 (.13)
Number of Siblings		.87 (.04)**	.86 (.04)**	.87 (.04) **	.86 (.05)**
Child Partnership		.73 (.10)	.90 (.13)	.73 (.10) *	.91 (.14)
Geographic Distance		.95 (.03)	.95 (.03)	.95 (.03)	.95 (.03)
Altruistic Motives					
Financial Hardships			.94 (.22)		.95 (.23)
Mental Hardships			1.131 (.23)		1.12 (.23)
Child with Child			1.88 (.33)***		1.91 (.33)***
Exchange Motives					
Child Former Help				1.06 (.23)	1.03 (.24)
Child Felt Close				1.08 (.09)	1.08 (.10)
Pseudo R2	0.0023	0.0934	0.0995	0;0936	0.0998

Note: * p<.05, ** p<.01 p *** p<.001

Table 2.6. Logistic Regression Testing Effects on Other Financial Assistance, The National Survey of Adolescent to Adult Health (N = 2,082)

	Step 1 OR (SE)	Step 2 OR (SE)	Step 3 OR (SE)	Step 4 OR (SE)	Step 5 OR (SE)
Sexual minority status	1.13 (.17)	1.08 (.17)	1.08 (.18)	1.10 (.18)	1.08 (.18)
Controls					
Child Sex		1.45 (.14)***	1.40 (.13)***	1.44 (.13) ***	1.39 (.13)**
Child Race					
Black		1.00 (.15)	1.01 (.15)	.96 (.14)	.98 (.15)
Hispanic		.64 (.10)**	.64 (.10)**	.64 (.10) **	.64 (.10)**
Other		1.26 (.25)	1.30 (.26)	1.27 (.25)	1.33 (.27)
Child Age		.99 (.03)	.99 (.03)	1.00 (.03)	.99 (.03)
Parent Age		1.00 (.01)	.99 (.01)	1.00 (.01)	.99 (.01)
Parent Education		1.19 (.05)***	1.19 (.05)***	1.18 (.05) ***	1.19 (.05)***
Parent Income		1.09 (.02)***	1.09 (.02)***	1.09 (.03) ***	1.08 (.02)***
Parent Assets		1.06 (.03)*	1.06 (.03)**	1.06 (.03) *	1.07 (.03)**
Family Structure					
Single/Step/Other		.90 (.09)	.91 (.09)	.90 (.09)	.91 (.09)
Number of Siblings		.88 (.02)***	.88 (.02)***	.88 (.02)***	.88 (.02)***
Child Partnership		.57 (.05)***	.62 (.06)***	.58 (.05)***	.63 (.06)***
Geographic Distance		.99 (.02)	.99 (.02)	.99 (.03)	1.00 (.02)
Altruistic Motives					
Financial Hardships			.88 (.13)		.88 (.13)
Mental Hardships			1.29 (.20)		1.31 (.20)
Child with Child			1.32 (.15)*		1.34 (.15)*
Exchange Motives					
Child Former Help				1.31 (.17) *	1.31 (.17)*
Child Felt Close				1.03 (.06)	1.03 (.06)
Pseudo R2	0.0002	0.0897	0;0939	0.0899	0.0941

Note: * p<.05, ** p<.01 p *** p<.001

Table 3.1. Descriptive Statistics for Variables used in Analysis of Parental Ties and Health by Sexual Minority Status, The National Survey of Adolescent to Adult Health

	Full Sample (n=11,772)	Heterosexual (n=10,041)	Sexual Minority (n=1,731)
	Prop./Mean (SD)	Prop./Mean (SD)	Prop./Mean (SD)
Self-Reported Health [a]	2.46 (0.02)	2.43 (0.02)	2.58 (0.04)
Depressive Symptoms [a]	7.35 (0.02)	7.19 (0.02)	8.27 (0.07)
Parental Ties			
Maternal Closeness [a]	4.09 (0.02)	4.13 (0.02)	3.90 (0.06)
Paternal Closeness [a]	3.75 (0.02)	3.80 (0.03)	3.45 (0.06)
Maternal Contact	5.10 (0.02)	5.11 (0.02)	5.05 (0.05)
Paternal Contact [a]	4.59 (0.02)	4.63 (0.02)	4.34 (0.06)
Parents Giving [a]	1.42 (0.02)	1.41 (0.02)	1.49 (0.04)
Parents Receiving	1.46 (0.02)	1.46 (0.02)	1.47 (0.04)
Sex [a]			
Female	56.74	53.76	74.06
Race/Ethnicity			
White [a]	58.16	57.58	61.54
Black	20.08	20.47	17.83
Hispanic	14.26	14.36	13.69
Other	7.49	7.59	6.93
Age [a]	37.08 (.01)	37.12 (.02)	36.83 (.04)
Child Education [a]	8.23 (.03)	8.19 (.03)	8.48 (.08)
Child Income (in 5 thousand) [a]	7.26 (.03)	7.33 (.03)	6.84 (.08)
Mother Education [a]	5.52 (.02)	5.48 (.02)	5.72 (.06)
Father Education [a]	5.71 (.03)	5.67 (.03)	5.96 (.07)
Parental Income (in thousands)	49.03 (.58)	48.35 (.58)	52.86 (2.00)
Family Structure			
Single/Step/Other Family [a]	45.90	45.09	50.61
Number of Siblings	2.79 (.02)	2.80 (0.02)	2.76 (.05)
Partnership Status [a]	73.69 (.00)	74.69 (.00)	67.88 (.01)
Number of Children [a]	1.51 (0.01)	1.57 (0.01)	1.17 (0.03)

