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Parent Messages about Sexual Orientation and Youths' Attitudes toward LGB People

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by

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ABSTRACT

Parent Messages about Sexual Orientation and Youths' Attitudes toward LGB People

by

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Lesbian, gay, and bisexual (LGB) youth are a vulnerable population. Research has shown that LGB youth are at risk for discriminatory interpersonal victimization and social exclusion based on sexual orientation (D'Augelli et al., 2002). Heterosexual youth can have a range of attitudes toward LGB people, which may exacerbate or improve LGB youths' social environments. It is important to understand how youths' sexual orientation attitudes form, as this ultimately has an impact on LGB youths' experiences. This study explored the relationship between parent messages about sexual orientation and the development of youths' attitudes toward LGB people.

Participants in this study included 23 mother-child dyads. Participants completed video-recorded prompted conversations, during which they discussed topics related to sexual orientation. Parents' messages related to sexual orientation were coded using qualitative content analysis (Morgan, 1993) in order to identify parents' positive, neutral, heteronormative, and negative messages about LGB people. In addition, parents and youth both completed measures of explicit attitudes about LGB people (Modern Homonegativity Scale; Morrison & Morrison, 2002) and implicit attitudes about sexual orientation (Implicit

Attitude Test; Nosek et al., 2007). Youth also completed a measure of behavioral attitudes (LGBT Ally Identity Development measure; Ji & Fujimoto, 2013).

The results of the study showed that the ratio of positive to negative messages parents provided during the prompted conversations were associated with youths' explicit and behavioral attitudes toward LGB people with medium to large effect sizes, but did not relate to youths' implicit attitudes. Parents' implicit attitudes did not reach significance as a moderator to the relationship between parent messages and youth explicit attitudes, however the pattern of the moderation model was in the expected direction. Youths' explicit and behavioral attitudes significantly correlated with one another and their implicit and behavioral attitudes approached significance with a medium effect size, whereas youths' explicit and implicit attitudes did not significantly correlate. Mothers' explicit attitudes significantly correlated with their explicit attitudes, suggesting their verbal messages reflected their explicit attitudes.

This study empirically demonstrated that parent messages about sexual orientation relate to youths' attitudes and behaviors toward LGB people. This provides a rationale for developing psychoeducational interventions aimed at supporting parents' LGB-affirming parenting skills, regardless of their children's current sexual orientation identity. Supporting parents in providing positive messages about LGB people could promote the development of LGB allies and a more positive social environment for LGB youth.

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I. Rationale

Lesbian, gay, and bisexual (LGB) youth are a vulnerable population. Research has documented that LGB youth are at increased risk for discriminatory interpersonal victimization and social exclusion based on sexual orientation (D'Augelli, Pilkington, & Hershberger, 2002; Pilkington & D'Augelli, 1995). Academically, LGB youth report lower levels of school achievement and belonging (Rostosky, Owens, Zimmerman, & Riggle, 2003). Birkett, Espelage, and Koenig (2009) reported that students who were questioning their sexual orientation reported the highest levels of anti-LGB victimization, drug use, depression, suicidality, and nonattendance as compared to heterosexual and LGB students. LGB and questioning students who experienced higher levels of homophobic teasing also showed the highest rates of depression, suicidality, alcohol and marijuana use, and school nonattendance (Birkett et al., 2009). Frequent exposure to anti-LGB language from peers, teachers, or staff is also problematic for LGB youth (Kosciw & Diaz, 2006). For example, Kosciw and Diaz (2006) found that 91.4% of LGB middle and high school students reported they either sometimes or frequently heard "homophobic remarks in school such as 'faggot,' 'dyke,' or 'queer,'" (p. 990).

Research on the experiences of LGB youth has increasingly focused on negative outcomes associated with peer bullying behaviors (e.g. Birkett et al., 2009; Kosciw & Diaz, 2006; Varjas, Meyers, Kiperman, & Howard, 2013). Bullying is more often directed toward LGBT youth than heterosexual youth in U.S. schools (Birkett et al., 2009). A nationwide survey of LGB youth found that 64.1% of participants experienced anti-LGB harassment and 64.3% felt unsafe at school based on their sexual orientation (Kosciw & Diaz, 2006). Another study found that 82% of LGB students were targeted with primarily anti-LGB

name-calling and 60% were physically assaulted (Rivers, 2001). LGB adolescents reported being victimized by anti-LGB cyberbullying through text messages, e-mails, cell phones, cell phone cameras, chat rooms, or websites (Varjas et al., 2013), with one study showing that one of every two LGBTQ adolescents has been victimized online (Malley, Posner, & Potter, 2008). Numerous negative outcomes of bullying have been documented, including higher rates of anxiety and depression (Kumpulainen, Räsänen, & Puura, 2001; Rigby, 2000). Heterosexual college students' negative attitudes toward their LGB peers can contribute to a range of negative outcome for LGB students, including identity development problems and violence (Pilkington & D'Augelli, 1995; Herek, 1993).

In contrast, non-LGB youth can also positively impact the lives of LGB youth. Numerous studies have shown that heterosexual people have reported increasingly positive attitudes toward gay men and lesbians in recent years (e.g. Altemeyer, 2002; Herek, 1993; Herek & Capitanio, 1996). A recent international poll from the Pew Research Center (2013) found that acceptance of same-sex sexuality in the United States increased by 11% since 2007, with 60% of polled citizens stating "homosexuality should be accepted by society." This shift in attitude was greater than the majority of other nations sampled and demonstrates the United States is a country with one of the highest rates of acceptance of LGB people. It is likely that attitude shifts in the U.S. have had a positive impact on LGB youth. Amongst youth, this trend in attitude change is pronounced by the fact that schools are increasingly developing Gay-Straight Alliances (GSA's) to promote positive school climate for LGB youth and allies. Using a national sample of transgender youth and LGB cisgender youth, Greytak, Kosciw, and Boesen (2013) found that the presence of GSA's in schools were associated with positive outcomes for cisgender LGB students, including

decreased nonattendance and interpersonal victimization, with positive effects being even stronger for transgender youth. These findings are consistent with past research showing that GSA's, LGBT support groups, and sexual orientation inclusive policies benefit LGB youth by decreasing rates of in-school victimization and discrimination (Goodenow, Szalacha, & Westheimer, 2006; Saewyc, Konishi, Rose, & Homma, 2014; Hong, Woodford, Long, & Renn, 2015), increasing positive in-school experiences (Heck, Flentje, & Cochran, 2011), reducing number of absences (Goodenow et al., 2006), and reducing suicidal thoughts and attempts (Saewyc et al., 2014). Schools with more positive climates and less anti-LGB victimization are associated with decreased negative outcomes for LGB and questioning youth (Birkett et al., 2009).

It is important to consider how heterosexual people's positive and negative attitudes toward LGB people develop, as this ultimately has an impact on LGB youths' experiences. Sexual socialization is typically described as the process through which knowledge, attitudes, and values about sexualities are learned and internalized (Ward, 2003; Shtarkshall, Santelli, & Hirsch, 2007). Messages from many different sources about a range of sexual topics, including sexual orientation, accumulate over time to influence youths' current attitudes, values, and knowledge (Ward, 2003). Although there are many potentially influential sources of positive or negative attitudes toward LGB peers, including media (television and magazines), peers, schools, and spiritual or religious groups (Ward, 2003; Shtarkshall et al., 2007), parents have frequently been discussed in the literature as a potential source of socializing messages regarding sexuality (e.g. Ward, 2003; Lefkowitz & Stoppa, 2006; Sanders & Mullis, 1988; Shtarkshall, Santelli, & Hirsch, 2007) and are also described as the first agents of youths' sexual socialization (Shtarkshall et al., 2007). Poteat,

DiGiovanni, and Scheer (2012) found that high school students' behaviors toward sexual minorities reflected their perceptions of their parents' attitudes toward sexual minorities, which led the researchers to call for additional research examining how parents' attitudes impact youths' attitudes and behaviors toward LGB people. Psychological theory stemming from Allport's (1954) contact hypothesis suggests that heterosexual youths' attitudes toward LGB peers should become less negative with increased interpersonal contact with LGB peers. However, research has found that interpersonal contact only reduces negative attitudes when "contact was supported by sanctioned authority," (Cook, 1984; as cited in Bowen & Bourgeois, 2001, p. 91). Parent messages may serve as such an authority for youth who need support in developing their own positive attitudes toward LGB peers. Therefore, this study primarily focused on the messages that parents provide to children as potential sexual socialization agents in heterosexual-identified youths' lives. In order to enhance the likelihood that children are socialized toward holding positive attitudes toward LGB peers and same-sex sexualities, we need to understand exactly what parents are doing to contribute to youths' attitudes.

Parents give their children a variety of messages as part of the parenting process. They are often children's first source of information about sexual development, and even as other informal sources of information (e.g. media and peers) begin to provide additional messages to children, parents maintain a key role in providing messages and helping youth to understand messages they receive from others sources (Lefkowitz & Stoppa, 2006). Messages about sexual orientation are an important component of sexual socialization. Some parents provide positive and affirming messages to their children about a range of sexual orientations. These parents could include those of children who identify as LGB, as

well as those who do not currently identify as LGB. This distinction is important because parents often do not know whether their children identify as LGB before they start giving their children messages about sexual orientation (Savin-Williams, 2003). Further, because messages about sexual orientation are given to children who identify (or later identify) as LGB or non-heterosexual, as well as children who identify (or later identify) as heterosexual, it is ultimately important to consider how parent messages impact all youths' attitudes about LGB people.

The primary purpose of this study was to observe empirically how mothers' messages about sexual orientation contributed to their children's explicit attitudes toward LGB peers. The study also tested additional hypotheses and addressed additional exploratory research questions. More specifically, I hypothesized the following:

1. Mothers' verbal messages (positive, neutral, heteronormative, negative) will be significantly associated with youths' explicit attitudes about LGB people, such that positive and neutral parental messages will be associated with more positive youth explicit attitudes, whereas negative and heteronormative parental messages will be associated with more negative youth explicit attitudes.
2. Given that hypothesis #1 is supported, parents' implicit sexual orientation attitudes will moderate the relationship between positive parent messages and youth attitudes, such that the relationship between positive parent messages and youth explicit attitudes will be weaker among parents who hold more negative implicit attitudes.
3. Mothers' verbal messages (positive, neutral, heteronormative, negative) will be significantly associated with youths' implicit sexual orientation attitudes, such that positive and neutral sexual orientation messages will be associated with more

positive youth implicit attitudes, whereas negative and heteronormative parental messages will be associated with more negative youth implicit attitudes.

4. Mother's verbal messages (positive, neutral, heteronormative, negative) will be significantly associated with youths' behavioral attitudes. It is predicted that parent messages will statistically explain a larger portion of the variance in youth explicit attitudes than youth behavioral attitudes. Further, it is predicted that youth explicit attitudes will mediate the relationship between parent messages and youth behavioral attitudes.

5. Youth explicit, implicit, and behavioral attitudes will significantly positively correlate with one another.

6. Mothers' explicit attitudes will significantly correlate with their degree of interpersonal contact with LGB people and sexual orientation messages.

In addition to this hypothesis testing, additional exploratory analyses were conducted, which are described in the results section.

II. Review of Literature

A. Communication about Sexualities

Prior to discussing parent messages, it is important to first describe key findings on parent-child communication about sexualities. Verbal messages are an important component of parent-child sexual communication. Parents who talk relatively more frequently about sexualities with their children are more likely to have children whose sexual attitudes closely reflect the parents' attitudes than parents who talk less frequently about sexualities with their children, suggesting the power of parent-child sexual communication in its verbal form (Fisher, 1988). However, direct verbal communication is not the only means of message transmission; additional means of communication include nonverbal messages and indirect verbal messages (Ward, 2003).

According to Ward and Wyatt (1994, p. 184; Ward, 2003), sexual messages are often not direct or verbal; instead, many messages about sexualities are "indirect, nonverbal, ambiguous, inconsistent, and all-too-often absent." Indirect verbal messages about sexual values can be conveyed through family discussions of sociopolitical sexual issues (e.g. Gay Rights Movement; Hepburn, 1983). The tone of sexuality-related messages also varies, with some researchers reporting negative tones particularly directed toward girls and women, emphasizing the dangers of sex (Darling & Hicks, 1982). Furthermore, non-verbal expressions such as gestures, facial expressions, and personal conduct can indicate parents' values and attitudes (Sanders & Mullis, 1988). Although parents are rated by their children as highly influential on their opinions, beliefs, and attitudes toward sexuality, daughters also describe their parents as avoiding or seeming uncomfortable during discussions about sexual issues (Sanders & Mullis, 1988). This finding illustrates the impact of indirect verbal

messages and non-verbal messages on youth. Given the complexity of parent-child communication about sexualities, I will review the impact of direct, indirect, verbal, and non-verbal messages that parents may provide to their children about sexualities.

1. Types of message sources

Although this study focused on the impact of parents' verbal messages on youths' attitudes toward LGB peers, it is important to acknowledge that messages about sexualities are transmitted from numerous sources. Understanding these different sources of sexual socialization helps to situate parent messages within the broader context of a youth's life. Research has compared the frequencies and types of messages transmitted to youth across these different message sources. Calzo and Ward (2009) found that informal socialization agents (e.g. parents, peers, and media) contribute more information about same-sex sexualities to college students (based on retrospective self-reports) than formal socialization agents (e.g. sex education classes). Furthermore, they found that participants reported receiving more information from television, film, and friends than parents. Although this is an important finding that suggests differences in the frequencies of direct messages about sexual orientation across informal socialization agents, the relatively low levels of communication about sexual orientation from parents is interesting in itself. An absence of parent communication regarding topics such as same-sex sexualities, which are sanctioned culturally, can serve as an implicit message to children that the topic is unacceptable. The researchers also examined the values embedded in communication that participants received from each message source. They found that parents were more likely than the media to communicate the idea that, "homosexuality is not perverse or unnatural," however, the media was more likely to communicate the idea that "homosexuality is a matter of

orientation, not morality," (Calzo & Ward, 2009, p. 1107). Finally, they found that women were more likely to report receiving LGBT-positive messages from all sources of informal sexual socialization than men (Calzo & Ward, 2009). In other research on parent-child communication, parents cited a variety of reasons for not discussing sexuality with their children, including withholding information to protect children's innocence, believing that knowledge of sexuality is age inappropriate, fearing negative reactions from others if they did talk about sexuality with their children, and being uncomfortable or embarrassed to talk about sexuality with their children (Stone, Ingham, & Gibbins, 2013). Combined, these findings again suggest that an absence of communication from parents about sexual orientation can serve as an impactful message to children on its own. Furthermore, these findings highlight the reality that parents are an important part of children's sexual socialization, however, they are not the only component.

2. Messages from parents regardless of children's sexual orientation

This section will review literature pertaining to sexuality-related messages parents give to their children, regardless of their children's sexual orientation. Some of the following literature discusses messages given to heterosexual-identified youth, however much of the literature does not specify the sexual orientation identities of the youth to whom the authors refer.

Parents discuss same-sex sexualities at varying rates with their children. For example, Rosenthal and Feldman (1999) found that 55% of mothers and 71% of fathers never discussed gay and lesbian issues with their sons, whereas 28% of mothers and 41% of fathers never discussed the topic with their daughters. According to Lefkowitz and Stoppa (2006), omission of particular content (e.g. LGB issues within a discussion about sex) or

topics (e.g. the topic of sex altogether) conveys significant and memorable information about parental beliefs and feelings. Furthermore, parents and adolescents often disagree about what was discussed during direct conversations about sexualities (Shtarkshall et al., 2007). Findings such as these indicate that although direct verbal messages from parents may be positive, indirect non-verbal messages, which could stem from parents' implicit attitudes about sexualities, may be negative. These findings support the above stated hypothesis that parental implicit attitudes could moderate the relationship between parent messages and youths' attitudes toward LGB peers.

Parents' indirect messages about sexual orientation are manifested in numerous ways. Parents might discuss other people they know who identify as LGB, and through this discussion parents may convey their own attitudes and values related to sexual orientation (Lefkowitz & Stoppa, 2006). For example, parents who discuss a same-sex couple in a positive way with their children might convey the message that they have positive attitudes toward same-sex couples. Parents also convey their values about sexual orientation based on the manner in which they discuss their children's sexual identity development. Lefkowitz and Stoppa (2006) provide an example from their research of a mother who, in discussing sexuality with her daughter, brought up the topic of sexual orientation without judgment. Although she did not directly convey her values, her nonjudgmental presentation of the topic normalized consideration of sexual orientation as part of sexual identity development.

Rich (1980) proposed the idea of "compulsory heterosexuality;" which refers to the assumption that everyone is heterosexual unless otherwise stated. Relatedly, many parents assume their children are or will be heterosexual (Swall & Swall, 2000). According to

Shibley Hyde and Jaffee (2000), the concept of compulsory heterosexuality is perpetuated not only through parents, but also by peers, media, and teachers. Herdt (1989) explains that gay and lesbian youth are often presumed to be heterosexual until they demonstrate they are not, which can lead parents to believe it is unnecessary to discuss same-sex sexualities with their children. Based on these combined findings, Shibley Hyde and Jaffee (2000) suggest that parent communication generally makes the possibility of same-sex sexualities invisible, therefore indirectly communicating that questioning one's sexual orientation identity or identifying as LGB are not viable options. They point out that parents frequently provide messages that convey this assumption: "Comments such as 'When you grow up and get married…' are powerful…These messages are so clear that, by about the age of 5, children have formed a concept of marriage and know that a member of the other gender is the appropriate marriage partner," (Broderick, 1966a,b; as cited in Shibley Hyde & Jaffee, 2000). Solebello and Elliott's (2011) exploration of heterosexual fathers' communication with their teenage children showed that parents may go beyond an assumption of heterosexuality, feeling a responsibility for encouraging their children, especially sons, to become heterosexual. Another powerful source of indirect messages from parents are jokes about sexualities (Lefkowitz & Stoppa, 2006). For example, parents might joke about when their children are allowed to begin dating or whom they should be dating. Jokes such as these provide children with messages about their parents' beliefs and values related to sexualities.

The messages embedded within the media that parents allow (and do not allow) their children to consume provide further indirect messages about sexualities to youth (Lefkowitz & Stoppa, 2006). For example, parents might select certain books as a method of sharing

information about sexualities with their children. Books vary greatly in the messages they communicate about sexualities. Providing a book featuring only mixed-sex couples sends a very different message than one that positively portrays both mixed and same-sex couples. Similarly, while some parents may prohibit their children from watching films containing sexual messages, others might allow their children to watch the film and use it as a means to discuss the film's content with their children (Lefkowitz & Stoppa, 2006). This sends a different message to children than simply not allowing children to watch films with sexual content (Lefkowitz & Stoppa, 2006).

Although direct and indirect verbal messages are an important part of what parents communicate to their children, the style or tone of sharing information also conveys information to children about parents' attitudes and values (Lefkowitz & Stoppa, 2006). More specifically, parents' comfort versus discomfort in communicating an LGB-affirming message could alter the meaning of the verbal message. Lefkowitz and Stoppa (2006) provide one example of an uncomfortable delivery style in which a daughter asked her mother about safer sex practices, and the mother immediately referred the daughter to a book with information about the topic, rather than engaging in a conversation. Lefkowitz and Stoppa (2006) suggest that this uncomfortable and indirect response style sent a message to the daughter that the topic was inappropriate or uncomfortable for discussion. This could prevent further parent-child communication about sex-related topics, including sexual orientation. Heisler (2005) found that sexual orientation was among the most avoided topics of sex-related parent-child communication. The researchers concluded that avoided topics may be those that are most "taboo," a message that is then passed on to children through avoidance of the topic. This is echoed by Calzo and Ward (2009), who presented an

illustrative example in which a parent did not discuss same-sex sexualities, and through this omission, the child learned that even discussing the topic was socially offensive and unacceptable. Shibley Hyde and Jaffee (2000) argue that in the absence of parent-child sexual communication, societal anti-gay narratives shape girls' sexualities by making same-sex sexuality invisible and encouraging traditional gender roles. Thus, it again appears that parents' silence and avoidance of LGB issues can be an important message on its own.

There are other components of sexual socialization than parents' verbal, nonverbal, direct, and indirect messages; one such component is parent modeling. Parents who model comfort with their own sexualities help to show their children that sexualities are a natural part of life. In contrast, parents who model discomfort with their own sexuality might communicate to their children that sexuality is embarrassing or inappropriate for discussion (Lefkowitz & Stoppa, 2006). For example, parents who are actively dating could model comfort or discomfort with their romantic relationships. Similarly, parents might use their own current or past experiences in order to highlight a point that they are trying to make in a discussion with their children about sexualities (Lefkowitz & Stoppa, 2006). A mother in a mixed-sex partnership might explain to a child that she has also previously dated or considered relationships with other women, demonstrating that it is appropriate to explore one's own sexual attractions. In these situations, sexual socialization is occurring based on a combination of verbal messages and parent modeling. Thus, there are a variety of ways for parents' own relationships to convey their attitudes and values to their children, regardless of the parents' current relationship status.

LGB parents are uniquely situated to provide positive role modeling of same sex relationships for their children, and again this socialization may occur separately from any

direct or indirect verbal messages that LGB parents might provide to their children. In an effort to avoid anti-LGB discourse about same-sex parenting, many researchers have minimized observed differences or argued that there is "no difference" between LGB and heterosexual parents (Stacey & Biblarz, 2001). Stacey and Biblarz (2001) suggest there is value in exploring the unique experiences of children of LGB parents. They propose that because LGB and heterosexual parents are uniquely situated in the sociopolitical landscape, their children inevitably will have different experiences, and that these differences are not necessarily negative (Baumrind, 1995). Instead, differences are often associated with distinctive positive outcomes for children of LGB parents. For example, MacCallum and Golombok (2004) suggest that adolescent children raised by lesbian parents from infancy tend to feel less restricted by traditional gender roles. Lesbian parents also tend to be affirming, open, and sensitive during parent-child communication about their children's sexual orientations and homoerotic relationships (Stacey & Biblarz, 2001). Goldberg (2007) found that adult children of LGB parents tended to view sexual orientation as existing on a continuum as compared to a dichotomy. They also were more likely to question their own sexuality instead of identifying as heterosexual without considering other possible sexual orientation identities. Additionally, three studies examined lesbian mothers' sex-related communication with their children. Each of these studies found that lesbian mothers aimed to teach their children about sexual diversity in order to help them to understand their options beyond heterosexuality (Cohen & Kuvalanka, 2011; Gabb, 2004; Mitchell, 1998). LGB parents also emphasized the importance of openness and honesty with their children about their own sexual orientations and relationships, achieved through both direct conversational means and non-verbal communication or modeling behaviors, such as

expressions of affection between parents. Mitchell (1998) describes this parenting model of openness and acknowledgement of a range of sexualities as a "gift" to children that can "inoculate" them from the possibility of internalized homophobia as they begin to develop their own sexual orientation identities. They further suggest that this model of parenting would be useful for heterosexual parents, mental health practitioners, and educators to use in supporting children in their sexual identity development. This is an important suggestion, particularly in the context of findings that heterosexual parents' messages tend to be markedly different from lesbian mothers' messages previously described. Martin (2009) found clear patterns of heteronormative messages among 640 mothers (the majority of whom identified as heterosexual with exception of two who identified as bisexual). The majority of mothers in the study assumed that children would be heterosexual, described adult romantic relationships to children as exclusively heterosexual, and did not discuss with their children the existence of non-heterosexual identities (Martin, 2009). Thus, modeling from LGB parents may result in more exploration of one's own sexual identity and more affirming attitudes toward diverse sexual identities, whereas heteronormative messages, which appear more prominent among heterosexual parents could serve to negatively impact children's attitudes about sexual orientation diversity.

3. Messages from parents of LGB children

The majority of the literature on parent-child communication about sexual orientation examines parental responses to children's disclosure of a sexual or gender minority identity (e.g. D'Augelli, Hershberger, & Pilkington, 1998; Savin-Williams & Dubé, 1998). Findings from this research tends to suggest that sexual minority youth

discuss their sexual identities with parents at varying rates and that parental reactions vary greatly from affirmation to rejection (Lefkowitz & Stoppa, 2006).

There is also emerging research about the experiences of LGBTQ youth whose parents also identify as LGBTQ. For example, Kuvalanka and Goldberg (2009) found that LGBTQ children of lesbian and bisexual mothers (also referred to as "second generation youth") reported a less difficult coming out process based on their parents encouraging self-exploration and questioning of sexual and gender identities. They also reported having a more comprehensive understanding of sexual orientation and gender identities, beyond traditional dichotomies. Many also reported no concern about rejection based on disclosure of sexual/gender identity to parents. Kuvalanka (2013) suggests that messages stemming from LGBTQ parents' identification, support, and acceptance might protect second-generation youth against pervasive societal homonegativity. Garner (2004) suggests that LGBTQ youth benefit from growing up with parents who are "out and proud" and model an affirming view of self rather than internalized homophobia. This may also have implications for LGBTQ youth of heterosexual parents; perhaps youth can be inoculated from societal homophobic attitudes through exposure to LGBTQ-affirming messages from heterosexual parents. Further, it is possible that youth who behave as allies to LGBTQ people may benefit from parents who provide positive role modeling of ally behaviors.

In contrast, LGBTQ parents of LGBTQ children may also pass messages on to their children promoting heterosexuality. Kuvalanka and Goldberg (2009) found that some second generation youth felt additional pressure from their lesbian and bisexual parents to identify as heterosexual in order to disprove the myth that "queer parents do indeed raise queer children," (p. 911). Additionally, second generation youth reported internalizing the

heterosexism their parents faced. Kuvalanka and Goldberg (2009) described one participant who witnessed his heterosexual father and stepmother making heterosexist comments about his mother, leading him to experience anxiety about identifying as gay himself. Combined, these studies suggest that LGBTQ children receive a wide variety of messages about sexual orientation from parents.

The preceding sections explored parents' sexual socialization of children, which has implications for youths' development of attitudes toward individuals, including themselves, who do not fit within dominant heterosexual narratives of sexual orientation. If parents avoid communication about sexual diversity or communicate negative attitudes toward LGB people, this could result in transmission of negative attitudes toward youth. In contrast, if parents communicate positive and affirming attitudes to their children, this could result in youth maintaining similar attitudes, regardless of their sexual orientation identity.

The next sections will review in detail three different types of attitudes (explicit, implicit, and behavioral) toward LGB people, as well as approaches to measuring each type of attitude and factors that contribute to each type of attitude.

B. Attitudes toward LGB People

The primary outcome variable of interest in this study is youths' attitudes toward LGB people. Attitudes can be assessed in a variety of ways, including through self-report measures that reflect explicit attitudes, implicit association tests that show implicit attitudes, and self-reported behaviors that reflect behavioral attitudes. Each type of attitude is important given that they each may have an impact on how heterosexual youth interact with LGB youth. Each of these types of attitudes is conceptually distinct and the literature related to the assessment and predictors of each will be described below.

1. Explicit attitudes

Explicit, self-reported, or controlled attitudes are the most frequently described in the psychological literature, as they are relatively simple to access and measure. Findings that U.S. youths (Stotzer, 2009) and adults (Pew, 2013) are reporting increasingly positive attitudes toward LGB people rely on measures of explicit attitudes toward LGB people.

In general, research has shown that in the United States heterosexual peoples' explicit attitudes toward LGB people are increasingly positive, which may reflect shifting social norms. Several public opinion polls, which rely on self-report data, demonstrate that the general public in the United States is supportive of "basic civil rights for gays and lesbians," (Herek, 2002; Sherrill & Yang, 2000), and younger and more educated Americans' attitudes have become less negative over the past 30 years (Herek & Capitanio, 1996).

(a) Measurement of explicit attitudes

Numerous measures of attitudes toward LGB people rely on self-report and are considered measures of explicit attitudes. One systematic review of interventions designed to increase positive attitudes toward sexual minorities among heterosexual people showed that all of the included studies used self-reported attitudes as the outcome variable(s) (Tucker & Potocky-Tripodi, 2006). Similarly, Grey et al.'s (2013) systematic review of attitude measures identified 17 instruments published in the academic literature from 1970 to 2012 that assess homophobia; all of these measures relied upon participants' self-reported attitudes. Among the numerous measures of explicit attitudes developed over the past several decades include the Index of Homophobia (IHP; Hudson & Ricketts, 1980), Heterosexual Attitudes toward Homosexuals (HATH; Larsen, Reed, & Hoffman, 1980),

Kite Homosexuality Attitude Scale (Kite & Deaux, 1987), Attitudes toward Lesbians and Gay Men – Revised (ATLG-R; Herek, 1988), Homophobia Scale (Bouton et al., 1987), Homophobia Scale (Roese, Olson, Borenstein, Martin, & Shores, 1992), Multidimensional Attitudes toward Homosexuality Scale (LaMar & Kite, 1998), Modern Homophobia Scale (MHS; (Raja & Stokes, 1998), Homonegativity Scale (HS; Morrison, Parriag, & Morrison, 1999), Homophobia Scale (Wright, Adams, & Bernat, 1999), Modern Homonegativity Scale (MHS; Morrison & Morrison, 2002), Homonegativity Scale – Short Form (Wrench, 2005), Multidimensional Heterosexism Inventory (Walls, 2008), Multidimensional Measure of Sexual Prejudice (Massey, 2009), and the Sexual Prejudice Scale (Chonody, 2013). The sheer volume of measures assessing self-reported or explicit attitudes toward LGB people suggests this form of attitude measurement is relatively simple to develop and administer.

Some debate exists about whether there is a difference between "old-fashioned" homonegativity and modern homonegativity, which are two conceptually unique types of explicit negative attitudes toward LGB people (Lottes & Grollman, 2010). According to Morrison and Morrison (2002), these are two distinct concepts that do not overlap; therefore explicit measures of old-fashioned and modern homonegativity should yield distinct results amongst participants. However, other research has shown that participants' responses to a measure of old-fashioned versus modern homonegativity did not significantly differ, with only 16% of the sample endorsing higher levels of modern homonegativity than old-fashioned homonegativity (Lottes & Grollman, 2010). Similarly, Grey, Robinson, Coleman, and Bockting (2013) noted that while many explicit attitude measures use the term "homophobia," the majority of these measures are actually assessing broad explicit attitudes toward LGB people, while still using the term "homophobia" out of tradition. Grey et al.

(2013) explain that the 17 attitude measures they reviewed are very consistent in each of their relationships with criterion measures, suggesting that regardless of the specific items used to assess the broad construct of explicit attitudes toward LGB people, the measures tend to be assessing a similar core construct. A distinction can also be made in terms of whether each of the previously mentioned self-report measures assess affective versus cognitive explicit attitudes. According to Katz (1960), there are at least two components of attitudes: affect (feelings about a target, which range in intensity) and cognitions (thoughts, opinions, or beliefs about a target, which may be specific or general). For example, some measures examine affective discomfort in interacting with LGB people whereas others assess cognitive opinions about LGB people and issues. Although explicit attitudes are relatively simple to design and administer, there are numerous subsets of explicit attitudes about LGB people that can be assessed using this approach.

(b) Factors associated with explicit attitudes

There are numerous factors that have been shown to predict people's explicit or self-reported attitudes toward LGB people and issues**.** Such factors include early childhood experiences, interpersonal contact with LGB people, sources of motivation to be non-prejudiced, and perceptions of peers' attitudes.

Early childhood experiences can contribute to heterosexual peoples' attitudes toward sexual minorities. A recent study examining the development of heterosexual adults' positive explicit attitudes toward LGB individuals found that many participants described early childhood experiences in which LGB people were "normalized" (Stotzer, 2009). About half of the participants reported that their parents influenced their attitudes. Of these participants, most indicated that their parents did not directly address sexual orientation, but

rather, transmitted implicit messages about their opinion based on how they referred to issues related to sexual orientation (e.g. correcting others who used sexual orientation terms in a derogatory manner). While the majority of these participants' parents were described as "open minded" and influential, some participants recalled developing LGB-affirming attitudes as an opposing reaction to their parents' negative attitudes toward LGB people. This research suggests that parents can provide a variety of messages through which children develop their own explicit attitudes. Research with adult heterosexual children of LGB parents showed that participants attributed their positive attitudes about and behaviors toward LGB people to their parents' influence and messages (Saffron, 1998; Goldberg, 2007). Parents' early messages aimed to increase children's open-mindedness and acceptance of human differences contributed to heterosexual children's positive explicit attitudes toward LGB people. Another study found that college students' attitudes toward their LGB peers in college were predicted by their pre-college attitudes toward LGB people (Liang and Alimo, 2005), again suggesting the importance of early parent messages on explicit attitude formation.

Interpersonal contact with LGB people is often cited as a contributor to positive explicit attitudes (e.g. Basow & Johnson, 2000; Bowen & Bourgeois, 2001; Hinrichs & Rosenberg, 2002), which is consistent with Allport's (1954) contact hypothesis. Liang and Alimo's (2005) study of heterosexual college students' attitudes toward LGB peers supports this hypothesis, demonstrating that college students' pre-college interpersonal contact with LGB people significantly predicted students' self-reported attitudes toward LGB peers during their first two years of college. Lemm (2006) found that heterosexual participants who reported having more and closer relationships with LGB people tended to report more

positive explicit attitudes toward gay men. Nelson and Krieger (1997) showed that in the classroom, students reported significantly more positive attitudes toward gay men and lesbians after a panel discussion with gay and lesbian guest speakers. A related intervention, hearing the personal stories of LGBT people, was also shown to have a positive effect on Israeli high school students' explicit attitudes (Eick, Rubinstein, Hertz, & Slater, 2016). An alternative view of the contact hypothesis is that more positive attitudes toward LGB people actually increase interpersonal contact, suggesting a reverse relationship than originally hypothesized. This possibility is supported by a longitudinal study which showed that increasingly favorable attitudes toward gay men and lesbians led to increased contact with gay men and lesbians (Anderssen, 2002).

Individuals who desire to demonstrate they are non-prejudiced toward various social groups may have a variety of motivations for non-prejudice; these different sources of motivation may have an influence on one's expression of explicit attitudes. Societal attitudes toward LGB people are rapidly shifting to become more favorable, as described above (e.g. Pew, 2013). It is possible that because it has become less socially acceptable to overtly express negative attitudes toward LGB people, heterosexual people are motivated to express attitudes consistent with socially acceptable views and therefore may endorse explicitly favorable attitudes (Lemm, 2006). Plant and Devine (1998) distinguish between internal and external motivation to be non-prejudiced; *internal* motivation is based on personally held values, whereas *external* motivation is based on social norms or forces that are external to the individual. They suggested that one or both of these sources could motivate people to hold non-prejudiced attitudes. Lemm (2006) demonstrated that participants' internal and external motivation to be non-prejudiced toward gay men both

predicted explicit attitudes. Participants with higher internal motivation reported significantly more positive explicit attitudes toward LGB people than participants with lower internal motivation (Lemm, 2006). They also found a marginally significant relationship between external motivation and explicit attitudes in the reverse direction; participants with greater external motivation to be non-prejudiced toward gay men actually expressed less favorable attitudes toward gay men (Lemm, 2006). Finally, they found that the predictive value of motivation was greater than the predictive value of interpersonal contact on explicit attitudes.

Perceptions of peers' attitudes can influence one's own explicit attitudes. Bowen and Bourgeois (2001) found that heterosexual college students' perceptions of their peers' attitudes toward LGB students affected their own attitudes. The concept of pluralistic ignorance suggests that individuals tend to believe that others' attitudes are different from their own. Given this discrepancy, individuals tend to alter their own attitudes and behaviors in order to be consistent with what they perceive to be majority beliefs. Consistent with this theory, Bowen and Bourgeois (2001) demonstrated that college students tended to report more positive attitudes toward LGB peers than they perceived their friends and typical students had. They also showed that college students in the same dormitory tended to have more similar attitudes, providing support for the idea that individuals tend to develop shared stereotypes and attitudes with their immediate social group (Bowen & Bourgeois, 2001).

2. Implicit attitudes

Implicit attitudes, sometimes referred to as automatic or unconscious attitudes that reflect internal cognitive processing, are less frequently discussed in the literature likely due

to the methodological challenges of measuring this latent variable. However, research has shown there are validity concerns with self-report measures of explicit attitudes, particularly for socially sensitive topics (see Greenwald, Poehlman, Uhlmann, & Banaji, 2009). Lemm (2006) explains that even when individuals report explicitly positive or non-prejudiced attitudes, bias may exist on a non-conscious or implicit level, suggesting the value of assessing implicit attitudes. Thus, theories and measures of implicit attitudes have been developed in response to the reality that explicit attitudes and behaviors toward LGB people have become more positive, yet less overt forms of prejudice toward sexual minorities persist (Dasgupta & Rivera, 2006). Given this context it appears that automatic prejudices and negative attitudes may be in effect (Dasgupta & Rivera, 2006). Steffens (2005) found that people in Western societies reported more moderate attitudes toward gay men and lesbians over the past 20 years, but postulated this shift in explicit attitudes may be related to changing social norms rather than personal attitude change, again highlighting the need to assess implicit attitudes.

Relative to explicit attitudes, little research has examined the impact of implicit attitudes toward sexual minorities on behaviors, however, related research has demonstrated that implicit attitudes about race can impact behavior. Research has consistently shown that implicit attitudes about race are better predictors of people's subtle behaviors toward racial minorities than explicit attitudes (Fazio, Jackson, Dunton, & Williams, 1995; Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001). The consistency of these findings suggests that parent implicit attitudes may in fact moderate the relationship between their verbal messages and their children's explicit attitudes.

(a) Measurement of implicit attitudes

Implicit attitudes are more challenging to assess than explicit attitudes because they are measured indirectly. Such indirect approaches include assessment of response latencies and non-verbal behaviors. The Implicit Association Test (IAT) has been the most widely used measure of implicit attitudes in the psychological literature to date, likely due to the relative ease of administration and established reliability compared to other implicit attitudes measures (Greenwald, McGhee, & Schwartz, 1998). Nosek et al.'s (2007) review of over 2.5 million IAT results demonstrated that implicit attitudes are pervasive across many groups of people and topics and that although implicit and explicit attitudes are generally positively related to one another, they represent distinct constructs.

The IAT allows researchers to assess participants' strength of association between two social groups (e.g. same sex and mixed sex couples) and evaluative terms (e.g. good and bad) by measuring the length of time it takes participants to pair each social group with a positive versus negative evaluative terms (Lemm, 2006). A sexual orientation IAT has been used as a measure of implicit attitudes toward same-sex sexualities in the psychological literature (e.g. Jellison, McConnell, & Gabriel, 2004). Sexual orientation IAT's can be designed using word stimuli and/or image stimuli (Lemm, 2006; Jellison et al., 2004). Although the IAT is a useful and widely used measure of implicit attitudes, it is not designed to be a "lie detector" that can reveal a person's "real" or "true" attitudes (Nosek, Greenwald, & Banaji, 2007). Nosek, Greenwald, and Banaji (2007) explain that there could be discrepancy between explicit attitude scores and IAT scores for several reasons, including (1) the individual uses introspection to develop their explicit response and is unaware of their implicit associations, (2) the individual is aware of their implicit associations, but

rejects them as part of their belief system and reports different explicit attitudes, or (3) the individual is aware of their implicit associations but reports different explicit attitudes to conform to social norms. They explain that only in the third scenario is the person "hiding" their true attitudes, which may be revealed by the IAT.

A close variant of the IAT, the Concept Association Task (CAT), can also be used to assess implicit attitudes. This approach relies on the same underlying theory as the IAT (Morrison, Harrington, & McDermott, 2010). With this approach, Morrison et al. (2010) assessed participants' attitudes toward bisexual people. Using the CAT, only the central concepts being assessed are used as word stimuli, which in this case were the terms "bisexual" and "heterosexual." The evaluative words with which participants are asked to make associations are more restricted in the CAT than in the IAT, in that only words that are direct synonyms for "good" or "bad" are used, rather than words such as "love" which may be associated with a group for reasons beyond a positive or negative evaluation of that group (Steffens, Kirschbaum, & Glados, 2008). According to Steffens et al. (2008) this is a psychometrically sound approach to measuring implicit attitudes.

Another approach to assessing automatic attitudes is using thought-listing procedures. According to Cacioppo and Petty (1981; as cited in Guth, Clements, Rojas, & Lopez, 2001) thought listing can be used as a cognitive assessment for a person's immediate thoughts in response to a stimulus, including marginalized social groups. Guth et al. (2001) used this approach to assess heterosexual college students' automatic attitudes by presenting participants with written situations involving LGB issues. After hearing each prompt, participants were asked to immediately list any thoughts that came to mind. The researchers found that thought listing allowed subtle attitude differences among participants to emerge

that were not captured on the co-administered Index of Attitudes toward Homosexuals (an explicit attitude measure; Hudson & Ricketts, 1980). Although more susceptible to social desirability bias than the IAT, this approach may be simpler for assessing automatic attitudes.

Finally, assessment of nonverbal behaviors could be used to assess implicit attitudes. For example, Dasgupta and Rivera (2006) used a nonverbal behavior coding scheme to assess participants' nonverbal behaviors toward a confederate. This coding scheme included six dimensions of nonverbal behaviors (eye contact, smiling, body posture, friendliness, comfort, and interest) as indicators of positive or negative behavior. This scheme has been used in past research assessing nonverbal behavior (e.g. Fazio et al., 1995; McConnell & Leibold, 2001).