Note: Superscript a indicates a statistically significant difference between the heterosexual and sexual minority groups at .05.

Table 3.2. Correlations among the Six Mediators of the Domains of Intergenerational Relationships, The National Survey of Adolescent to Adult Health

Mediators	Maternal Closeness	Paternal Closeness	Maternal Contact	Paternal Contact	Financial Help from Parents	Financial Help to Parents
Maternal Closeness	1					
Paternal Closeness	.47 (p <.001)	1				
Maternal Contact	.59 (p <.001)	.27 (p <.001)	1			
Paternal Contact	.29 (p <.001)	.65 (p <.001)	.48 (p <.001)	1		
Financial Help from Parents	.10 (p <.001)	.06 (p <.001)	.16 (p <.001)	.14 (p <.001)	1	
Financial Help to Parents	.05 (p<.001)	.01 (p <.001)	.11 (p <.001)	.06 (p <.001)	.23 (p <.001)	1

Table 3.3. Model Coefficients, Standard Errors, and P-values for Mediation Model Testing the Effect of Sexual Minority Status on Depressive Symptoms, The National Survey of Adolescent to Adult Health

Variable	Coefficient	SE	p-value
Sexual minority status			
path c'	.85	.06	<.001
Maternal closeness			
path a	-.25	.03	<.001
path b	-.29	.03	<.001
a*b	.07	.01	<.001
Paternal closeness			
path a	-.39	.04	<.001
path b	-.29	.03	<.001
a*b	.11	.02	<.001
Maternal contact			
path a	-.07	.03	.018
path b	.01	.03	.737
a*b	.00	.00	.739
Paternal contact			
path a	-.30	.04	<.001
path b	.00	.03	.971
a*b	.00	.01	.971
Parents giving			
path a	.09	.02	<.001
path b	.54	.03	<.001
a*b	.05	.01	<.001
Parents receiving			
path a	.02	.02	.418
path b	.13	.03	<.001
a*b	.00	.00	.424

Model fit indices: RMSEA = 0.049, CFI = 0.920, TLI = 0.962

Table 3.4. Model Coefficients, Standard Errors, and P-values for Mediation Model Testing the Effect of Sexual Minority Status on Self-Reported Health, The National Survey of Adolescent to Adult Health

Variable		Coefficient	SE	p-value
Sexual minority status				
	path c'	.10	.02	<.001
Maternal closeness				
	path a	-.24	.03	<.001
	path b	-.07	.01	<.001
	a*b	.02	.01	<.001
Paternal closeness				
	path a	-.38	.04	<.001
	path b	-.06	.01	<.001
	a*b	.02	.01	<.001
Maternal contact				
	path a	-.07	.03	.019
	path b	.01	.01	.350
	a*b	.00	.00	.384
Paternal contact				
	path a	-.30	.04	<.001
	path b	.01	.01	.554
	a*b	.00	.00	.555
Parents giving				
	path a	.09	.02	<.001
	path b	.16	.01	<.001
	a*b	.01	.00	<.001
Parents receiving				
	path a	.02	.02	.420
	path b	.08	.01	<.001
	a*b	.00	.00	.422

Model fit indices: RMSEA = 0.049, CFI = 0.954, TLI = 0.920

Appendix Table 3.1. Model Coefficients, Standard Errors, and P-values for Mediation Model Testing the Effect of Sexual Minority Status on Depressive Symptoms, The National Survey of Adolescent to Adult Health