(b) Factors associated with implicit attitudes

Because measurement of implicit attitudes is relatively infrequent, fewer studies have examined factors associated with implicit attitudes toward LGB people as compared to explicit attitude studies. This section will review the scant literature on factors associated with implicit attitudes toward LGB people. Factors discussed include interpersonal contact with LGB people, motivation to be non-prejudiced, and perceptions of intentionality.

As with explicit attitudes, increased interpersonal contact appears to be related to more positive implicit attitudes toward gay men. For example, Lemm (2006) found that participants with more gay friends tended to demonstrate more favorable implicit attitudes toward gay men. Participants who had at least one close relationship with a gay man showed significantly less implicit homonegativity than those who reported no close relationships with gay men (Lemm, 2006).

The source of one's motivation to be non-prejudiced also had an influence on implicit attitudes. Lemm (2006) found that, in contrast with explicit attitudes, only internal motivation for non-prejudice predicted participants' implicit attitudes toward gay men; there was a strong positive relationship between internal motivation and implicit attitudes. This echoes earlier research showing that participants high in internal and low in external motivation to be non-prejudiced toward African Americans tended to score lowest (representing least implicit bias) on two different response latency (implicit attitude) measures (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). These findings suggest that internal, but not external, motivation is a factor associated with implicit attitudes. Adding to these findings, Dasgupta and Rivera (2006) found that among participants who demonstrated implicit homonegativity, this only resulted in discriminatory behavior when participants did not hold conscious egalitarian beliefs or demonstrate an ability to self-monitor and control their behaviors. In other words, participants' conscious beliefs and awareness of their behavioral presentations disrupted their automatic negative beliefs about LGB people from leading to discriminatory behaviors.

Perceptions of intentionality have been shown to impact the relationship between explicit and implicit attitudes. Participants who reported intending to react in the way that they did to a measure of implicit attitudes toward gay men (e.g. endorsing the item: "My feelings toward the photos of homosexuals were intentional") showed a greater correspondence between their implicit and explicit attitudes, whereas participants who reported unintentionally responding to the implicit measure (e.g. endorsing the item: "I did not intent my feelings toward homosexuals") showed greater discrepancy (Cooley, Payne, & Phillips, 2013). An experimental manipulation of intentionality revealed the same pattern

and demonstrated that only if participants wanted to control their prejudice did their degree of perceived intentionality impact the correspondence between their implicit and explicit attitudes (Cooley et al., 2013). In other words, participants who desired not to appear prejudiced and believed their performance on the implicit attitude measure was intentional were more likely to endorse explicit attitudes that reflected their implicit attitude scores. This suggests that when participants believe measures of implicit attitudes reflect their intentional responses, they are more likely to then endorse explicit attitudes that reflect their implicit attitudes.

Given that little research has examined factors contributing to implicit attitudes about sexual orientation, it is also relevant to briefly review factors contributing to implicit attitudes about race. Castelli, Zogmaister, and Tomelleri (2009) used an implicit measure of preschool children's attitudes about race (African-American/black and European-American/white), as well as a race IAT and explicit attitudes about race measure for their mothers and found that mothers' implicit, but not explicit, attitudes significantly predicted preschool children's implicit attitudes about race. This finding lends support to the above stated hypothesis that mothers' implicit sexual orientation attitudes will moderate the relationship between their verbal messages and their children's attitudes toward LGB people. Furthermore, Castelli et al.'s (2009) study suggests that parent implicit attitudes are an influential factor on youths' implicit attitudes, potentially beginning at a very young age.

3. Behavioral attitudes

Bradburn, Sudman, and Wansink (2004) explain that there is a behavioral component of attitude measurement; this component refers to actions that a person might take which express their explicit or implicit attitudes. In the context of the current study, LGB ally

identity development could be considered a behavioral manifestation of youths' implicit or explicit attitudes, however, this is not typically how ally identity development has been described in the literature. LGB allies tend to engage in behaviors that demonstrate a person's positive attitudes toward LGB people and communities, such as contributing to the LGBT rights movement (Ayres & Brown, 2008), supporting and advocating for LGBT communities and causes (Stotzer, 2009), and maintaining interpersonal relationships with LGBT people (Sweat, 2005).

(a) Measurement of behavioral attitudes

Measures of LGB ally identity development could be used to assess a person's engagement with behaviors that demonstrate positive attitudes toward LGB individuals. For example, Ji and Fujimoto's (2013) measure of heterosexual LGBT ally development assesses different aspects of being an ally, including LGBT knowledge, attitudes, and skills, having interpersonal experiences with LGBT communities, and including LGBT ally as part of one's own identity. This measure is behaviorally focused, although it is self-report in nature. Another behavioral attitude measure is the Self-Report of Behavior Scale-Revised, which assesses self-reported avoidance and aggressive behaviors toward lesbian women and gay men (Roderick, McCammon, Long, & Allred, 1998). Grutzeck and Gidycz (1997) developed another behavioral measure that was designed to assess tolerance of lesbians and gay men. Tucker and Potocky-Tripodi (2006) suggested the validity of this measure is doubtful, which was echoed by Grutzeck and Gydycz (1997). A more recent measure of behavioral attitudes is Jones, Brewster, and Jones' (2014) LGBT Ally Identity Measure (AIM) which assesses through self-report one's skills in supporting LGBT people,

knowledge about LGBT issues, awareness of anti-LGBT oppression, and degree of behavioral action as LGBT allies in the community.

(b) Factors associated with behavioral attitudes

Numerous factors may be associated with heterosexual youth engaging in behaviors that demonstrate their positive attitudes toward LGB peers. Researchers have suggested that a number of early factors are associated with ally identity development in adulthood. These factors are cognitive (e.g. being a critical thinker; Borgman, 2009), emotional (e.g. developing confidence; Broido, 2000), behavioral (e.g. having opportunities to act as an ally; Broido, 2000), interpersonal (e.g. connecting with LGB peers; Liang & Alimo, 2005), and intrapersonal (e.g. exploring personal values and experiences; Borgman, 2009). Poteat (2015) identified several predictors of engaging in LGBT-affirming behaviors among high school students, including critical thinking, self-reflection, lower self-reported prejudice, having more LGBT friends, and past discussions of sexual orientation with peers. Youth of LGB parents often report that gay rights are a political issue to which they should be committed (Tasker & Golombok, 1995), are more committed to "queer politics" (Garner, 2004), and report higher levels of community activism for LGB rights (Goldberg, 2007). Goldberg (2007) proposes that LGB parents may communicate positive and affirming attitudes about sexual and gender diversity to their children, thus encouraging children to behaviorally challenge societal inequalities related gender identity and sexual orientation.

Several factors have been shown to relate to negative behaviors toward LGB people. Poteat et al. (2012) found that high school students who perceived their parents to have more negative attitudes toward sexual minorities were more likely to report engaging in homophobic behavior. The researchers also found that high school students with lower

empathic concern and less perspective-taking tended to report engaging in more anti-LGBT bullying and holding anti-LGBT attitudes (Poteat et al., 2012). In another study, Goodman and Moradi (2008) found that holding traditional gender role attitudes is related to engaging in rejecting behaviors toward lesbian women and gay men. They also identified right-wing authoritarianism (believing in submission to authority figures or rules, being aggressive toward out-groups, and adhering to societal norms) as a construct that was related to participants' explicit attitudes toward lesbian women and gay men. Specifically, they found that increased authoritarianism predicts negative explicit attitudes, which in turn predicts engaging in rejecting behaviors toward LG people (Goodman & Moradi, 2008). The authors suggest that the relationship between authoritarianism, explicit attitudes, and behaviors toward LG people could be reversed if submission to societal norms meant adhering to LG-affirming social norms.

Both implicit and explicit attitudes have also been shown to predict behavioral attitudes. A series of studies (see Fazio et al., 1995) found that automatic racial attitudes predicted people's subtle behaviors toward racial minorities more than explicit (controlled) attitudes, especially when they were behaviors of which the person was not aware (e.g. eye contact). Explicit attitudes might also be also a useful predictor of behavioral attitudes. Morrison and Morrison (2011) found that higher self-reported homonegativity (as measured by the Modern Homonegativity Scale; Morrison & Morrison, 2002) was predictive of "discriminatory behavioral intentions toward a gay, but not a straight mayoral candidate." Another study showed that individuals who scored higher on explicit measures of modern heterosexism were significantly more likely to approve of anti-LG hate crimes and less

likely to believe that hate speech directed at gay men and lesbians causes harm (Cowan, Heiple, Marquez, Khatchadourian, & McNevin, 2005).

In sum, parents provide a variety of messages that directly and indirectly transmit information about their sexual orientation attitudes. These parent messages could result in a process of sexual socialization through which youth develop a range of explicit, implicit, and behavioral attitudes toward LGB people.

III: Methods

A. Participants

Participants in this study included 23 mother-child dyads. A total of 30 mother-child dyads completed all of the procedures, however seven dyads were excluded from the present analyses based on exclusion criteria. Fathers were excluded from the study based on research showing that mothers more frequently discuss sexual orientation and LGB issues with their children than fathers (Rosenthal & Feldman, 1999).

Mothers in this study identified as heterosexual women. Regarding their current relationship status, mothers reported they were married to, partnered with, or dating a man (n = 20, 87.0%), single (n = 1, 4.3%), or divorced from a man (n = 2, 8.7%). One mother who identified as lesbian and her child completed the videotaped session and all measures, however this dyad was excluded from the present analyses because modeling being in a same sex relationship would likely impact a child's attitudes toward LGB people beyond the mother's verbal messages, as discussed in the above literature review. Further exploratory analyses will be conducted using this parent-child dyad's data at a later point. Mothers identified as European American/White (n = 19, 82.6%), Latino(a) or Hispanic (n = 5, 21.7%), American Indian/Alaska Native (n = 2, 8.7%), Asian (n = 1, 4.3%), and Other ("Filipino/White or Hapa;" n = 1, 4.3%). Mothers reported a range of education levels, including less than a high school diploma (n = 1, 4.3%), completed high school or GED (n = 2, 8.7%), some college, no degree (n = 5, 21.7%), completed bachelor's degree (n = 6, 26.0%), some graduate school (n = 2, 8.7%), and completed graduate or professional degree (n = 7, 30.4%). Additional descriptive data about mothers who participated in the study is available in Table 1.

Youth participants ranged from 14 – 18 years old (M = 15.39, SD = 1.12). They identified as European American/White (n = 20, 87.0%), Latino(a) or Hispanic (n = 4, 17.4%), Asian (n = 2, 8.7%), Native Hawaiian or Other Pacific Islander (n = 1, 4.3%), and Other ("Indian and Asian;" n = 1, 4.3%). In terms of gender identity, youth participants identified as boy/man (n = 11, 47.8%), girl/woman (n = 11, 47.8%), and transgender male (n = 1, 4.3%). Youth participants identified as heterosexual. Because this study was intended to assess the association between parent messages and heterosexual youths' attitudes toward LGB people, six parent-child dyads in which the youth identified as non-heterosexual were excluded from the present analyses. Additional descriptive data about youth participants is available in Table 1.

Participants learned about the study through a variety of recruitment efforts, including email listservs and outreach (n = 8, 34.8%), flyers (n = 6, 26.1%), in person recruitment at community venues (n = 4, 17.4%), online or social media (n = 2, 8.7%), word of mouth (n = 2, 8.7%), and newspaper advertisements (n = 1, 4.3%).

B. Coding of Qualitative Data

1. Parent sexual orientation messages

As described in the procedures below, parent-child dyads completed prompted conversations related to sexuality. The two final prompts, which yielded a total of ten minutes of conversation, were used for the parent sexual orientation messages measure:

(1) Imagine your child's friend revealed to your child that they are attracted to someone of the same sex. For the next five minutes, advise your child about what to do.

(2) Now, I'd like you both to talk for five minutes about whether you feel that a lesbian, gay, or bisexual person could be a role model for teenagers, including reasons why or why not.

Qualitative content analysis (Morgan, 1993) was used to measure verbal messages conveyed by mothers during these prompted conversations, which were video-recorded. The lead researcher trained a team of undergraduate research assistants to transcribe the conversations verbatim. Research assistants then audited one another's transcriptions. The lead researcher completed a final audit of the transcriptions before advancing to the coding stage.

Following transcription of parent-child conversations, the lead researcher trained a team of four undergraduate research assistants to identify any messages (termed "thought units") related to sexual orientation produced by the mother and child during these conversations. Thought units have been described as "sense units" or "units of meaning," and are intended to capture an idea that is communicated, regardless of whether the idea is in the form of a single word, phrase, or sentence (Auer-Srnka & Koeszegi, 2007). *Parent sexual orientation messages* were defined for the current study as "…any message from the parent that explicitly states something about sexual orientation. This may be an evaluative, observational, or assumptive statement." *Child sexual orientation messages* were defined in the same way, however they reflect thought units initiated by the child. For the purposes of this study, parent sexual orientation messages were the main unit of analysis, whereas child sexual orientation messages were coded to understand the context of parent messages and were not coded beyond identifying that they occurred. Additional analyses of child sexual orientation messages will be completed at a later point. Statements on the part of the mother

that reframed the discussion prompt (e.g. "Ok, so what do you think, can LGB people be role models?"), minimal encouragers (e.g. "Mhm"), and reflective listening statements (e.g. "Oh, ok I see.") were not considered sexual orientation messages. The lead researcher audited the research assistants' initial coding of sexual orientation messages and provided feedback to the research assistants regarding their coding throughout the initial phase of the coding process.

In the final stage of the coding process, the lead researcher trained three of the four undergraduate researchers to apply specific codes and descriptors to the parent sexual orientation messages. Based on a review of the literature, review of pilot and participant data, and consultation with experts in LGB issues and qualitative research, the lead researcher developed the following definitions of four categories of parent sexual orientation messages:

Positive/LGB-affirming: messages that explicitly affirm LGB people, their lives, behaviors, or relationships; messages that promote positive attitudes or behaviors toward LGB people.

Neutral: messages that are not non-affirming, yet not clearly affirming; messages that are not clearly positive or negative.

Heteronormative: messages that presume heterosexuality or mixed sex partnering for their child or others.

Negative/Anti-LGB: messages that implicitly or explicitly disaffirm LGB people, their lives, behaviors, or relationships; messages that promote negative attitudes or behaviors toward LGB people.

In addition to developing detailed definitions of the parent sexual orientation message categories, the lead researcher developed a detailed coding structure with a variety of specific descriptors that fell under each larger category (see Table 2). The lead researcher trained the team of research assistants in the coding structure, including the overarching categories and specific descriptors. Coding was completed using a fully crossed design, such that all three research assistants coded all participants. The lead researcher audited the coding throughout the coding process, allowing the three coders to argue to consensus. The lead researcher refined the category definitions and added or clarified specific descriptors as needed. In cases that the research assistants could not reach consensus, the lead researcher resolved the disagreement by consulting an external auditor who is an expert in LGB issues and qualitative research.

Interrater reliability was assessed using the kappa statistic, which ranges from 1 (perfect agreement) to 0 (agreement equivalent to chance; Viera & Garrett, 2005). As recommended by Hallgren (2012), kappa statistics were calculated for each pair of coders, with the means across the three pairs yielding a total kappa statistic of 0.631. This indicates substantial agreement, according to Landis and Koch (1977). In addition to a kappa statistic, intra-class correlations (ICC) were computed. Hallgren (2012) explains that ICC is a common statistic used to assess interrater reliability. In contrast to the kappa statistic, ICC accounts for magnitude of disagreement in computing reliability scores. Larger coding discrepancies (e.g. positive vs. negative code applications) result in lower ICC than smaller coding discrepancies (e.g. positive vs. neutral code applications). ICC values range from 1 to 0, with 1 indicating perfect agreement. A two-way fixed effect ICC was computed for the

three coders and yielded a Cronbach's alpha of 0.804, which is considered an excellent level of interrater reliability according to Cicchetti (1994).

With coding categories and descriptors identified, frequencies of each category and descriptor were calculated (see Table 2). Mothers received a total of four scores (one score for each category), based on the total frequency of each category across the two prompts. In cases that a mother did not issue any messages of a category, their score for this message type was "0." There was no upper limit regarding the total number of messages a parent could provide for each message type. As discussed in the results section, heteronormative and negative messages were collapsed into one variable and a positivity-negativity ratio was computed in order to standardize message scores across participants.

This study's approach to observing parent-child communication about sexual orientation was developed based on past research that examined Latina mothers' communication with their children about sexual health and contraception (e.g. Romo, Lefkowitz, Sigman, & Au, 2002; Nadeem, Romo, & Sigman, 2006). For example, Nadeem et al. (2006) coded video recorded conversations for explicit and implicit statements that mothers made about contraceptives and sexual health. Romo et al. (2002) suggest that an observational method of measuring parent messages related to sexuality is useful for capturing the complexity of this type of communication, as compared to less useful self-report measures of sexual communication. The current study used a similar approach to assess parent messages, however in this case messages were exclusively verbal messages related to sexual orientation.

2. Future relationship messages

Parent-child dyads also responded to a conversation prompt which stated, "Now, I'd like you to picture your child in a relationship that you want for them in the future. For the next five minutes, please talk about what you imagine this relationship or person would be like." This prompt was developed with the intention of being a third prompt to observe parent communication about sexual orientation. However, mothers offered very different types of messages in response to this prompt than the two prompts used to measure parent sexual orientation messages. Instead, this prompt was coded as a nominal variable that described mothers' expectations of their children's future romantic relationships. Based on the mother's messages about the future partner, their responses to this prompt were coded as one of the following:

(1) *Other sex partner:* Mother talked about future partner only as someone of a different gender.

(2) *Gender neutral partner:* Mother never indicated a gender of the future partner or only used gender neutral terms (e.g. partner).

(3) *Acknowledged possibility of same sex partner:* Mother explicitly acknowledged possibility of a same sex partner in the future.

C. Measures

1. Modern Homonegativity Scale (MHS)

The Modern Homonegativity Scale (MHS; Morrison & Morrison, 2002) was used to assess mothers' and youths' explicit attitudes toward LGB people. This is a 12-item measure designed to assess modern-day negative attitudes toward lesbians and gay men that are based on beliefs that lesbians and gay men have unnecessary demands for change,

discrimination against lesbian and gay people is no longer an issue, and that lesbian and gay people are responsible for their own marginalization (Fisher, 2011). Although the measure is traditionally provided with either "gay men" or "lesbian women" as the target group, for the purposes of the current study items were modified such that "LGB people" were the target social group (with LGB defined for participants prior to completing the measure). Unlike traditional measures of homonegativity, items on the MHS are more subtle and may allow participants to express negative attitudes without fear that they have been overtly prejudiced (Rye & Meaney, 2010).

Participants were asked to rate their agreement with items such as: *LGB people do not have all the rights they need* and *LGB people should stop shoving their lifestyle down other people's throats*, using a 5-point Likert type scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (5). According to Fisher (2011), this measure takes approximately five minutes to complete. This measure was scored by summing responses across all 12 items (after reverse scoring three items), which allowed for a range of scores from 12 (least negative attitudes) to 60 (most negative attitudes).

The MHS was selected over other explicit attitude measures (e.g. Hudson & Ricketts, 1980; Larsen et al., 1980; Herek, 1988) because items included in earlier measures of homophobia reflect social attitudes that have shifted since the 1980's (Andersen & Fetner, 2008). The MHS reflects such changes, which is consistent with current recommendations for assessing attitudes toward sexual minorities (Grey et al., 2013). Rye and Meaney (2010) compared Hudson and Ricketts' (1980) Index of Homophobia, Herek's (1988) Attitudes toward Lesbians and Gay Men, and the MHS, and found that although all three measures of homonegativity were correlated and had high convergent and discriminant

validity, the scores on the MHS were more normally distributed than the other two measures. This suggests that older measures of homonegativity may include items reflecting negative attitudes that have become more widely rejected by society and therefore may not be as sensitive in detecting varying attitudes as the MHS (Rye & Meaney, 2010).

The MHS has been reliably used with students and non-students, with alpha coefficients ranging from 0.81 to 0.95 (gay men as target) and 0.84 to 0.91 (lesbian women as target; Morrison & Morrison, 2002). In the current study, parent and youth responses to the MHS demonstrated a high level of inter-item consistency ($\alpha_{youth} = 0.919$; $\alpha_{parent} = 0.936$). A series of studies supported the construct validity of the MHS, demonstrating that scores on the MHS relate to measures of political conservatism, religious behaviors, religious self-schema, modern sexism, humanitarianism-egalitarianism, motivation to control prejudicial reactions, interpersonal contact, anti-fat attitudes, and prejudice toward Aboriginal men and women in the predicted directions (Morrison & Morrison, 2002; Morrison, Morrison, & Franklin, 2009; Morrison, Morrison, Harriman, & Jewell, 2008). In another study with Irish college students, Morrison, Kenny, and Harrington (2005) found that MHS scores had a positive relationship with old-fashioned and modern racism, patriotism, nationalism, religious fundamentalism, social dominance, and perceived political conservatism. Divergent validity of the MHS has also been established using confirmatory factor analysis, which showed that MHS items load onto a separate factor than items from another measure of traditional homonegativity (Morrison et al., 2009). Participants tended not to be influenced by social desirability bias when responding to the MHS (Morrison & Morrison, 2002). A complete list of items as adapted for the current study is provided in Appendix A.

2. Sexual Orientation Implicit Association Test

The implicit association test (IAT) is the most widely used measure for assessing implicit attitudes (Nosek, Smyth, et al., 2007). The IAT is a computerized measure that assesses participants' association between two target groups (individuals in same-sex and mixed-sex relationships) and positive versus negative concepts. The measure uses response latency (the time it takes participants to associate targets with concepts) to assess participants' implicit attitudes toward each target group. Response latencies are typically slower when the target and concept are incongruent with societal stereotypes (e.g. same-sex couples with positive concepts or mixed-sex couples with negative concepts), and faster when they are congruent with societal stereotypes (e.g. same-sex couples with negative concepts or mixed-sex couples with negative concepts). If a participant does not hold implicit attitudes that are congruent with societal stereotypes, their response latencies may be equal for each target, or even reversed.

In the current study, all parents and youth completed a sexual orientation IAT using standard IAT procedures (Nosek, Smyth, et al., 2007). Similar to Dasgupta and Rivera (2006), targets for the sexual orientation IAT were images of same-sex and mixed-sex couples. Following established scoring procedures, participant responses to the IAT were analyzed using a scoring algorithm to calculate *D* scores (Greenwald, Nosek, & Banaji, 2003). *D* scores range from -2 to +2, with higher scores reflecting greater implicit bias against same-sex couples (Hatzenbuehler, Dovidio, Nolen-Hoeksema, & Phills, 2009).

The sexual orientation IAT has been widely tested with U.S. participants (Nosek, Smyth, et al., 2007). Nosek et al. (2007) found that the sexual orientation IAT has predictive validity; among a group of lesbian and gay participants, higher IAT scores

predicted emotional dysregulation and psychological distress (Hatzenbuehler et al., 2009). Because the IAT is an indirect measure, it tends not to be influenced by social desirability or allow for "faking good" (Kim, 2003). Additionally, the effect sizes of IAT measures tend to be larger than effect sizes for explicit measures of the same construct (Nosek, Greenwald, & Banaji, 2005). Stimulus materials for the sexual orientation IAT are included in Appendix B (Nosek, Smyth, et al., 2007).

3. The LGBT Ally Identity Development Instrument (LGBT-AID)

All youth completed a measure of ally identity development. Ji and Fujimoto (2013) developed a measure of heterosexual LGBT Ally Identity Development (LGBT-AID), which is based on LGBT Ally Identity Development Theory (Ji, Du Bois, & Finnessy, 2009). The authors state that LGBT people can also measure their ally identity development using the LGBT-AID, as people who identify as LGBT may or may not identify as allies to LGBT communities (Ji & Fujimoto, 2013). The measure assesses various domains of being an LGBT ally, including LGBT knowledge, attitudes, and skills, having interpersonal experiences with LGBT communities, and including LGBT ally as part of one's own identity. In total, this is a 53-item measure that uses a 4-point Likert type scale with categories labeled: does not apply to me, applies to me somewhat, applies to me, and applies to me very much. These identity labels are intended to reflect increasing representations of one's identity as an LGBT ally. Ji and Fujimoto (2013) found support for the content, substantive, and structural validity, as well as the generalizability of the measure's two dimensions. Scoring this measure involves identifying Rasch scores ranging from -8.11 (most negative) to 8.09 (most positive) based on the sum of each participants' raw scores. The authors highlighted that Rasch analysis yields data that is on a true interval scale, rather

than an ordinal scale. Higher scores on this measure reflect greater levels of ally identity development and therefore more positive behavioral attitudes.

The LGBT-AID includes two major dimensions: (1) internal and interpersonal and (2) activity. The 38 items of the internal and interpersonal dimension reflect participants' internal beliefs and attitudes, as well as feedback participants have received through interpersonal interactions about their skills and contributions as LGBT allies. Items on this dimension include *I have explored how I can be an LGBT ally*, *I can demonstrate my knowledge of LGBT topics*, and *I tell others that I support my LGBT friends*. Ji and Fujimoto (2013) suggest that due to the length of the measure, it may be preferable to select one dimension to administer. They state that each of the two dimensions can be used individually, depending on the aims of the study and needs of the researcher. They also noted that in the measure's current form, they recommend using the internal and interpersonal dimension because this dimension is more likely to capture the range of LGBT ally behaviors (Ji & Fujimoto, 2013). Based on the needs of this study and Ji and Fujimoto's (2013) recommendation, only the 38 items from the internal and interpersonal dimension were administered. In the current study, youth responses to this dimension of the LGBT-AID demonstrated a high level of inter-item consistency ($\alpha = 0.979$). The complete measure is attached in Appendix C.

4. Demographics

All youth and mothers completed a demographic questionnaire with items assessing gender, race/ethnicity, socioeconomic status, sexual orientation, religion, and religiosity. In addition, mothers were asked to identify their highest level of education and current relationship status.

(a) Outness

Youth completed an item that assessed the degree to which their mother was aware of their sexual orientation identity, which can be considered outness. This single item asked participants to indicate their outness to their mother by selecting from a 7-point Likert type scale ranging from 1 (my mother definitely does not know my sexual orientation) to 7 (my mother definitely knows my sexual orientation and it is openly talked about). This single item measure was developed as an adaptation of Mohr and Fassinger's (2000) Outness Inventory. Ultimately, this item was not used for the purpose of the current study.

(b) Interpersonal Contact with LGB People

Parents and youth were asked to indicate "the number of gay/lesbian/bisexual friends, relatives or acquaintances you have," which was intended to measure degree of interpersonal contact with LGB people. This item was developed based on Lemm's (2006) measure of interpersonal contact with LGB people.

(c) Comparison to Past Conversations

Youth and parents were asked to indicate whether, prior to the prompted conversations in the study, the mother had talked to the child about dating, sexual orientation, relationships, marriage, starting a family, contraception, sexually transmitted infections, or none of these topics. Youth and parents also completed an item in which they indicated their perceived degree of similarity of the video-recorded conversations with past conversations about similar topics with one another. Participants were given an open-response question in which they were asked to describe in what ways the study conversations were similar or different from past conversations. Responses to the open-ended question were not analyzed for the purposes of this study, but rather were used as

context to understand responses to the prior question regarding perceived degree of similarity to past conversations. The purpose of these items was to explore whether the parent sexual orientation messages measured in the study were representative of mothers' typical messages outside of the research setting.

Youth and parent demographic questionnaires are provided in Appendices D and E.

D. Procedures

The lead researcher and a team of undergraduate research assistants recruited participants through a variety of recruitment efforts. The research team engaged in active (in person) recruitment by sharing information about the study directly to teens and parents in community venues (e.g. public parks, museums, activity centers, movie theaters, tutoring programs, coffee shops, community centers) and events (e.g. local public sporting events, parades, arts events). Additionally, information about the study was posted on local parent and teen websites, community calendars, and social media. Advertisements for the study were published in three local newspapers. Flyers for the study were posted in numerous community venues and distributed at high school events (e.g. high school performances). The lead researcher sent recruitment emails to numerous teen, parent, and family serving organizations, with requests to forward study information to the organizations' memberships.

When research team members engaged in active recruitment, they briefly described the study, stating that participants would be asked to talk about relationships, dating, sexuality, sexual orientation, marriage, and families, then would respond to 2-3 brief questionnaires, as well as complete a brief matching activity. Recruiters also explained that only mothers with a child (any gender) who is currently between the ages 14 and 18 were

eligible to participate. Finally, the benefits of participating in the study were described, emphasizing that their participation would inform parent-child communication training and that they would earn a $15 cash or gift card incentive each ($30 per parent-child dyad). The recruiters carried flyers about the study and sign up sheets where youth or parents could provide their name and phone number to be contacted by the lead researcher for more information. Prospective participants were given a link to a website where they could view the inclusion criteria for the study, a brief video of the lead researcher describing the study, and contact information for the lead researcher. Although from a research design perspective, it would have been preferable to include children of one gender, for the purposes of the current study, there was not inclusion criteria related to children's gender. The inclusion criteria did not state that eligible mothers would identify as heterosexual because this could prime all prospective participants for sexual orientation and impact the results of the study.

The lead researcher contacted all prospective participants by phone. Upon calling, the prospective participants were reminded that they signed up to receive more information about a UCSB parent-child study. They were provided with a brief description of the study, requirements for participation, and incentive information. The lead researcher completed the phone screening with mothers and their children, explaining that participation involved being confidentially video-recorded, and obtained verbal consent and assent from the mother and child. If they verbally consented to participating in the study, the lead researcher scheduled an appointment time and provided directions to the research site. Reminder calls were offered and provided as requested. Reminder calls were another opportunity for participants to ask questions about the study.

The lead researcher conducted all research sessions in person at a university mental health clinic. Research sessions lasted approximately one hour and involved (1) reviewing and obtaining informed consent and assent, (2) completing video-recorded prompted conversations together, (3) completing the computerized IAT separately, (4) completing the MHS, LGBT-AID (youth only), and demographic questionnaires separately, and (5) debriefing from the study together with the lead researcher.

During the consent process, the lead researcher explained the process and purpose of the research session and provided general information about the study. Participants were invited to ask questions prior to beginning the study and were informed that they could ask questions later as well. The majority of participants' questions involved seeking more information about the study's purpose and potential applications, as well as logistical questions. Parents provided written and verbal informed consent and children provided written and verbal assent, indicating their awareness that their conversations would be video-recorded and kept confidentially. Participants were informed that they had the right to refuse to continue their participation at any point in the study without loss of their incentive. All participants elected to complete the full study.

During the video-recorded prompted conversations, the lead researcher introduced a series of four prompts for the mother-child dyad to discuss for five minutes each. Prior to conducting the full study, five prompts were pilot tested with two parent-child dyads. After reviewing the pilot test results, four prompts were selected and/or modified for the final procedures. The lead researcher used the following prompts in the final procedures: (1) For the next five minutes, I would like you to talk about activities you enjoy doing with your family; (2) Now, I'd like you to picture your child in a relationship that you want for them in

the future. For the next five minutes, please talk about what you imagine this relationship or person would be like; (3) Imagine your child's friend revealed to your child that they are attracted to someone of the same sex. For the next five minutes, advise your child about what to do; (4) Now, I'd like you both to talk for five minutes about whether you feel that a lesbian, gay, or bisexual person could be a role model for teenagers, including reasons why or why not. The first prompt was a warm up prompt, the second prompt was used to assess parents' future relationship expectations, and the third and fourth prompts were used to measure parent sexual orientation messages. In order to avoid influencing the conversations the lead researcher left the room after providing each prompt and returned after the five-minute conversation was completed. All communication from each prompt was video-recorded.

All youth then completed three quantitative measures to assess explicit, implicit, and behavioral attitudes toward LGB people: (1) Modern Homonegativity Scale (MHS; Morrison & Morrison, 2002), (2) Sexual Orientation Implicit Association Test (IAT; Dasgupta & Rivera, 2006), and (3) LGBT Ally Identity Development (Ji & Fujimoto, 2013) and the youth demographic questionnaire. Mothers completed two quantitative measures to assess explicit and implicit attitudes toward LGB people: (1) Modern Homonegativity Scale (MHS; Morrison & Morrison, 2002) and (2) Sexual Orientation Implicit Association Test (IAT; Dasgupta & Rivera, 2006) and the parent demographic questionnaire. Youth and parents completed all of these measures individually (in separate rooms) for privacy. Participants were informed prior to completing the attitude measures and demographic questionnaires that their responses would be kept private from one another.

Before participants left, the lead researcher facilitated a debriefing with the mother-child dyad. The researcher thanked participants for their contributions to the study, provided their incentives, and responded to any questions or concerns from participants. Participants were often interested in learning more about the study and additional information was provided as requested. In addition, the researcher provided a list of local low-cost mental health organizations and LGBT resource centers as well as online resources in the event that the parent or child wanted to further explore any issues brought up by participation in the study.

IV: Results

A. Preliminary Analyses

Prior to conducting the planned hypothesis testing and exploratory analyses, descriptive statistics of parent and youth scores on the main study variables were computed (see Tables 3 and 4). A series of preliminary correlations across all main study variables were conducted to explore relationships among the variables. A correlation table with the results of these preliminary analyses is available in Table 5. As stated above, frequencies of each type of parent sexual orientation message are reported in Table 2.

During the planning stages of the study, it was anticipated there would be a clear distinction between heteronormative and negative messages. However, after completing the coding process it was apparent that negative messages ranged in terms of their degree of negativity, with some negative messages being very similar to heteronormative messages. Because there was not as clear of a distinction between these two message types as expected, heteronormative and negative messages were collapsed into a single variable, called "negative messages" for the purposes of the current study. Separating heteronormative and negative messages reduced the degree to which these variables were normally distributed, which was amended by combining the two variables into one. Although heteronormative messages may be less intentional than negative messages, they both have a negative valence, which further supported this research design decision. This collapsed variable mirrored the positive message variable, in that positive messages varied in degree of positivity, but were still treated as a single variable. Hereafter, negative and heteronormative messages will be referred to simply as "negative" messages.

To standardize and account for the wide range of total parent sexual orientation messages (*MIN* = 15; *MAX* = 47), ratios and proportions were computed for positive, neutral, and negative messages. The main unit of analysis in this study will be the positivity-negativity ratio (hereafter referred to as the PNR) of parent messages, which was computed by dividing the total frequency of positive messages by the combined total frequency of positive and negative messages. This approach to measuring communication was modeled after couples communication research (e.g. Carrère & Gottman, 1999; Gottman, Coan, Carrere, & Swanson, 1998; Gottman, 1993). For example, Gottman et al. (1998) computed a positive-to-negative affect ratio model, such that total positive affect was compared to the total positive and negative affect combined. Generating the PNR highlights the balance of positive and negative messages that mothers provided during the prompted conversations, however it excludes neutral messages. This was justified on the basis that preliminary correlation analyses did not show a relationship between neutral messages and youth attitudes (see Table 5). Preliminary analyses revealed that six mothers provided only positive messages and therefore received a PNR score of 1.0, whereas all other participants provided some negative messages. This demonstrates that there was not a restricted score range on the PNR. To account for the presence of neutral messages, additional exploratory analyses examined the relationships between positive and negative message proportions (which account for number of neutral messages) and youth attitudes. These results are reported in the exploratory analyses section. Frequencies of parent sexual orientation message descriptors are reported in Table 2, however message descriptors were not analyzed beyond this level for the purposes of the current study.

Preliminary analyses also explored the frequency of parent sexual orientation messages that were initiated by the parent as compared to parent sexual orientation messages that were initiated by the child. Parent-initiated messages refer to messages that the parent started independently. For example, if the parent introduced a new idea that the child had not started, this was coded as a parent-initiated message. Child-initiated messages refer to parent sexual orientation messages that stemmed from the child's prior comment. For example, if a parent agreed and elaborated on a child's prior idea, without adding new ideas, this was coded as a child-initiated message. Parent-initiated messages were more frequent (M = 27.56; SD = 9.04) than child-initiated messages (M = 5.08; SD = 3.96). This suggests that parents' ideas about sexual orientation tended to drive the conversations.

In addition, prior to analyzing the results of the parent-child conversations, the degree to which mothers' messages in the study reflected their typical messages in a non-research setting was evaluated. One item on the parent and child demographic questionnaires assessed the degree to which the conversations in this study reflected past conversations between the parent-child dyads. The majority of youth (n = 18, 78.2%) reported that the prompted conversations were either very or somewhat similar to past conversations they had with their mother about the study's topics. Youth less often reported the conversations were somewhat different from past conversations (n = 3, 13.0%), with one youth participant reporting they did not know if the conversation was similar or different and another indicating that they had never discussed these topics before. Most mothers also reported the conversations were very or somewhat similar to past conversations (n = 17, 73.9%). Two mothers (8.6%) reported the conversations were somewhat or very different. One mother indicated that she and her child had never discussed these topics before. A

paired samples *t*-test revealed no significant differences in child and parent ratings of similarity to past conversations $t(18) = 1.14$, $p = 0.27$. These findings suggest the prompted conversations had external validity, in that overall they seemed to reflect parents' usual sexual orientation messages outside of the research setting.

B. Main Analyses

False discovery rate (FDR) control was used in order to control the error rates involved in conducting multiple hypothesis tests (Glickman, Rao, & Schultz, 2014). According to Glickman et al. (2014), the false positive rate refers to the "probability of rejecting a null hypothesis given that it is true, while the false discovery rate is the probability that a null hypothesis is true given that the null hypothesis has been rejected," (p. 851). The Bonferroni procedure, which controls the family-wise error rate, is the most common method of correcting for multiple testing (Noble, 2009). However, researchers have begun to question the Bonferroni procedure's conservative impact on statistical power and resulting increase in Type II errors, instead recommending alternatives such as FDR control (Aickin & Gensler, 1996; Noble, 2009; Verhoeven, Simonsen, & McIntyre, 2005). Glickman et al. (2014) argue that because the Bonferroni procedure controls the family-wise error, it is not designed to estimate *p*-values for individual tests; instead, they recommend controlling the FDR as a way of controlling error at the individual test level. With these recommendations, FDR estimates were computed from the observed *p*-values using the Benjamini-Hochberg (BH) procedure. Results of the BH procedure and corresponding significance testing results are reported in Table 6.

A complete summary of all of the hypothesis testing results and exploratory analyses reported below is listed in Table 7.

Hypothesis 1: Mothers' verbal messages (positive, neutral, heteronormative, negative) will be significantly associated with youths' explicit attitudes about LGB people, such that positive and neutral parental messages will be associated with more positive youth explicit attitudes, whereas negative and heteronormative parental messages will be associated with more negative youth explicit attitudes.

As stated above, heteronormative and negative messages were collapsed and the main unit of analysis for parent messages is the PNR. Neutral messages were not assessed based on the preliminary analyses. Therefore, this analysis examined the results of youth explicit attitudes regressed on the PNR. Prior to running the regression analysis, the assumptions of linear regression were assessed. It appeared there was a linear relationship between the PNR and youth explicit attitudes, evidenced by inspection of a scatterplot of the two variables. The scatterplot did not reveal any outlying data points; relatedly, there were no outlying standardized residuals beyond three standard deviations. There was independence of residuals, demonstrated by a Durbin-Watson statistic of 1.845. Visual inspection of a scatterplot of standardized residuals and standardized predicted values showed homoscedasticity. Residuals appeared to be approximately normally distributed, evidenced by visual inspection of a regression standardized residual histogram and a normal probability plot of standardized residuals. The results of the linear regression showed that the PNR approached, but did not reach, significance in its association with youth explicit attitudes, $F(1, 21) = 5.336$, $p = .031$, based on the FDR-adjusted p-value of 0.02. However, the regression model showed a medium effect size (Cohen, 1992), in that the PNR explained 20.3% of the variance in youth explicit attitudes with adjusted $R^2 = 16.5\%$. With the analysis using a small sample and showing a medium effect size, it appears that a larger ratio

of positive parent messages was associated with more positive youth explicit attitudes. Hypothesis 1 was partially supported; the regression model approached significance and the medium effect size supports that there is a relationship between these variables.

Because the preliminary analyses demonstrated a significant correlation between youth explicit attitudes and youth religiosity, $r(20) = 0.603$, $p = .005$, this regression model was conducted again while controlling for youth religiosity. Only 20 of 23 youth participants completed the religiosity measure, therefore this analysis includes a subset of the participants. First, the original regression model, which examined youth explicit attitudes regressed on the positivity ratio, was conducted again with the smaller subset of data ($n = 20$). The results of this analysis showed that parent messages again approached significance in its association with youth explicit attitudes, $F(1, 18) = 5.489$, $p = .031$, with a medium effect size of 23.4% of the variance in youth explicit attitudes explained, adjusted $R^2 = 0.191$.