Variable		Coefficient	SE	p-value
Sexual minority status				
	path c’	.95	.07	<.001
Maternal closeness				
	path a	-.16	.04	<.001
	path b	-16	.06	.005
	a*b	.02	.01	.018
Paternal closeness				
	path a	-.14	.04	.001
	path b	-.38	.06	<.001
	a*b	.05	.02	.004
Maternal contact				
	path a	-.23	.06	<.001
	path b	.01	.02	.640
	a*b	.00	.00	.642
Paternal contact				
	path a	-.42	.07	<.001
	path b	-.05	.02	.002
	a*b	.02	.01	.006
Parents giving				
	path a	.22	.06	<.001
	path b	.15	.02	<.001
	a*b	.03	.01	<.001

Appendix Table 3.2. Model Coefficients, Standard Errors, and P-values for Mediation Model Testing the Effect of Sexual Minority Status on Self-Reported Health, The National Survey of Adolescent to Adult Health

Variable		Coefficient	SE	p-value
Sexual minority status				
	path c’	.12	.03	<.001
Maternal closeness				
	path a	-.16	.04	<.001
	path b	-.04	.02	.050
	a*b	.01	.00	.072
Paternal closeness				
	path a	-.14	.04	<.001
	path b	-.07	.02	.004
	a*b	.01	.00	.029
Maternal contact				
	path a	-.23	.06	<.001
	path b	.03	.01	<.001
	a*b	-.01	.00	.006
Paternal contact				
	path a	-.42	.07	<.001
	path b	-.02	.01	.001
	a*b	.01	.00	.005
Parents giving				
	path a	.22	.06	<.001
	path b	.06	.01	<.001
	a*b	.01	.00	<.001

Figures

Figure 1.1. Conceptualization of the Latent Growth Model Estimating the Latent Trajectories of Parental Closeness

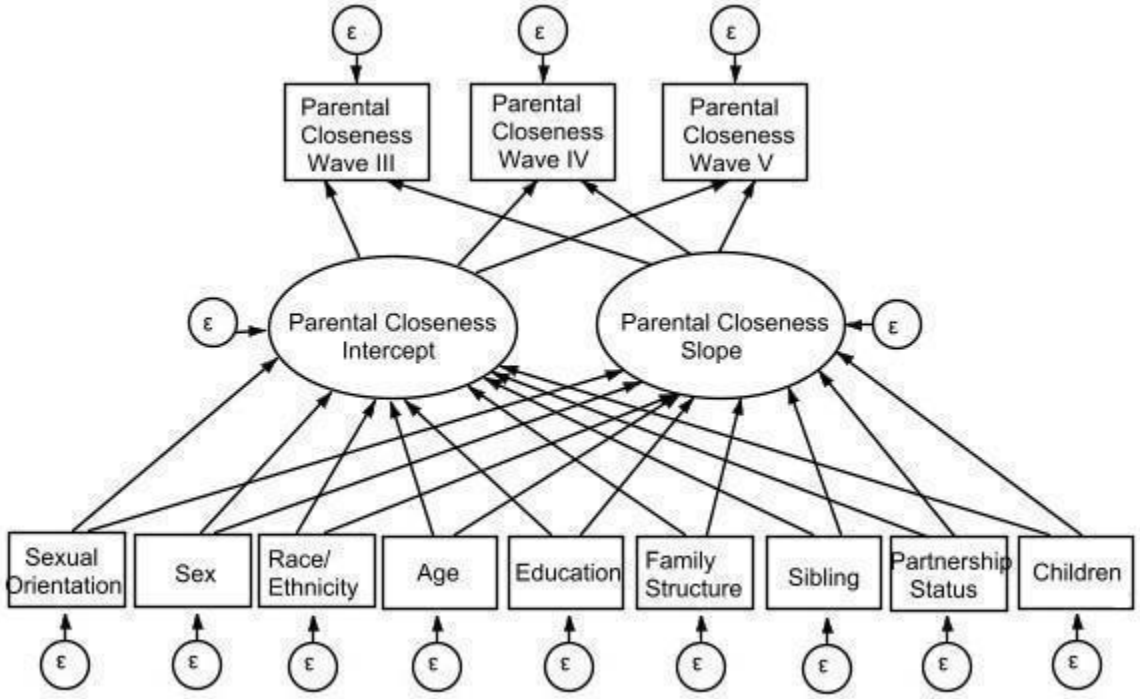
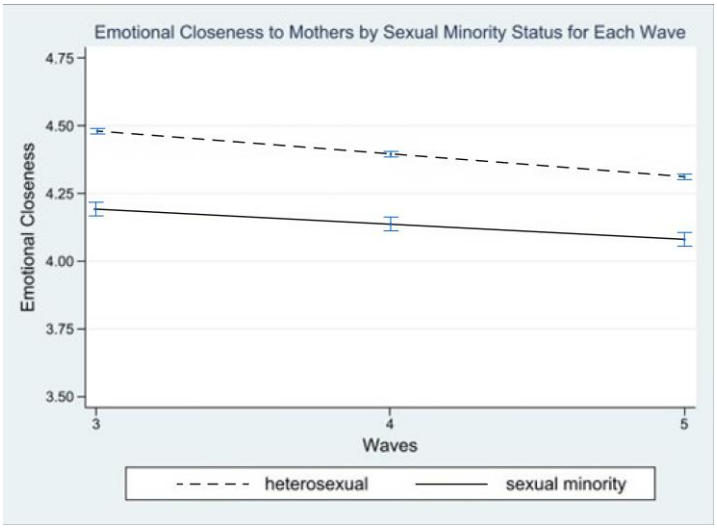