Next, youth religiosity was added to the regression model to explore whether parent messages were associated with youth explicit attitudes while controlling for youth religiosity. Assumptions of multiple regression were assessed first. The first two assumptions were met by using a continuous dependent variable (youth explicit attitudes) and two continuous independent variables (youth religiosity and the PNR). There was independence of observations, demonstrated by a Durbin-Watson statistic of 1.679. There appeared to be both approximate homoscedasticity and an approximately linear relationship between the dependent variable (youth explicit attitudes) and the combined independent variables (youth religiosity and the PNR), evidenced by visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Visual inspection of

scatterplots illustrating the relationship between each independent variable and the dependent variable demonstrated approximately linear relationships. There was no evidence of multicollinearity, demonstrated by a tolerance level of 0.866. There were no outlying standardized residuals greater than ±3 standard deviations, nor were there problematic leverage points or influential points. Visual inspection of a histogram and normal P-P plot suggested the residuals were approximately normally distributed.

A multiple regression examined youth explicit attitudes as the dependent variable regressed on the PNR and youth religiosity. The overall regression model showed a statistically significant relationship between the combined independent variables and youth explicit attitudes, $F(2, 17) = 6.776$, $p = 0.007$. The overall model statistically accounted for 44.4% of the variance in youth explicit attitudes (Adjusted $R^2 = 37.8\%$), a large effect size according to Cohen (1992). When youth religiosity was added to the original regression model as a control variable, parent messages were not significantly associated with youth explicit attitudes ($p = 0.137$), whereas youth religiosity was significantly associated with youth explicit attitudes ($p = 0.021$). This shows that youth religiosity is also an important variable in understanding the range of youth explicit attitudes.

Hypothesis 2: Given that hypothesis #1 is supported, parents' implicit sexual orientation attitudes will moderate the relationship between positive parent messages and youth attitudes, such that the relationship between positive parent messages and youth explicit attitudes will be weaker among parents who hold more negative implicit attitudes.

This hypothesis was tested using a moderation model, such that the PNR was the independent variable, youth explicit attitudes was the outcome variable, and parent implicit attitudes was the moderator variable.

Although parent implicit attitudes is a continuous variable, for the purpose of the present analysis it was transformed into a dichotomous dummy variable, in which parents were either categorized as (1) having no implicit bias or an implicit preference for LG people or (2) having an implicit preference for heterosexual people. This procedure was conducted because the statistical power of moderation analyses in which both the predictor variable and moderator variable are continuous tend to be low (McClelland & Judd, 1993), which was a relevant concern due to the small sample size. To increase the power of the moderation analysis, parent scores on the IAT were dichotomized based on established cutoffs for what constitutes a biased preference for heterosexual people versus non-bias or a biased preference for LG people.

Prior to testing the moderation, the assumptions of a moderation analysis were assessed. The first four assumptions pertain to study design. These assumptions were met by using a continuous dependent variable (youth explicit attitudes), a continuous independent variable (PNR), a dichotomous moderator variable (parent implicit attitudes, dichotomized), and data that had independence of observations. The other five assumptions of a moderation analysis pertain to the data being used for the analysis. Initially, multicollinearity was a concern, evidenced by tolerance values less than 0.1. The independent variable (PNR) was mean centered to reduce multicollinearity (Kromrey & Foster-Johnson, 1998) and re-analyzed. After mean centering, there was no evidence of multicollinearity, demonstrated by tolerance values no less than 0.724. Visual inspection of

a scatterplot showed the assumption of linearity was met. There were no outlying studentized deleted residuals greater than three standard deviations, nor were there leverage points or influential cases. Visual inspection of a scatterplot of the studentized residuals and predicted values showed homoscedasticity. Shapiro Wilk's test indicated the studentized residuals were approximately normally distributed ($p > 0.05$). It should be noted that Shapiro Wilk's test results neared significance. Therefore, although the data met the assumption of normality, this analysis should be interpreted with caution.

A hierarchical multiple regression was run to determine whether variance in youth explicit attitudes explained by the PNR increased by adding an interaction term between the PNR and parent implicit attitudes to the main effects regression model. Parent implicit attitudes did not significantly moderate the relationship between the PNR and youth explicit attitudes, evidenced by a non-significant increase in total variance explained of 6.7%, $F(1, 19) = 1.779$, $p = 0.198$. Although the hypothesized moderating effect of parent implicit attitudes was not significant, there were non-significant trends in the expected directions. Figure 1 shows that children tended to report more positive explicit attitudes when their parents had a higher PNR *and* did not have an implicit bias against LGB people. In contrast, children reported less positive explicit attitudes when their parents had a higher PNR, but had an implicit bias against LGB people. Given the small effect size of the moderation analysis ($R^2 = 6.7\%$), it is possible that with a larger sample size these analyses would have yielded significant results. The hypothesized moderating role of parent implicit attitudes was not supported in this analysis, however the observed patterns of the data were in the hypothesized directions.

Hypothesis 3: Mothers' verbal messages (positive, neutral, heteronormative, negative) will be significantly associated with youths' implicit sexual orientation attitudes, such that positive and neutral sexual orientation messages will be associated with more positive youth implicit attitudes, whereas negative and heteronormative parental messages will be associated with more negative youth implicit attitudes.

As stated above, heteronormative and negative messages were collapsed and the main unit of analysis for parent messages was the PNR. As stated above, neutral messages were not analyzed. This hypothesis was tested by conducting a linear regression, with youth implicit attitudes (IAT scores) as the dependent variable and the PNR as the independent variable.

Assumption testing was completed prior to running the main analysis. It appeared there was a linear relationship between the PNR and youth implicit attitudes, evidenced by inspection of a scatterplot of the two variables. The scatterplot did not reveal outlying data points and there were no outlying standardized residuals beyond three standard deviations. There was independence of residuals, evidenced by a Durbin-Watson statistic of 2.060. Homoscedasticity was established through visual inspection of a scatterplot of standardized residuals and standardized predicted values. Residuals appeared normally distributed, demonstrated through visual inspection of a histogram and a normal probability plot of regression standardized residuals. The results of the linear regression showed the PNR did not have a significant relationship with youth implicit attitudes, $F(1, 21) = 0.469$, $p = 0.501$. Effect sizes were examined in spite of the non-significant results due to the low power of this analysis. The PNR explained 2.2% of the variance in youth explicit attitudes, with an adjusted $R^2 = -2.5\%$, which is a small effect size according to Cohen (1992). The non-

significant result combined with this small effect size suggests this analysis correctly accepted the null hypothesis. The results of this analysis do not support hypothesis 3.

Hypothesis 4: (A) Mother's verbal messages (positive, neutral, heteronormative, negative) will be significantly associated with youths' behavioral attitudes. (B) It is predicted that the parent messages will statistically explain a larger portion of the variance in youth explicit attitudes than youth behavioral attitudes. (C) Further, it is predicted that youth explicit attitudes will mediate the relationship between parent messages and youth behavioral attitudes.

Part A of this hypothesis was tested by conducting a linear regression, with youth behavioral attitudes as the dependent variable and the PNR as the independent variable. As stated above, heteronormative and negative messages were collapsed and neutral messages were not analyzed.

The assumptions of linear regression were assessed. There appeared to be a linear relationship between the PNR and youth behavioral attitudes, evidenced by inspection of a bivariate scatterplot. The scatterplot did not reveal outlying data points and there were not outlying standardized residuals beyond three standard deviations. There was independence of residuals, with a Durbin-Watson statistic of 2.211. Visual inspection of a scatterplot of standardized residuals and standardized predicted values demonstrated homoscedasticity. Residuals appeared approximately normally distributed, indicated by visual inspection of a regression standardized residual histogram and a normal probability plot of standardized residuals. The results of the linear regression showed the PNR neared, but did not reach, significance in its association with youth behavioral attitudes, $F(1, 21) = 4.866$, $p = 0.039$, based on the FDR-adjusted p-value of 0.025. However, the regression model showed a

medium effect size (Cohen, 1992), in that the PNR accounted for 18.8% of the variance in youth behavioral attitudes with adjusted R^2 = 14.9%. Given the small sample size and medium effect size, it appears that a higher PNR was associated with more positive youth behavioral attitudes. Hypothesis 4a was partially supported by a regression model that approached significance and had a medium effect size.

Part B of this hypothesis was assessed by comparing the effect sizes (R^2) of the linear regressions tested in hypothesis 1 and hypothesis 4a. It appears the PNR had a larger effect size in its relationship with youth explicit attitudes (R^2 = 20.3%) as compared to youth behavioral attitudes (R^2 = 14.9%). The PNR explained more variance in youths' explicit attitudes than their behavioral attitudes. Part B of hypothesis 4 was supported.

Part C of this hypothesis was assessed using Baron and Kenny's (1986) approach to testing mediation. This mediation model evaluated youth explicit attitudes as a possible mediator of the relationship between the PNR and youth behavioral attitudes.

Baron and Kenny (1986) recommend a four-step process in order to test a possible mediator variable. The first step is showing a significant relationship between the independent and dependent variable. Step one was completed in hypothesis 4, part A; the PNR approached significance in its relationship with youth behavioral attitudes, with a medium effect size. The second step is establishing a significant relationship between the independent variable and mediator variable. Step two was completed in hypothesis 1; the PNR approached significance in its relationship with youth explicit attitudes, with a medium effect size. These relationships approached, but did not reach, significance, however the combination of small sample sizes, low *p*-values of each analysis, and medium effect sizes, justified moving forward with the mediation analysis.

Prior to completing the remaining steps of the mediation model, the assumptions of multiple regression, which is the final step of the mediation, were tested. The first two assumptions are related to study design and were met by using a continuous dependent variable (youth behavioral attitudes) and two continuous independent variables (youth explicit attitudes and the PNR). There was independence of residuals, demonstrated by a Durbin-Watson statistic of 2.383. There appeared to be both homoscedasticity and a linear relationship between the dependent variable (youth explicit attitudes) and the combined predictor variables, evidenced by visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Visual inspection of scatterplots showing the relationship between each predictor and youth explicit attitudes demonstrated a linear relationship between the individual predictors and youth explicit attitudes. There was no evidence of multicollinearity, demonstrated by a tolerance level of 0.797. There were no outlying standardized residuals greater than three standard deviations, nor were there problematic leverage points or influential points. Visual inspection of a histogram and normal P-P plot suggested the residuals were approximately normally distributed. Overall, the assumptions for multiple regression were met and the analysis proceeded to step three.

Step three of testing a mediation model involves showing the mediator variable (youth explicit attitudes) is associated with the outcome variable (youth behavioral attitudes), when accounting for the independent variable (the PNR). In order to test this, a multiple linear regression was conducted, with youth behavioral attitudes regressed on both the PNR and youth explicit attitudes. The overall multiple regression model was significant, indicating it was appropriate to reject the null hypothesis, $F(2,20) = 12.46$, $p < 0.001$. This finding demonstrated that when the mediator (youth explicit attitudes) and independent

variable (the PNR) were both included in the regression model, they were significantly related to youth behavioral attitudes. Approximately 55.5% of the variance in youth behavioral attitudes is accounted for by youth explicit attitudes and the PNR, when combined (Adjusted R^2 = 51.0%). This is a large effect size according to Cohen (1992). Step four of mediation testing is establishing whether the mediator variable completely mediates the relationship between the independent and outcome variable, or if the mediation is only partial. The semi-partial correlations demonstrate that approximately 36.72% of the variance in behavioral attitudes was statistically explained by youth explicit attitudes, $r(22) = -0.606$, $p = 0.001$, whereas the semi-partial correlation for the PNR was no longer significant $r(22) = 0.115$, $p = 0.451$. This finding shows that youth explicit attitudes fully mediated the relationship between the PNR and youth behavioral attitudes. The PNR is associated with youth behavioral attitudes through the mediating role of youth explicit attitudes.

Hypothesis 5: Youth explicit, implicit, and behavioral attitudes will significantly positively correlate with one another.

This hypothesis was assessed using a series of three correlation analyses between each combination of the youth attitude measures (explicit, implicit, and behavioral attitudes).

First, the assumptions of Pearson's product-moment correlation were assessed. The analyses met the research design assumptions, in that each correlation involved pairs of continuous variables. Visual inspection of three scatterplots suggested there was a linear relationship between (1) implicit and behavioral attitudes, (2) explicit and behavioral attitudes, and (3) explicit and implicit attitudes. There did not appear to be outliers from the

pattern of the rest of the data. The remaining analyses pertain to testing for bivariate normality. Youth explicit attitudes were not normally distributed as assessed by Shapiro-Wilk's test (p = .028), however behavioral and implicit attitudes were normally distributed (p > .05). Although Shapiro-Wilk's test suggested a deviation from normality for youth explicit attitudes, this variable was not skewed or kurtosed (skewness = 0.14, standard error = 0.48; kurtosis = -1.13, standard error = 0.93). Behavioral attitudes (skewness = -0.01; standard error = 0.48; kurtosis = -0.001, standard error = 0.93) and implicit attitudes (skewness = -0.30; standard error = 0.48; kurtosis = -0.52, standard error = 0.93) were not skewed or kurtosed either. Finally, explicit, implicit, and behavioral attitudes appeared normally distributed as assessed by visual inspection of Normal Q-Q Plots. In sum, it appeared that the distributions of behavioral and implicit attitudes were approximately normal, whereas explicit attitudes had some deviation from a normal distribution. However, because the explicit attitude distribution was non-kurtosed and non-skewed as well as lacking outliers, the Pearson's correlations for all three pairs of youth attitude variables were conducted. Bootstrapped confidence intervals were computed in order to corroborate the results of the Pearson's correlation analyses.

A series of three two-tailed Pearson's correlations were conducted. The first analysis failed to detect a significant correlation between youth explicit and implicit attitudes, $r(23)$ = 0.22, p = 0.30. Bootstrapping with 1,000 samples revealed a 95% confidence interval (Lower = -0.158; Upper = 0.595) that corroborated the non-significant results of the correlation between explicit and implicit attitudes. Youth explicit and implicit attitudes did not correlate with one another. There was a significant large negative correlation between explicit and behavioral attitudes, $r(23)$ = -0.73, p < 0.001. The correlation was negative

because lower scores on the MHS refer to more positive explicit attitudes, whereas higher scores on the LGBT-AID refer to more positive behavioral attitudes. These results were further supported by 1,000 samples bootstrapped 95% confidence intervals (Lower = -0.899; Upper = -0.440). Youth who reported more positive explicit attitudes tended to report more positive behavioral attitudes. Explicit attitudes statistically explained approximately 54.16% of the variability in behavioral attitudes, a large effect size. Finally, the negative correlation between behavioral and implicit attitudes approached, but did not reach statistical significance, $r(23) = -0.40$, $p = .058$. Although the result of this analysis was not significant, the effect size was medium, with behavioral attitudes explaining approximately 16.0% of the variability in youth implicit attitudes. Furthermore, the 1,000 samples bootstrapped 95% confidence intervals (Lower = -0.617; Upper = -0.158) suggested that the correlation between behavioral and implicit attitudes is significant, which contrasts with the asymptotic normal distribution theory *p*-value result. The combined medium effect size and bootstrapping results suggest that youth who reported more positive behavioral attitudes demonstrated more positive implicit attitudes toward LGB people.

The hypothesized significant correlation between explicit and behavioral attitudes was supported. The hypothesized correlation between behavioral and implicit attitudes was supported by the effect size and bootstrapping results, but not by the asymptotic normal distribution theory *p*-value result. The hypothesized correlation between explicit and implicit attitudes was not supported by the current analyses.

Hypothesis 6: Mothers' explicit attitudes will significantly correlate with their degree of interpersonal contact with LGB people and sexual orientation messages.

Two Pearson's correlations assessed whether the following pairs of parent variables

correlated with one another: (1) explicit attitudes and interpersonal contact and (2) explicit attitudes and the PNR.

The first correlation assessed whether parent attitudes and interpersonal contact with LGB people correlated with one another. Prior to conducting the analysis, the assumptions of Pearson's correlation were assessed. The analysis met the research design assumptions by using pairs of continuous variables. Visual inspection of the bivariate scatterplot revealed a significant outlier in the LGB contacts distribution. This data point (100 LGB contacts) was more than three standard deviations above the mean. The participant noted on her questionnaire that this number was an estimate and that she was unsure of its accuracy. This outlying data point was transformed by replacing it with the next highest outlier, with a value of 30 LGB contacts. The transformed parent LGB contacts variable and parent explicit attitudes were assessed for bivariate normality. Parent explicit attitudes were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$), were not skewed (skewness = 0.314; standard error = 0.491), and were not kurtosed (kurtosis = -1.320; standard error = 0.953). Visual inspection of the explicit attitudes normal Q-Q plots confirmed a normal distribution. In contrast, parent LGB contacts were not normally distributed, as assessed by Shapiro-Wilk's test ($p < .001$). Parent LGB contacts were positively skewed (skewness = 2.193; standard error = 0.491) and positively kurtosed (kurtosis = 4.658; standard error = 0.953). Visual inspection of parent LGB contacts normal Q-Q plots confirmed the positively skewed distribution. Because the LGB contacts variable was positively skewed and therefore did not fully meet the assumptions of Pearson's correlation, bootstrapped confidence intervals were computed to corroborate the results.

The results of the two-tailed Pearson's correlation showed no significant correlation

between parent explicit attitudes and parent LGB contacts, $r(22) = -0.17$, $p = 0.45$. Bootstrapping with 1,000 samples revealed a 95% confidence interval (Lower = -0.497; Upper = 0.209) that corroborated the non-significant results of the correlation.

The second portion of this hypothesis assessed whether parents' explicit attitudes correlated with their sexual orientation messages. The assumptions of Pearson's correlation were assessed. The analysis met the research design assumptions. Visual inspection of a bivariate scatterplot showed a linear relationship between explicit attitudes and the PNR; outlying data points were not detected. Parent explicit attitudes were normally distributed in this bivariate relationship, assessed by Shapiro Wilk's test ($p > .05$). Parent explicit attitudes were not skewed (skewness = 0.350; standard error = 0.481) or kurtosed (kurtosis = -1.290; standard error = 0.935). Shapiro Wilk's test ($p = 0.01$) was significant for the PNR, however the variable did not appear skewed (skewness = -0.779; standard error = 0.481) or kurtosed (kurtosis = -1.018; standard error = 0.935). Visual inspection of the normal Q-Q plots for both variables suggested a relatively normal distribution. Because there were possible violations of Pearson's correlation, bootstrapped confidence intervals were computed to corroborate the results.

A two-tailed Pearson's correlation was conducted. The results showed a significant large negative correlation between parent explicit attitudes and the PNR, $r(23) = -0.659$, $p = 0.001$. Parent explicit attitudes explained approximately 43.42% of the variability in the PNR. Bootstrapping with 1,000 samples revealed a 95% confidence interval (Lower = -0.871; Upper = -0.407) that corroborated these significant results. Parents who reported more positive explicit attitudes provided a larger portion of positive messages during the prompted conversations.

This hypothesis was partially supported. Parent explicit attitudes significantly correlated with the PNR, with a large effect size. In contrast, parent explicit attitudes did not correlate with their degree of interpersonal contact with LGB people.

C. Exploratory Analyses

Following the main hypotheses tested above, additional exploratory analyses were conducted. Alpha levels were not adjusted for these analyses due to their exploratory nature.

Exploratory Analysis 1: Does youth interpersonal contact with LGB people strengthen regression models described in hypothesis 1 (youth explicit attitudes regressed on parent messages), hypothesis 3 (youth implicit attitudes regressed on parent messages), and hypothesis 4a (youth behavioral attitudes regressed on parent messages)?

The first exploratory analysis sought to understand the additive impact of youth interpersonal contact with LGB people in the regression models described above, in which youth attitudes are regressed on parent messages. Exploratory data analyses regarding the relationship between youth LGB contacts and youth attitudes were conducted first. As shown in Table 5 there was a medium positive correlation that neared significance between youth LGB contacts and youth behavioral attitudes, $r(23) = 0.391$, $p = 0.065$. The correlation between LGB contacts and (1) explicit attitudes, $r(23) = -0.181$, $p = 0.409$ and (2) implicit attitudes, $r(23) = 0.065$, $p = 0.767$ were smaller and did not approach significance. These preliminary analyses led to one exploratory multiple regression analysis which examined the combined explanatory value of LGB contacts and the PNR regressed on youth behavioral attitudes.

Assumptions of multiple regression were assessed first. The first two assumptions were met by using a continuous dependent variable (youth behavioral attitudes) and two continuous independent variables (youth LGB contacts and the PNR). There was independence of residuals, demonstrated by a Durbin-Watson statistic of 2.287. There appeared to be both approximate homoscedasticity and a linear relationship between the dependent variable (youth behavioral attitudes) and the combined predictor variables, evidenced by visual inspection of a scatterplot of the studentized residuals against the unstandardized predicted values. Visual inspection of scatterplots illustrating the relationship between each predictor variable and the dependent variable demonstrated linear relationships. There was no evidence of multicollinearity, demonstrated by a tolerance level of 0.991. There were no outlying standardized residuals greater than three standard deviations, nor were there problematic leverage points or influential points. Visual inspection of a histogram and normal P-P plot suggested the residuals were approximately normally distributed.

A multiple regression assessed the overall relationship between both the PNR and youth LGB contacts with youth behavioral attitudes. The multiple regression model showed a statistically significant relationship between the combined independent variables and youth behavioral attitudes, $F(2, 20) = 27.555$, $p = 0.009$. The model explained 37.6% of the variance in youth behavioral attitudes (Adjusted $R^2 = 31.3\%$), a large effect size according to Cohen (1992). Each independent variable was individually statistically significantly associated with youth behavioral attitudes ($p_{\text{contacts}} = 0.024$; $p_{\text{PNR}} = 0.015$), with the PNR having a slightly larger standardized beta coefficient ($B = 0.475$) than youth LGB contacts ($B = 0.435$). This exploratory analysis showed that combining youth LGB contacts to the

existing regression model of youth behavioral attitudes regressed on the PNR yielded a model with greater explanatory value than the original model tested in hypotheses 4a. A larger proportion of variance in youth behavioral attitudes is explained by both independent variables together (contacts and PNR) than the original independent variable (PNR) alone.

Exploratory Analysis 2: Are proportions of positive and negative messages associated with youth attitudes, when accounting for the presence of neutral messages?

The main analyses assessing the impact of parent messages on youth attitudes examined positive and negative messages as a ratio to one another, which excluded neutral messages. Given that neutral messages were computed as a separate variable, these exploratory analyses assessed whether positive and negative message proportions each contributed to youth attitudes when accounting for the proportion of sexual orientation messages that were neutral. Proportions of positive and negative messages were computed by dividing each mother's total frequency of (a) positive messages and (b) negative messages by the total number of sexual orientation messages that they provided, including neutral messages.

A total of four exploratory linear regression analyses were conducted to assess whether (1) positive message proportion is associated with [a] youth explicit attitudes and [b] youth behavioral attitudes and (2) negative message proportion is associated with [a] youth explicit attitudes and [b] youth behavioral attitudes. Due to multicollinearity it was not possible to conduct two multiple regressions. Youth implicit attitudes were not explored as an outcome variable because they did not correlate with positive or negative message proportions (see Table 5).

In the first linear regression, positive message proportion served as the independent variable, with youth explicit attitudes (MHS scores) as the outcome variable. Prior to running the analysis, the assumptions of linear regression were assessed. There appeared to be a linear relationship between positive message proportion and youth explicit attitudes, evidenced by a bivariate scatterplot. The scatterplot did not reveal outlying data points and there were not standardized residuals beyond three standard deviations. There was independence of residuals, evidenced by a Durbin-Watson statistic of 1.816. Visual inspection of a scatterplot of standardized residuals and standardized predicted values demonstrated homoscedasticity. Residuals appeared approximately normally distributed, demonstrated through visual inspection of a regression standardized residual histogram and a normal probability plot of standardized residuals. The results of the linear regression showed that positive message proportion was statistically significantly associated with youth explicit attitudes, $F(1, 21) = 8.456$, $p = 0.008$, accounting for 28.7% of the variance in youth explicit attitudes (Adjusted $R^2 = 25.3\%$), a large size effect according to Cohen (1992). A greater proportion of positive messages was related to more positive youth explicit attitudes.

In the second linear regression, positive message proportion served as the independent variable with youth behavioral attitudes as the outcome variable. First, the assumptions of linear regression were assessed. It appeared there was a linear relationship between positive message proportion and youth behavioral attitudes, evidenced by inspection of a scatterplot of the two variables. The scatterplot did not reveal any outlying data points and there were not outlying standardized residuals beyond three standard deviations. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.218. Visual inspection of a scatterplot of standardized residuals and standardized

predicted values demonstrated homoscedasticity. Residuals appeared approximately normally distributed, demonstrated through visual inspection of a regression standardized residual histogram and a normal probability plot of regression standardized residuals. The results of the linear regression showed that proportion of positive messages did not reach significance in its relationship with youth behavioral attitudes, $F(1, 21) = 2.659$, $p = 0.118$. However, positive message proportion statistically accounted for 11.2% of the variance in youth behavioral attitudes with adjusted $R^2 = 7.0\%$, a small to medium size effect according to Cohen (1992). Although the results did not meet significance levels, the small to medium effect size combined with low power suggests that a greater proportion of positive messages may be associated with more positive youth behavioral attitudes.

The third linear regression assessed whether negative message proportion was significantly associated with youth explicit attitudes. Assumptions were tested prior to completing the main analysis. There appeared to be a linear relationship between negative message proportion and youth explicit attitudes, shown by inspection of a scatterplot of the two variables. The scatterplot did not reveal outlying data points and there were not outlying standardized residuals beyond three standard deviations. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.816. Visual inspection of a scatterplot of standardized residuals and standardized predicted values demonstrated approximate homoscedasticity, with a slight decreasing funnel that did not appear to be a major violation of this assumption. Residuals appeared to be approximately normally distributed, demonstrated through visual inspection of a standardized residual histogram and a normal probability plot of standardized residuals. The results of the linear regression showed that proportion of negative messages was statistically significantly associated with

youth explicit attitudes, $F(1, 21) = 4.725$, $p = .041$, accounting for 18.4% of the variance in youth explicit attitudes with adjusted $R^2 = 14.5\%$, a medium effect size according to Cohen (1992). A greater proportion of negative messages was related to more negative youth explicit attitudes.

The fourth linear regression assessed whether negative message proportion was significantly associated with youth behavioral attitudes. Assumptions were tested prior to completing the main analysis. It appeared there was a linear relationship between negative message proportion and youth behavioral attitudes, evidenced by inspection of a scatterplot of the two variables. The scatterplot did not reveal outlying data points and there were not outlying standardized residuals beyond three standard deviations. There was independence of residuals, as assessed by a Durbin-Watson statistic of 2.244. Visual inspection of a scatterplot of standardized residuals and standardized predicted values demonstrated that there was approximate homoscedasticity, with a slight deviation that did not appear to be a major violation of homoscedasticity. Residuals appeared to be approximately normally distributed, demonstrated through visual inspection of a regression standardized residual histogram and a normal probability plot of regression standardized residuals. The results of the linear regression showed that negative message proportion was statistically significantly associated with youth behavioral attitudes, $F(1, 21) = 4.667$, $p = 0.042$, accounting for 18.2% of the variance in youth behavioral attitudes with adjusted $R^2 = 14.3\%$, a medium effect according to Cohen (1992). A larger negative message proportion was related to more negative youth behavioral attitudes.

Overall, the results of these exploratory analyses show that positive and negative message proportions were significantly associated with youth explicit attitudes, when

accounting for the presence of neutral message proportions. In addition, negative message proportion was significantly associated with youth behavioral attitudes, with positive message proportion showing a non-significant but small to medium effect size in its association with youth behavioral attitudes.

Exploratory Analysis 3: How do mothers talk about their children's future relationships or partners?

The majority of mothers talked about the child's future relationship as being with someone of a different gender (n = 16, 69.6%). Some of the mothers used only gender-neutral terms to talk about their child's future relationship (n = 5, 21.7%). Mothers rarely stated to their child that the child might be in a relationship with someone of any gender in the future (n = 2, 8.7%).

Exploratory Analysis 4: To what degree do parents and youth agree regarding content of past discussions about sexuality?

A series of seven chi-square tests of association were conducted to determine whether parents and youth differ in the topics they independently report having discussed with one another in the past. Results of these analyses revealed no difference in youth and parent reporting of past discussions about dating, sexual orientation, relationships, marriage, starting a family, or contraceptives in the past. However, a chi-square test of association did show a statistically significant association between status as parent or child and reporting past discussions of sexually transmitted infections, $\chi^2(1) = 6.135$, $p = .013$. Frequencies and percentages of disagreement were also computed and revealed moderate to high levels of disagreement regarding whether or not specific topics had been discussed by the parent-child dyad in the past. Rates of disagreement ranged from most to least in the following

order: marriage (*n* = 11, 47.8%), contraceptives (*n* = 10, 43.5%), sexual orientation (*n* = 7, 30.4%), starting a family (*n* = 7, 30.4%), sexually transmitted infections (*n* = 6, 26.1%), dating (*n* = 6, 26.1%), and relationships (*n* = 4, 17.4%). In summary, parent-child dyads disagreed in their reporting of past conversations at rates of 17.4% to as high as 47.8%. With the low statistical power of these analyses combined with relatively high levels of disagreement for some topics, it appears that parents and youth are at times inconsistent in their reporting of past conversations related to sexuality.

V: Discussion

A. Discussion of Main Findings

1. Parent messages predict youth attitudes

The present study is the first to demonstrate empirically that observed parent messages about sexual orientation are associated with youth explicit and behavioral attitudes about LGB people. Parents' verbalized attitudes, beliefs, and opinions are related to youths' attitudes and behaviors toward LGB people. Furthermore, parent messages about sexual orientation statistically explain a medium to large amount of the variance in youth explicit and behavioral attitudes. The results of this study present observational data illustrating the relationship between parent and child attitudes and behaviors toward LGB people, which expands past self-report research (e.g. Poteat et al., 2012). This is an important contribution to the psychology literature, in that research on parent-child sexual communication often omits sexual orientation and is typically based on self-report from children's or parents' perspectives (Savin-Williams & Dubé, 1998). As demonstrated in this study, parent and child self-report of past conversations often differ depending on whether the child or parent is the reporter. Furthermore, this finding has implications for training. If children's explicit and behavioral attitudes reflect their parents' messages about LGB people, this provides a rationale for assisting parents in gaining LGB-affirming communication skills, regardless of their children's sexual orientation identities. Providing such support for all parents may aid the development of positive attitudes and ally development among heterosexual youth, thereby contributing to a more positive social climate for LGB and questioning youth.

As hypothesized, parent messages statistically explained more of the variance in youth explicit attitudes than behavioral attitudes. Youth may be more likely to reflect their

parents' explicit opinions when they state their own explicit opinions about LGB people than to reflect their parents' explicit opinions in their self-reported behaviors toward LGB people. Future research might assess parent behavioral attitudes in order to better understand how parents' attitudes and behaviors relate to their children's attitudes and behaviors. It is possible that youths' behavioral attitudes reflect their parents' modeling of behaviors toward LGB people, rather than reflecting their parents' opinions about LGB people. Another possibility is that variables beyond parent messages, such as peers' attitudes and behaviors, school climate, and messages from other authority figures, influence youths' decisions to engage in LGB-affirming behaviors, as compared to holding LGB-affirming opinions. Relatedly, the current study illustrated that youth explicit attitudes mediates the relationship between parent messages and youth behavioral attitudes. Developing positive explicit attitudes could create the possibility that youth will take their positive attitudes one step further and engage in LGB-affirming ally behaviors. However, youth may require additional support and/or opportunities, such as viewing a parent, authority figure, or respected peer modeling LGB-affirming behaviors, in order to put their positive explicit attitudes into action.

Although the hypothesized moderating role of parent implicit attitudes on the relationship between parent messages and youth explicit attitudes was not significant, trends consistent with the anticipated moderation effect were observed (see Figure 1). With greater statistical power this moderation analysis may have yielded significant results, particularly in light of the small to medium observed effect size. Because of the small sample size parent implicit attitudes was transformed into a binary variable to increase statistical power. With a larger sample, parent implicit attitudes could be used as a continuous moderator,

which might clarify the potential moderating role of parent implicit attitudes. The hypothesized moderating role of parent explicit attitudes was developed based on past research showing that implicit attitudes about race are better predictors of people's subtle behaviors toward racial minorities than explicit attitudes (Fazio, Jackson, Dunton, & Williams, 1995; Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001). With this background in mind, it was expected that parents' implicit attitudes would influence their non-verbal messages during the prompted conversations. The observed trends in the data suggest a pattern such that parents' verbal messages had a different relationship with youth explicit attitudes, depending on whether the parents' implicit attitudes were positive or negative. Children whose parents provided more positive verbal messages and had positive implicit attitudes showed more positive explicit attitudes than children whose parents with the same ratio of positive messages but who held more negative implicit attitudes.

Following the main hypothesis testing, additional exploratory analyses were conducted to evaluate the role of interpersonal contact with LGB people on youth attitudes. Past research suggests that interpersonal contact with LGB people is associated with more positive explicit (Basow & Johnson, 2000; Bowen & Bourgeois, 2001; Hinrichs & Rosenberg, 2002; Liang & Alimo, 2005; Lemm, 2006) and implicit attitudes (Lemm, 2006). In contrast to past research, Table 5 shows that youths' degree of interpersonal contact with LGB people did not correlate with youths' explicit or implicit attitudes. This may be due to this study's method of assessing interpersonal contact. Lemm's (2006) research showed that participants who had at least one close relationship with a gay man demonstrated significantly less implicit homonegativity than those who reported no close relationships

with gay men. The current study did not assess degree of closeness with LGB people; instead, participants reported "the number of gay/lesbian/bisexual friends, relatives or acquaintances you have," which may yield conceptually distinct information than assessing close relationships with LGB people. Furthermore, all of the youth participants reported at least one LGB contact, which might suggest that either this was a sample of participants with a relatively high number of LGB contacts or that the item was developed with insufficient consideration for degree of closeness, making the item a less useful assessment of LGB contact. Future research would benefit from including this item in conjunction with further assessment of relationship closeness in order to better understand the relationship between interpersonal contact and attitudes toward LGB people.

In contrast, there was a significant correlation between interpersonal contact and youth behavioral attitudes toward LGB people. A multiple regression analysis showed that combining youth interpersonal contact and parent sexual orientation messages statistically explained more of the variance in youth behavioral attitudes than parent messages alone. This study's assessment of LGB contact may be a better predictor of youth behavioral attitudes than explicit or implicit attitudes because reporting positive behavioral attitudes involves *doing things* that require engagement with LGB people. It is unlikely that someone could report positive behavioral attitudes without having a larger number of LGB contacts, whereas it is possible that someone could have positive explicit or implicit attitudes without directly interacting with LGB people. Another possibility is that without interpersonal contact with LGB people to combat stereotypes, a child may be more likely to rely on their parents' negative messages about LGB people in making decisions about how to behave toward LGB people.

Although this study demonstrated that parent messages were associated with youth explicit and behavioral attitudes, the expected relationship between parent messages and youth implicit attitudes was not found. This is not surprising in light of the finding discussed below; youth implicit attitudes did not correlate with explicit attitudes, the youth attitude variable with which parent messages were most associated. This supports the notion that explicit and implicit attitudes are distinct attitudinal constructs and provides a rationale for measuring both types of attitudes. Interestingly, parents' implicit attitudes also did not correlate with youths' implicit attitudes. This is in contrast to past research showing that mothers' implicit attitudes about race significantly predict their preschool children's implicit attitudes about race (Castelli, Zogmaister, & Tomelleri, 2009). Combined, these findings suggest that youth implicit attitudes may be more complex than their explicit attitudes. As children get older, their implicit attitudes may begin to differentiate further from their parents based on a plethora of influences. Further research is needed to better understand predictors of youth implicit attitudes and ultimately, interventions that can promote more positive youth implicit attitudes. Although implicit attitudes are important to understand, it is also worth noting that past research has shown that conscious beliefs can reduce the impact of negative implicit attitudes on behaviors (Dasgupta & Rivera, 2006). Dasgupta and Rivera (2006) demonstrated that conscious egalitarian beliefs as well as behavioral awareness and control moderated the effect of automatic prejudice against LGB people on participants' behaviors toward LGB people. Thus, although the current study did not show a significant relationship between parent messages and implicit attitudes, it may be more important at present to focus on how parents' messages can promote positive explicit and behavioral attitudes in their children, which would theoretically reduce the impact of

children's negative implicit attitudes on the social environments of their children's LGB peers.

As stated above, neutral parent messages were not analyzed as a predictor of youth attitudes. One of the considerations leading to this decision were preliminary data analyses showing a non-significant relationship between neutral messages and youth attitudes. It is possible that there was not as clear of a relationship between neutral messages and youth attitudes because neutral messages might allow a child to maintain their already existing attitudes about LGB people and issues. At the same time, the direction of the non-significant correlations between neutral messages and youth explicit and behavioral attitudes is noteworthy. These non-significant correlations show a pattern in which higher proportions of neutral parent messages were associated with more negative explicit and behavioral attitudes. Additional research is warranted to explore the relationship between neutral parent messages and youth attitudes. Research regarding the role of gender in occupational development discussed the null academic environment, in which people of authority (e.g. professors) remain neutral by not actively supporting students of any gender (Betz, 1989). Because of pervading societal messages regarding women's occupational development, an environment that was technically "neutral" was passively discriminatory toward women (Betz, 1989). In the same way, parents' use of "neutral" messages may not have a neutral impact, in that these messages allow for societal heterosexism to be left unchallenged. This interpretation is supported by Shibley Hyde and Jaffee (2000), who argued that in the absence of parent-child sexual communication, societal anti-gay messages make same-sex sexuality invisible. In sum, neutral parent messages may have a neutral, or even positive, intent, while having a negative impact on youth attitudes.

2. Relationships among youth attitudes

Another contribution of the current study is the use of a three-part measure of sexual orientation attitudes (explicit, implicit, and behavioral), instead of relying only on self-reported explicit attitudes, which is often the target variable is sexual orientation attitude research (e.g. Pew, 2013; Stotzer, 2009; Herek, 2002; Herek & Capitanio, 1996). Using these three attitude measures together provides a context for better understanding the relationships among different types of youth attitudes, which theoretically correlate but are distinct concepts, as discussed above. Although past research has shown that implicit and explicit attitudes correlate (Jellison et al., 2004; McConnell & Leibold, 2001; Wittenbrink, Judd, & Park, 1997), the findings from the current study echo other research showing a lack of correspondence between explicit and implicit attitudes (Greenwald et al., 1998). As suggested by Jellison et al. (2004), implicit and explicit attitudes may be less likely to correlate as holding negative attitudes toward a specific social group becomes less acceptable on a societal level. As societal attitudes shift toward more positive views of LGB people, some individuals may show greater discrepancies between their explicit and implicit attitudes. Earlier research conducted in a time when sexual prejudice was viewed as more acceptable may have yielded different results, in which explicit and implicit attitudes were more highly correlated. It is also possible that implicit attitudes may be more complex or multiply determined (e.g. through factors such as peers, school, religion, and media), as compared to explicit attitudes, particularly as children age. Past research suggested that interpersonal contact with LGB people and having an internal motivation to be non-prejudiced predict implicit attitudes about sexual orientation (Lemm, 2006), which could be two such variables that are more influential on implicit attitudes. Additionally, research has

shown that people are not skilled in "faking good" or controlling their responses to the IAT (Kim, 2003). Thus, while self-reported opinions are relatively simple to control, they may not capture some of the complexity of one's associations with sexual minorities that the IAT captures. Further research is needed to understand what factors contribute to implicit attitudes in comparison to explicit attitudes about LGB people.

In contrast to explicit attitudes, youth behavioral attitudes approached a significant correlation with youth implicit attitudes, with a medium effect size. As discussed above, discrepancies between explicit and implicit attitudes may occur when (1) an individual uses introspection to report their explicit attitudes and is unaware of implicit associations they may have, (2) the individual is aware of implicit associations they may have but does not believe they are a true reflection of their beliefs, or (3) the individual is aware of their implicit associations but reports different explicit attitudes in order to adhere to social norms (Nosek et al., 2007). Behavioral attitude measures may require recalling specific behaviors, rather than a general belief or opinion, which might be more reflective of someone's implicit attitudes than self-reported explicit attitudes. This finding has implications for future research. Implicit attitudes are often not assessed in research because of the relative difficulty of administering implicit attitude measures. However, behavioral attitudes can be easily assessed with self-report measures. Although behavioral attitude measures rely on self-report, they correlate with implicit attitudes, whereas explicit attitudes did not correlate with implicit attitudes in the current study. Thus, incorporating measures of behavioral attitudes may be a simpler alternative to the challenge of assessing implicit attitudes in research.