Figure 1.2. Visualization of Trajectories of Emotional Closeness to Mothers and Fathers by Sexual Minority Status for Each Wave



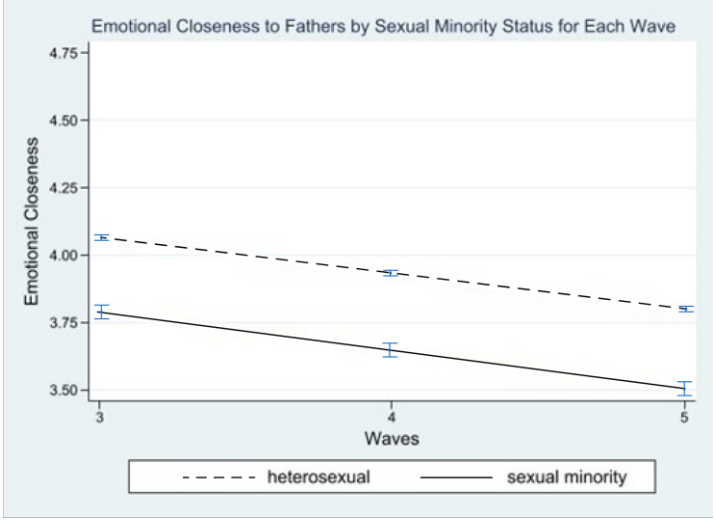


Figure 3.1. Visualization of mediation analyses on the association between sexual minority status and depressive symptoms

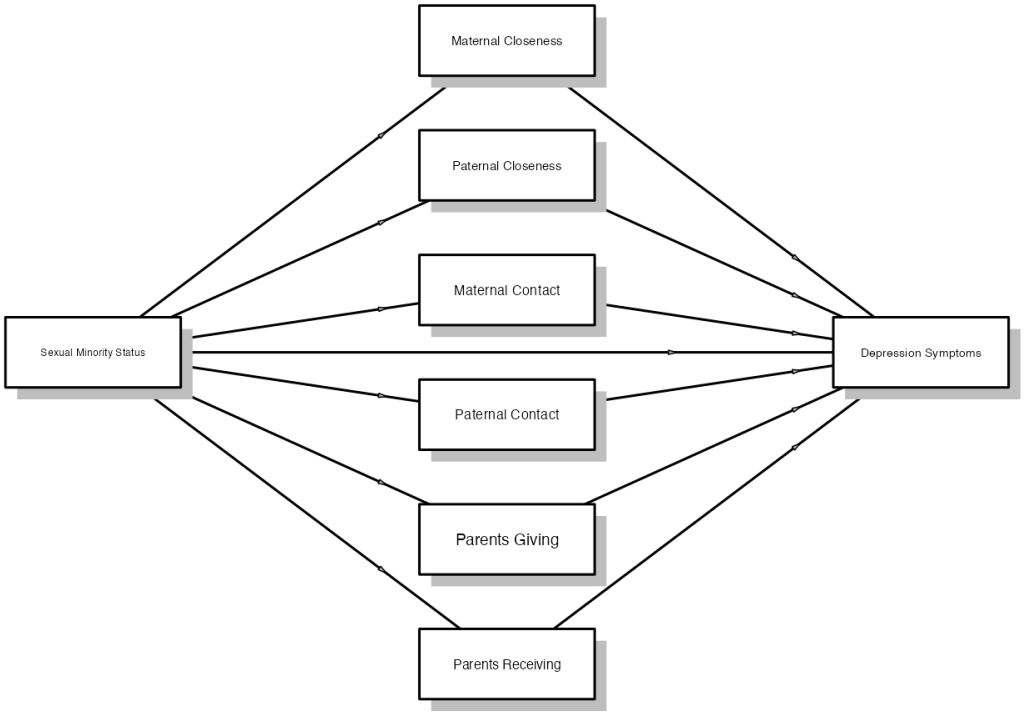


Figure 3.2. Visualization of mediation analyses on the association between sexual minority status and self-rated general health