3. Relationships among mothers' attitudes

This study showed that mothers' explicit attitudes significantly correlated with their messages about sexual orientation. Mothers who self-reported more positive explicit attitudes also verbalized a higher ratio of positive messages during the prompted conversations. This suggests that mothers in this study were consistent in the way they communicated their opinions about LGB people, both when privately completing their questionnaires and in communication with their children. It also shows that observing parents' verbal messages about LGB issues likely reflects parents' explicit attitudes. As shown in the correlation table (see Table 5), parent messages did not significantly correlate with parent implicit attitudes. Therefore, it is useful to note for future research and parent interventions that parents' verbal messages likely reflect their explicit attitudes, whereas other messages (e.g. non-verbal messages) might better reflect their implicit attitudes. A next step for the current program of research is to code parents' non-verbal messages in order to ascertain whether parents' non-verbal messages correlate with their implicit attitudes. At the same time, the current findings could imply that parent interventions should focus on changing parents' explicit attitudes rather than their implicit attitudes. There has recently been increased attention in the psychology literature on measuring implicit attitudes related to a range of social groups. However, in this particular context, it is possible that parent explicit attitudes and messages are more important than their implicit attitudes in influencing youths' opinions and behaviors toward LGB people. Parent interventions could focus on promoting positive messages and explicit attitudes among parents, even if they maintain some implicit discomfort with LGB issues, because these factors are most associated with their children's opinions and behaviors regarding LGB

people. Ultimately, changing parents' explicit attitudes and messages could be more important than changing their implicit attitudes in cultivating LGB-affirming social environments for LGB youth.

4. Observations of parent sexual orientation messages

This section discusses the positive, negative, and neutral messages that arose during the prompted conversations. Although the qualitative descriptors that specify the messages parents used to convey positive, neutral, heteronormative, and negative messages to their children were not the main unit of analysis for this study, they are worth commenting on briefly here.

Positive messages were the vast majority of messages observed in this study, with some positive message descriptors standing out as the most frequent among the positive messages. One of the most frequent messages that parents provided to their children about LGB people was encouraging children to be empathic or provide emotional support to LGB people as well as modeling this themselves. Parents also often talked to their children about inequalities LGB people face and encouraged their children to understand these inequalities and their impact on LGB people. Parents frequently emphasized judging people based on their attributes, achievements, and abilities, rather than determining someone's value solely based on their sexual orientation. This message often arose in the role model prompt, with parents stating that someone's role model status should not depend on their sexual orientation identity. Another message that occurred at a moderate frequency was expressing support for same sex relationships. This often came in the form of admiring same sex couples, highlighting same sex couples' love for one another, and discussing the importance of everyone having access to loving relationships. This message is consistent with research

showing that participants' perceptions of same sex couples' lovingness is linked to their belief that lesbian and gay people are deserving of social recognition and legal rights (Doan, Miller, & Loehr, 2015). With these findings in mind, parenting workshops would benefit from reinforcing parents' in their use of these commonly observed positive messages with their children in order to promote positive explicit and behavioral attitudes in their children.

Some positive messages occurred more rarely. For example, parents infrequently stated that they would support their own child identifying as LGB or exploring their sexual orientation identity. Parents may not have used this message because their child identified as heterosexual. However, people come out as LGB during a range of times in life, with 37% to 53% percent of LGB people first disclosing their sexual orientation identity at age 20 or older (Pew, 2013), which is at least two years older than all youth participants in the current study. There is also variation among sexual minority groups in terms of likelihood of coming out to parents; for example, people who identify as bisexual are less likely than gay men or lesbians to tell their parent(s) about their sexual orientation identity (Pew, 2013). Furthermore, there is a greater appreciation in the psychology literature for the concept of sexual fluidity, which refers to the reality that sexual orientation may change over time (Diamond, 2009). Thus, it is important, although potentially more challenging, to help parents affirm the possibility that their child could come out as LGB or question their sexual orientation identity later in life and to avoid assumptions that their children identify or will always identify as heterosexual.

Some positive messages were not necessarily accurate, but likely had a positive impact on children's attitudes. For example, a common refrain in mainstream LGB-affirming discourse is that LGB people are "born this way." Some parents referred to their

belief that LGB people do not choose to be LGB, but rather are born LGB. Research based on attribution theory has shown that believing sexual orientation is biologically determined predicts more positive behaviors toward LGB people, whereas believing sexual orientation is changeable predicts more negative behaviors toward LGB people (King, 2001; Horvath & Ryan, 2003; Jang & Lee, 2014). Recent research has challenged this, suggesting that biological narratives can bolster positive or negative attitudes about LGB people depending on how the information is interpreted (Boysen & Vogel, 2007). Although scholars have begun challenging the notion that LGB people must be "born" LGB in order to be affirmed (e.g. Khan, 2015), and beyond this, psychological research demonstrates the concept of sexual fluidity (Diamond, 2009), the "born this way" narrative continues to be used, often in an effort promote positive attitudes toward LGB people. This highlights a coding challenge; as a research team we had to decide whether to categorize messages based on societal consensus of what it means to be LGB-affirming or to use more nuanced, scientific, or feminist understandings of what it means to be LGB-affirming. For the purpose of the current study, we elected to categorize messages based on societal consensus. This resulted in the positive category of parent messages reflecting a range of positive messages, from accepting to affirming messages. Future research will need to be conducted in order to differentiate between these two thresholds of positive messages in order to understand their unique relationships with youth attitudes and behaviors.

Although heteronormative and negative messages occurred much less frequently than positive messages, they did emerge. This was an interesting finding in itself because the study took place in a region of the United States where attitudes about sexual minorities are generally more positive than other U.S. states (Human Rights Campaign, 2015) and prior

to conducting the research it was a concern that participants with a range of sexual orientation attitudes might not be recruited in such a progressive area. Although research has shown that attitudes about sexual orientation vary by geographic region (Casazza, Ludwig, & Cohn, 2015), this study demonstrated that it is possible to conduct sexual orientation attitude research even in relatively progressive regions of the United States and also that parenting interventions are relevant is such areas.

The most common heteronormative message that parents provided was statements that assumed their child would be uncomfortable in the presence of an LGB person (e.g. a friend coming out to them). This assumption of discomfort could convey to the child that they "should" be uncomfortable or that this is the likely response to someone being LGB. Among the negative messages, a relatively frequent message was emphasizing negative aspects of identifying as LGB. This often took the form of cautioning the child about the numerous challenges that someone will face if they were to come out as LGB. Although conceptually similar to highlighting equality, which was a descriptor of a positive message, emphasizing negative aspects of being LGB referred to the cautioning or warning against being LGB. This illustrates another coding challenge. Messages that are similar in some ways (e.g. "LGB people face many challenges in society…"), can be paired with implications that made these messages positive (e.g. "…and I really wish that wasn't the case.") or negative (e.g. "…so people really need to think about if it's worth it to be gay.").

Another complex negative message that occurred relatively frequently was suggesting that God or the family's religion would not approve of LGB people or that their religion would create conflict with LGB people. The challenge of coding these messages is highlighted by one example, in which the parent encouraged the child to love and appreciate

all people (including LGB people), but not to condone being LGB. Although this could be interpreted positively, in that the parent is encouraging kindness toward LGB people, the message is still clear that being LGB is unacceptable. Table 5 shows that higher religiosity in youth was associated with more negative explicit attitudes. Furthermore, a follow up analysis of the relationship between parent messages and youth explicit attitudes, controlling for youth religiosity, showed that youth religiosity had a significant association with youth explicit attitudes. Thus, parent messages about religion and youth religious beliefs are important variables to further explore in understanding the development of youth attitudes and creating parent training interventions. Although in the current study youth religiosity was associated with more negative youth explicit attitudes, Borgman (2009) identified that some adults report being able to integrate their identities as Christian and LGB allies. Research has also shown that religions that teach tolerance were associated with increased positive attitudes toward an out-group (e.g. LGBT people), whereas religions that teach non-tolerance or rejection of an out-group would have the opposite effect (Herek, 1987). Cragun and Sumerau (2015) found that attitudes toward LGBT people varied across religion and that biblical literalism was associated with more negative attitudes toward LGBT people. It is suggested that the teachings and interpretations of religions, rather than being religious, predict attitudes and behaviors (Herek, 1987). Although religious beliefs may at times be at odds with maintaining positive attitudes toward LGB people, the present results combined with a review of past research suggest the importance of assisting religious parents and youth integrate religious views and affirmation of LGB people.

There was a range in the degree of positivity and negativity in parent messages, which was not captured by the current study's coding scheme. For example, highlighting

that LGB people have strengths or encouraging the child to advocate for LGB people are likely more positive messages than telling a child not to have negative judgments about LGB people or encouraging tolerance for LGB people. However, both were coded as positive messages. This distinction might be framed as "affirming" versus "accepting" messages about sexual orientation. It will be useful to disentangle different levels of positivity within the positive messages for future analyses. Specifically, it would be informative to explore whether affirming versus accepting messages have unique relationships with youth attitudes. This could be a particularly enlightening to explore for understanding youth implicit attitudes, which is the youth attitude least explained in the current analyses. Similar to the range in positive attitudes, negative attitudes also varied in degree of negativity. For example, associating pathology or deviance with LGB people is a more negative message than focusing on sexuality or safer sex for LGB people. A larger sample, or a sample from a population with greater frequency of negative messages, would be needed in order to obtain sufficient sample size to test the different relationships between levels of negative messages and youth attitudes. Beyond this, it appears that parent messages exist on more of a continuum than as discrete categories. Another opportunity for additional analyses would be to construct a survey that gathered information about the degree to which LGB youth perceived different messages to be on the positivity-negativity continuum. This would provide another means to reanalyze the current data and potentially better understand the relationships between youth attitudes and parent messages.

Neutral messages were challenging to code in light of the previously discussed issue, that neutral intentions might not be equivalent to neutral impact. Although neutral messages often appeared to have a neutral or even positive intent, they may have had a negative

impact in some cases. For example, parents sometimes maintained a neutral stance and failed to challenge someone's negative stereotypes, viewpoints, or incorrect information about LGB people. Regardless of the parents' intent, the impact is likely negative since the false and potentially harmful information went unchallenged. In contrast, some neutral messages may have a neutral or even normalizing impact. For example, parents often talked about LGB people they knew or acknowledged that someone might be LGB without sharing any positive or negative opinions. Parent training would benefit from a more informed understanding of the relationship between neutral parent messages and youth attitudes.

5. Validity of observational method

Findings from the current study echo past research suggesting that parents and adolescents often disagree about what was discussed during past conversations about sexualities (Shtarkshall et al., 2007). Although with the small sample, significant differences in terms of parent and child were not often detected, the percentage of disagreement between parents and children about past topics discussed was high. Almost half of the sample disagreed about whether some of the topics were discussed in the past. Furthermore, even in cases when parents and children did agree about whether a topic was discussed in the past, more detailed questioning might shed light on understanding whether parents and youth agree on the types of *messages* that were communicated during past discussions. These findings suggest that using observational methods to capture parent-child communication about sexuality-related topics, rather than relying on self-report from parents or youth, may yield more valid results.

B. Limitations

Although this study revealed a number of important findings, there were also some challenges and limitations in the study. Recruitment was difficult and yielded a smaller sample size and less statistical power than expected. The research team used a wide range of recruitment methods, however parents and children often were initially hesitant to attend a one-hour research session to talk together about "dating, relationships, sexuality, sexual orientation, marriage, and families." Those who did participate may have had particularly positive attitudes regarding sexuality in general, therefore biasing the participant sample. At the same time, participants often expressed surprise that the study was focused on sexual orientation, suggesting participants did not self-select based on their sexual orientation attitudes. The region of the country where data was collected likely restricted the range of attitudes and messages among the parent-child dyads. It is likely that in a different region positive messages would not have predominated, which is supported by past research showing variation in sexual orientation attitudes based on geographic area (Casazza et al., 2015). Additional research on parent-child communication and attitudes about sexual orientation is warranted in more conservative regions of the country, as well as urban and rural areas. Due to limitations in resources and a lack of bilingual researchers, we were only able to include participants when both mother and child were English-speaking. This limited our sample; several prospective participants expressed an interest in the study but were unable to participate due to one member of the dyad being monolingual Spanish-speaking. We recommend increasing the capacity of the research team such that Spanish-speaking families may also participate and add to the knowledge basis around this topic.

The order in which the topics were presented was another limitation of the study. Because the primary independent variable was parent sexual orientation messages, prompted conversations were completed prior to attitude measures and demographic questionnaires. Although completing the prompted conversations first allowed participants to discuss sexual orientation without priming, this meant that participants responded to the attitude measures after discussing sexual orientation with one another. This may have impacted participants' responses to the attitude measures.

The scope of the current study was limited to parents' verbal messages about sexual orientation as the main independent variable. Although the results of the study suggest the importance of parent verbal messages, the above literature review addresses other potentially influential factors that are worthy of exploring in future research. Parents' silence or non-discussion about LGB issues, as well as their non-verbal messages and tone when discussing LGB issues can also impact youth. During the coding process, we observed that parent messages could be interpreted differently when accounting for tone. We strived to account for this by considering the tone of the message when interpreting it, with the stipulation that all coders agreed the tone impacted the meaning of the message. Because the goal of this study was to identify the relationship between parents' verbal messages and youth attitudes, we did not have a systematic method to account for tone and non-verbal messages (e.g. eye contact, fidgeting, stumbling on one's words). It was beyond the scope of the current study to also code for non-verbal messages. A next step is to code non-verbal messages that parents in this study used in order to compare parents' verbal and non-verbal messages and their potentially differential or additive association with youth attitudes.

Children's contributions to the conversations were another variable not accounted for in the current study. Although we did identify occurrences of youth sexual orientation messages, coding children's verbal messages was beyond the aims of this study. Additional research is recommended to explore the impact that youths' messages have on parents. For example, in one parent-child dyad, there was an instance in which the child provided education to the mother about LGB issues. This study presumed that the direction of association is parent to child, however it is likely that youth also impact their parents, and this line of reasoning is worth further investigating.

A number of challenges emerged during the coding process. Although developing definitions for positive, neutral, heteronormative, and negative messages was relatively simple, systematically categorizing observed parent messages into these categories was difficult. This is reflected by a lower than expected kappa statistic (0.61), although still in the "substantial agreement" range. Parent messages occurred on a continuum from positive to negative as opposed to the anticipated categorical style of messages, contributing to this coding difficulty. Related to this, although we chose to combine heteronormative and negative messages into one variable based on the theoretical rationale that both types of messages have a negative valence and the observation that it was difficult to distinguish in the coding process whether messages were negative or heteronormative, these two message types were not significantly correlated with one another, $r(23) = 0.15$, $p = 0.493$. However, the direction of the observed non-significant was in the expected direction. Combined, these limitations suggest the utility of examining parent messages on a continuum instead of discrete categories.

Distinguishing between the intent and impact of parent messages was another challenge. There were instances in which the intent and impact of a parent message may have been different. Additionally, although the conversation prompts specifically focused on sexual orientation, parents often discussed transgender people as being part of this umbrella, particularly during the role model prompt. This shows that some parents did not distinguish between sexual orientation and gender identity. Parent messages about transgender people were coded using the existing coding scheme because if we did not code these messages this would omit important and relevant messages the parents provided. Therefore, it should be noted that some (albeit a minority) parent messages pertained transgender issues.

A final coding challenge was that the undergraduate coders did not have any pre-existing specialization in LGB issues, which may have affected the consistency of their coding. It would be useful to provide non-specialized coders with more intensive training or to recruit coders with more specialized knowledge of LGB issues in future qualitative content analysis research. On the other hand, employing coders without specialized knowledge required the codes to be refined in greater detail in order to be applied correctly; therefore this may have also served as a strength of the study.

C. Implications and Future Directions

1. Research

Future research on parent-child communication about sexual orientation would benefit from continued use of observational methods. Although recruitment was challenging, parents and children who participated did not express concerns about the length of time involved in participating. In fact, several participants (both parents and youth) noted

they enjoyed the experience and rarely have time to "sit down and talk one on one about this kind of thing." This suggests that this approach, although time consuming, is feasible from a participant perspective.

Furthermore, it is recommended that future researchers continue to use recent explicit attitude measures, such as the Modern Homonegativity Scale, which yielded a relatively normal distribution of scores. This measure was effective in capturing a range of explicit attitudes among youth and parents. Although it is not possible to compare these results to how participants would have responded to a measure of "old fashioned homonegativity," participants reported a range of scores on the MHS, whereas it is possible they would have responded within a more restricted range with an older measure, suggesting the utility of modern homonegativity measures in this type of research and in geographic regions where positive attitudes about LGB issues are more prominent.

Implicit attitude measures are also recommended for use in future research, as implicit sexual orientation attitudes remain lesser understood than other types of attitudes. However, implicit attitudes are logistically more challenging to assess than self-reported explicit or behavioral attitudes. In this study, explicit and implicit attitudes did not significantly correlate with one another, suggesting that only assessing explicit attitudes does not account for another aspect of attitudes toward LGB people. Thus, it is recommended that in cases when implicit attitude measures are not feasible, self-report behavioral attitude measures, such as the LGBT-AID, be used because this neared a significant correlation, with a medium effect size, with implicit attitudes. Additional behavioral attitude measures, such as the LGBT Ally Identity Measure (Jones et al., 2014) might be explored as alternatives to the LGBT-AID, depending on the needs and aims of the

research. Assessing behavioral attitudes may reflect individuals' implicit attitudes to a greater degree than assessing only explicit attitudes. Another possibility is incorporating measures of parents' behavioral attitudes as an indicator of role modeling behaviors; parent role modeling is a distinct variable from parent opinions about LGB people and it warrants further investigation as a potential contributor to youth attitudes.

Additional future directions for research include examining parent-child communication and attitudes about specific social identities. For example, some participants discussed a person coming out as transgender and whether transgender people could be role models for teenagers during the conversation prompts. Although heterosexual-identified adults' attitudes toward transgender people are significantly correlated with their attitudes toward LGB people, attitudes toward transgender people tend to be less positive than attitudes toward LGB people (Norton & Herek, 2013). Similarly, Herek (2002) demonstrated that heterosexual adults' attitudes toward bisexual people were significantly less positive than their attitudes toward gay men and lesbians, people living with AIDS, racial, ethnic, and national groups, people with differing views on abortion rights, and religious groups. Cragun and Sumerau (2015) found that attitudes were most to least positive in the following order for specific social identity groups: heterosexual, gay/lesbian, bisexual, and then transgender people. These past findings suggest the importance of further examining parent-child communication about and attitudes toward transgender and bisexual people, as communication and attitudes about these social groups may differ from communication about lesbian, gay, and bisexual people combined. This research is important because it could contribute to more detailed development of parenting interventions regarding LGB-affirming communication skills.

This study illustrates the relationships between parents' verbal messages and youths' attitudes about LGB people. As discussed above, non-verbal messages, tone, and non-discussion or silence regarding LGB issues were not assessed in the present study. A useful next step for this program of research will be to systematically code parents' non-verbal communication and silence during the prompted conversations. Non-verbal messages and silence may provide children with information about their parents' attitudes about sexual orientation beyond their verbal messages. Analyzing non-verbal messages and silence could further inform best practices in LGB-affirming parenting.

2. Practice

According to Tucker and Potocky-Tripodi's (2006) systematic review of interventions seeking to increase heterosexual people's positive attitudes toward lesbian and gay peers, there were no interventions published at that time that met criteria for a well-established or probably efficacious intervention. A more recent meta-analysis identified some sexual prejudice interventions that were supported by the literature (e.g. education, contact with LGB people, and changing social norms), however the study concluded with a call for more research assessing interventions to promote LGB-affirming attitudes and behaviors (Bartoş, Berger, & Hegarty, 2014). The first step to creating such interventions is to understand the development of youths' attitudes; a necessary next step is to then develop and evaluate interventions aimed at enhancing positive sexual orientation attitudes. This study empirically demonstrated that parent messages about sexual orientation are related to youths' explicit and behavioral attitudes toward LGB people. As stated by Riesch, Anderson, & Krueger (2006), parent communication can be modified, making it a useful target for intervention. The current study suggests that an important avenue for intervention

is to help parents provide positive verbal messages about LGB people in order to promote youths' positive explicit and behavioral attitudes toward LGB peers. As previously discussed, school climate is linked to LGB youths' rates of victimization and discrimination (Goodenow et al., 2006; Saewyc et al., 2015), absences (Goodenow et al., 2006), and mental health including suicidal thoughts and attempts (Saewyc et al., 2014). Therefore, if intervention can occur in the parenting environment such that all children receive LGB-affirming messages and develop positive attitudes and behaviors toward LGB peers, this would contribute to LGB youths' overall wellness.

Beyond providing a rationale for training parents in LGB-affirming parenting, this study also begins to clarify the types of messages that parents could use in order to support positive attitude development in their children. The results illustrate that negative youth attitudes are associated with heteronormative and negative parent messages and provide insight into the potential negative impact of some neutral messages. Parents' negative and heteronormative messages were more nuanced and covert than expected. Furthermore, parent messages existed on a continuum, rather than in clearly defined categories. Parent training interventions would benefit from focusing on microaggressions and nuanced negative messages in order to reduce their occurrence, as well as exploring the range of positive messages and how different types of positive messages can range from accepting to affirming.

With this rationale and increased knowledge about the spectrum of parent messages about LGB issues, an important next step is to develop evidence-based parent-child communication training interventions that will help all parents, regardless of their children's sexual orientation, to practice LGB-affirming parenting. A variety of interventions based on

the evidence gathered in this study could be used to develop these interventions. Parents could practice responding to the study prompts, (1) Advise your child about what to do if a friend is feeling attracted to someone of the same sex and (2) Discuss whether or not LGB people could be role models for teenagers, including reasons why or why not. Trainers could provide parents with feedback on their responses to these practice scenarios regarding the degree to which their messages were LGB-affirming or not. Parents could also practice challenging non-affirming, heteronormative, and neutral messages. Videos demonstrating how parents could formulate LGB-affirming messages would also be a useful psychoeducational tool. Parents often describe feeling anxious and isolated in making choices about how to communicate with their children about sexuality (Stone et al., 2013); developing group-based parent interventions could be a helpful strategy for normalizing parents' anxieties about these conversations while promoting LGB-affirming family communication. Evaluation of such interventions will be an essential component of this process in order to determine whether these interventions have an impact on youth attitudes.

Parents often assume their children are or will be heterosexual even if their child later comes out as LGB (Swall & Swall, 2000), therefore it is important for all parents to have the skills, knowledge, and attitudes necessary to engage in LGB-affirming parenting. Furthermore, if parents have an impact on their children's attitudes and behaviors toward LGB people, training all parents to engage in LGB-affirming parenting has the capacity to improve social and academic environments for LGB youth via the development of young allies to LGB communities. Positive attitudes about sexual orientation diversity have been linked to open-mindedness and acceptance of various forms of diversity (Goldberg, 2007; Saffron, 1998). Thus, supporting LGB ally development in youth could also serve to create

a safer climate for other marginalized youth. Through intervening in family communication about sexual orientation, we may be able to improve LGB youths' lives, both directly and indirectly.

D. Conclusion

The present study sought to determine whether parent messages about sexual orientation were associated with youth attitudes about LGB people. Despite the small sample size, this study demonstrated medium to large effect sizes in the relationships between parent messages and youths' explicit and behavioral attitudes. This shows the potential impact of training all parents to engage in LGB-affirming parenting. If children's attitudes reflect what parents say about LGB issues, and if parents can convey verbal messages that promote positive attitudes in their children, this would lead to a more positive and affirming social environment for LGB youth. This study yields compelling data suggesting the value of parent training on this topic, as well as avenues to begin developing and evaluating such interventions. Ultimately, creating LGB-affirming parenting interventions could impact youths' attitudes about LGB people, and make a difference for their LGB peers.

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Table 1. Description of Participants

	Youth	Parent
Number of Participants	23	23
Age (years)		
M	15.39	47.43
SD	1.11	7.22
Range	14 – 18	34 – 65
Race/Ethnicity*		
Asian	2 (8.7%)	1 (4.3%)
European American/White	20 (87.0%)	19 (82.6%)
Latino(a) or Hispanic	4 (17.4%)	5 (21.7%)
Native Hawaiian or Other Pacific Islander	1 (4.3%)	0 (0%)
Other Race/Ethnicity	1 (4.3%)	1 (3.8%)
Gender Identity		
Girl or Woman	11 (47.8%)	23 (100.0%)
Boy or Man	11 (47.8%)	0 (0%)
Transgender	1 (4.3%)	0 (0%)
Sexual Orientation Identity		
Heterosexual	23 (100.0%)	23 (100.0%)
Socioeconomic Status**		
M	6.37	6.43
SD	1.24	1.90
Range	4 – 8	1 – 9
Religious Affiliation		
No Religious Affiliation	13 (56.5%)	11 (47.8%)
Buddhist	1 (4.3%)	0 (0%)
Catholic	0 (0%)	2 (8.7%)
Christian/Christianity	5 (21.7%)	3 (13.0%)
Episcopalian	0 (0%)	1 (4.3%)
Jewish/Judaism	2 (8.7%)	2 (8.7%)
LDS	1 (4.3%)	0 (0%)
Methodist	0 (0%)	1 (4.3%)
Nazarene	1 (4.3%)	0 (0%)
Unitarian	0 (0%)	1 (4.3%)
Other Religious Affiliation	0 (0%)	1 (4.3%)
Missing	1 (4.3%)	1 (4.3%)

Religiosity***		
M	3.42	4.42
SD	2.69	2.95
Range	1 – 9	1 – 9

*Participants could check all that applied, thus percentages may add up to more than 100%.
**Socioeconomic status was measured with one self-report item, 1 (lowest) – 10 (highest).
***Religiosity was measured with one self-report item, 1 (religion is not at all important) – 9 (religion is extremely important).

Table 2. Coding Structure and Frequencies

Positive/LGB-Affirming Messages = messages that *explicitly* affirm LGB people, their lives, behaviors, or relationships; or promote positive attitudes or behaviors toward LGB people.

Code	Description	Fre-quency
	Societal Issues: Advocacy and Inequality	
Advocate	Encouraged child to advocate or demonstrated advocacy for LGB people; provided information about how to develop advocacy behaviors (e.g. I'm a huge advocate for LGB people; I'm involved in PFLAG; Be helpful/an advocate/an ally to your friend; Stand up for your friend; Model LGB-affirming attitudes and behaviors to your friends; Intervene if someone is getting bullied)[2]	11
Positive attitude or behavior recognition	Encouraged or supported child's positive attitudes or behaviors toward LGB people or issues (e.g. "I'm glad you support LGB people.")[7]	27
Challenged	Challenged negative viewpoints and/or stereotypes about LGB people or issues (e.g. Provided information or perspective that challenged negative stereotypes and/or negative viewpoints)[7]	21
Educated	Educated child about LGB issues with correct information; corrected child about LGB issues (e.g. "Bisexual means being attracted to girls and boys.")[7]	3
Organizations	Supported LGB-serving organizations, school resources, or events (e.g. "It's great that your school has a GSA.")[1]	1
Highlighted inequality	Highlighted inequality and its impact and/or encouraged child to understand inequality and its impact and/or empathized with the challenges of anti-LGB discrimination (e.g. "Discrimination has a negative effect on LGB people;" "It must be so hard that not everyone has accepting parents;" "Some people are privileged…"). Inequality may refer to unearned privileges and/or oppression related to sexual orientation identities[1]	31
Life possibilities	Indicated that LGB people have many possibilities for their lives (e.g. to be happy, range of careers, married or not, children or not) and that the possibilities are not contingent upon sexual orientation identity.[7]	1
Expanded view of LGB people	Expanded child's thinking about who LGB people might be (e.g. LGB people can be republican, Catholic, etc.)[7]	2
Applaud change	Expressed positive feelings about historical, generational, systemic, and/or individual changes toward greater affirmation of LGBTQ people or expressed hope that such changes will occur (e.g. "It's	14

	great to see so much has changed since I was young;" "I've developed much more positive attitudes as an adult.")[1]	
Other diversity	Encouraged child to use personal experiences and/or knowledge of other diversity issues to promote LGBTQ-affirming attitudes (e.g. connecting LGBTQ rights to other issues such as racial justice, socioeconomic discrimination, gender inequality, etc.)[7]	7
Modeled positivity discussing	Modeled positivity while talking about LGB issues (e.g. "Oh that's easy, we've talked about this before;" "This is the perfect topic to discuss!")[7]	12
	Interpersonal Issues: Support and Relationships	
Emotional support	Encouraged child to provide emotional support to LGB people; demonstrated or encouraged empathy for LGB people (e.g. be kind, supportive, compassionate, listen, be empathic; offer unconditional love)[1]	38
Right to confidentiality	Encouraged child to keep information about another person's sexual orientation identity in confidence or to protect LGB person's information (e.g. "If they aren't out, don't tell other people;" "Keep this information in confidence.")[7]	8
Don't engage in mean behaviors	Told child not to be mean to an LGB person, make them feel bad, or hurt them because of their sexual orientation (e.g. "Never gossip about someone's sexual orientation;" "Don't use derogatory language")[7]	2
Avoid negative internal attitudes/judgments	Told child not to have negative feelings or evaluations of LGB people or modeled this for child (refers to internal attitudes as opposed to behavior toward a person; e.g. "Don't judge a person based on their sexual orientation identity;" "Be non-judgmental.")[7]	11
Don't change relationship	Said it shouldn't change child's relationship if someone comes out as LGB to child, or modeled this (e.g. "Remain friends;" "It didn't change my relationship when someone came out as LGB to me.")[7]	20
Same respect as het.	LGB people deserve to be treated with the same respect, value, or kindness as heterosexual people (e.g. Everyone should be treated fairly)[7]	7
Link to LGB-affirming support	Encouraged child to connect LGB or questioning friend with LGB-affirming support (e.g. GSA, an ally, supportive parent/teacher/therapist)[7]	8
Protect safety	Attended to or encouraged child to attend to the safety of an LGB person (e.g. "Involve others who can keep them safe;" "Assess whether they are thinking of harming themselves;" "Ask if they feel safe at home.")[7]	6
	Attitudes about People Identifying as LGB	
Affirmed child being LGB	Explicitly stated they would support their child identifying as LGB or exploring their sexual orientation identity[7]	5

Affirmed others being LGB	Explicitly stated they would support someone (friend, sibling, etc.) identifying as LGB or exploring their sexual orientation identity[7]	4
Accepting	Expressed lack of negativity toward LGB people in an accepting or affirming manner (e.g. "I have absolutely no problem at all with that;" "It's not a big deal at all to me.")[7]	25
Tolerance	Encouraged tolerance for LGB people (e.g. "It's important to have tolerance for different types of people.")[7]	2
Normalized	Normalized the range of sexual orientations (e.g. "People are all different sexual orientations"; "10-12% of the population is gay, so you probably know someone who is gay")[7]	21
Born this way	People are born with their sexual orientation; people can't choose their sexual orientation (e.g. "Personally I believe people are born LGB.")[7]	5
No difference	There are no differences between LGB and heterosexual people. (e.g. "The only difference between a lesbian woman and me is who we're attracted to.")[7]	8
Supported same sex relationships	People deserve to find loving relationships regardless of sexual orientation identity; showed or encouraged support for same-sex relationships (e.g. "They are so cute together [referring to same sex couple]"; "LGB people deserve loving relationships")[7]	16
LGB people can be role models	Said that LGB people can be good role models (e.g. "Of course LGB people can be role models.")[7]	34
SO doesn't diminish	A positive view of someone shouldn't be diminished based on someone's sexual orientation[7]	3
Role model doesn't depend on SO	Indicated that a person can be a role model regardless of sexual orientation identity; role model status isn't diminished based on someone's sexual orientation (e.g. "It doesn't matter if a role model comes out at LGB to me, they are still a good role model")[1]	40
LGB people have strengths	LGB people are not just equal to straight people, but LGB people have some special, positive qualities (e.g. "LGB people are especially awesome!"; "A same sex couple I know has a better relationship than most straight couples I know.")[7]	6
Positive model	LGB people are positive role models *because* of something related to their sexual orientation identity (e.g. LGB people have something unique to offer based on minority status or potential past discrimination, therefore they are uniquely positive role models due to sexual orientation identity; e.g. "Chances are, if someone came out they overcame some obstacles and would be an especially good role model.")[7]	31

Positive LGB examples	Gave examples of a positive LGB person (e.g. "He was just such a great example of a role model;" "She had such a great influence on everyone around her.")[7]	31
Positive religion	Talked about positive religious views regarding LGB issues[8]	0
	Other	
Positive other	Other positive or LGB-affirming message not captured above[1]	1
TOTAL	**TOTAL POSITIVE MESSAGES**	**462**

Neutral Messages = messages that are not *non*-affirming, yet not clearly affirming; messages that are not clearly positive or negative.

Neutral content	Discussed sexual orientation or LGB issues without expressing any positive or negative opinion, feelings on the issue, etc. (e.g. discussed an LGB person they know without saying an opinion; asked a non-leading question that did not express any positive or negative attitudes)[7]	44
Society has changed	Acknowledged (but didn't necessarily applaud) historical, generational, systemic, and/or individual changes toward greater affirmation of LGBTQ communities and people (e.g. "It's interesting, a lot has changed in societal attitudes about LGB people.")[7]	5
LGB people exist	Acknowledged that someone/people might be LGB without expressing positive or negative attitudes about this (e.g. "If he's attracted to someone of the same gender, that's his choice;" "Is your friend X gay?")[7]	41
Non-heteronorm.	Didn't assume heterosexuality of child or someone else, without placing any positive or negative value on this (e.g. "Do you eventually want a partner?"; "Has someone of the same sex ever been attracted to you?")[7]	2
Child's attitude or behavior recognition	Acknowledged child's attitudes or behaviors toward LGB people or issues *without* offering their own evaluation of these attitudes or behaviors (e.g. "I know you support LGB people;" "Ok, so you believe…" "So what you feel is…")[7]	22
Others' attitude or behavior recognition	Acknowledged others' (societal, other people they know) attitudes or behaviors toward LGB people or issues *without* offering their own evaluation of these attitudes or behaviors (e.g. "Some people think…")[7]	16
Disregard	Told child to disregard or not notice other people's sexual orientation identity ("It's their business, so don't talk about it"; "ignore it"; "it's private")[1]	4
Stay neutral	Encouraged child to maintain a neutral stance toward LGB issues/friends or modeled this (e.g. "Don't encourage or discourage them;" "Don't say it's bad or	7

	good to be gay;" "Keep whether you agree or disagree or whatever to yourself.")[7]	
LGB people are different	Indicated that LGB people are different from heterosexual people, without a positive or negative assessment of that difference (e.g. "LGB people are different from you, so you might not be able to understand.")[7]	2
Nothing negative	Expressed lack of negativity toward LGB people in a way that was neither accepting nor rejecting (e.g. "I don't think it would be so weird if your friend came out.")[7]	2
Link to unclear support	Encouraged child to connect friend with unclear support (e.g. parent, friend, therapist, organization that is not clearly LGB-affirming or LGB non-affirming)[7]	6
Neutral model	Being LGB doesn't make a person a good or bad role model; we couldn't say if someone is a good or bad role model just based on their sexual orientation (e.g. "If they're going to be a role model, is has to be for something more than just being LGB.")[7]	19
Failed to challenge	Stayed neutral and failed to challenge someone's negative stereotypes, viewpoints, or incorrect information about LGB people[7]	5
Neutral other	Other neutral message not captured above[7]	6
TOTAL	**TOTAL NEUTRAL MESSAGES**	**181**

Heteronormative Messages = messages that *presume* heterosexuality or mixed sex partnering for their child or others.

Limited options	Assumed LGB people have limited options for their lives (e.g. Gay people can't have children or get married)[7]	0
Assumed het.	Assumed someone (e.g. child, friends, siblings, or peers) is heterosexual (e.g. "You don't have any gay friends right?"; "No, he has to be straight.")[3]	3
Assumed discomfort	Assumed child would feel uncomfortable with LGB people or friend who is same-sex attracted (e.g. "It would probably be uncomfortable for you and your friends if someone in your group was feeling attracted to someone of the same sex.")[7]	13
Heteronorm. acceptability	LGB people are more valued if they appear straight or are consistent with heteronormative standards (e.g. "Yeah, they can be a role model as long as they aren't bringing their sexual orientation into the workplace"; "I'm fine with gay friends as long as they're not in my face about it.")[7]	6
Don't make a big deal	We shouldn't make a big deal out of people's sexual orientation identities or labels (e.g. "It's silly to label people's sexual orientations"; "I think it's contradictory to be so focused on sexual orientation, it's a non-issue now")[7]	7

Asked more questions	Asked more questions (potentially invasive) of LGB people than they would of straight people (e.g. "You should ask her how long she's been gay.")[7]	4
Other heteronorm.	Other heteronormative message not captured above[7]	0
TOTAL	**TOTAL HETERONORMATIVE MESSAGES**	**33**

Negative/Anti-LGB messages = messages that implicitly or explicitly disaffirm LGB people, their lives, behaviors, or relationships; or promote negative attitudes or behaviors toward LGB people.

	Stereotypes	
Objectified	Objectified LGB people by talking about LGB people in terms of how they could be beneficial or entertaining (e.g. Could be your shopping buddy; LGB people as being the "comedic relief")	0
Pathologized	Associated and/or assumed pathology, abnormality, disease, or deviance with LGB people (e.g. "If someone is gay they need to be careful, there's a lot of STD's going around;" Associated gay people with pedophilia)[4,7]	2
Sex/Safer Sex	Focused on sexuality or safer sex for LGB people to a greater extent than they would for heterosexual people (e.g. "If you're friend came out, I'd have to give them the talk;" "Bisexual people are more likely to cheat on their partner.")[7]	6
Acting gay	Expressed discomfort or negativity about LGB people who "act gay" in terms of gender expression (e.g. "It would be fine to have a teacher who is gay, unless he comes in wearing a showgirl outfit.")[4,7]	1
Gender expression stereotype	Stereotyped LGB people as always gender non-conforming (e.g. Gay men act like women; lesbians are masculine)[4,7]	0
Phase	Assumed someone is "going through a phase" or confused if they are in a same-sex relationship or feel same sex attraction (e.g. "I didn't think it was real;" "They'll probably change their mind")[6]	1
Emphasized negative aspects	Emphasized the negative aspects of identifying as LGBTQ (e.g. societal judgment, negative mental health outcomes, alcohol abuse, STIs) in order to caution someone about being LGB ("They should really weigh out the potential consequences first.")[7]	9
Other stereotypes	Endorsed other stereotypes or made comments that generalized about LGB people (e.g. LGB people take advantage minority status to get access to resources unfairly)[7]	0
	Society Shouldn't Support LGB People	
Disapproval organizations	Expressed discomfort and/or disapproval of LGB-serving organizations, school resources, or events (e.g. "They shouldn't have GSAs in middle schools")[5]	2

Exposure to LGB issues	Expressed concern about teens being exposed to LGB issues (e.g. through media or influential people; "LGB issues shouldn't be taught at school.")[7]	4
Concerned about changes	Expressed discomfort and/or disapproval about historical, generational, systemic, and/or individual changes toward greater affirmation of LGBTQ communities and people (e.g. "It's concerning to me that LGBTQ issues have become so popular and it's become so accepted.")[7]	1
	Minimizing	
Misuse of terms	Parent was unaware of or misused terms related to LGB issues or dismissed importance of accurate use of terms or acronyms (e.g. "Yeah, pansexual, gender non-confirming, whatever;" "GBTQ, whatever, I can't remember." "Questioning your sexual orientation and coming out as gay is the same thing.")[7]	6
Individual heterosexism	Parent denied being heterosexist but made a heterosexist remark[4]	0
Societal heterosexism	Minimized and/or denied the reality of societal heterosexism (e.g. An LGB person thinking they are being discriminated against are just paranoid; Indicating heterosexism isn't really an issue anymore[4]	0
	Attitudes about People Identifying and Being Out as LGB	
Disapproval or Discomfort LGB child	Expressed discomfort and/or disapproval of child identifying as LGB or exploring sexual orientation identity (e.g. "I don't want you to be gay;" "It would make me really uncomfortable if you questioned your sexual orientation.")[7]	3
Disapproval or Discomfort LGB others	Expressed discomfort and/or disapproval of someone (e.g. child's friends, siblings, peers) identifying as LGB or exploring sexual orientation identity[7]	1
Disapproval same sex sexuality	Expressed discomfort and/or disapproval of someone (e.g. child's friends, siblings, peers) engaging in same sex sexual behavior (e.g. "It's awkward to imagine two men being sexual with each other.")[7]	4
Doubted someone's identity	Expressed doubt about a person's sexual orientation identity (e.g. "I think she was just trying to get attention when she came out as bisexual;" "I thought she was being sarcastic when she came out.")[7]	5
Don't act	Said that it's ok for people to be LGB or same sex attracted as long as they are not acting on their feelings and/or perceived LGB people's attraction as causing a threat (e.g. "Well, it would only be awkward if they were in a relationship")[7]	2
Take caution	Told child to take caution, have stricter boundaries, or keep distance from LGB people (e.g. "Make sure to keep firm boundaries if your friend comes out to you.")[7]	1

Anti-outness	Expressed negativity about LGB people who talk about being LGB, demonstrate public displays of affection, or who otherwise do not keep sexual orientation private (e.g. Being gay must be kept private; "LGB people shouldn't push their views on others")[7]	5
Negative model	Said LGB people are negative role models due to sexual orientation (If a person is LGB, they cannot be a good role model)[8]	0
No special recognition	LGB people don't deserve special recognition as role models (e.g. "Why would you look up to someone just because they're gay or lesbian?"; "If they're modeling being gay or lesbian, that's not a role model.")[7]	7
Negative LGB examples	Gave examples of a negative LGB person (e.g. "She did so many negative things, she's not a good role model.")[7]	3
Choose not to be or Resist LGB	LGB people should try to change their sexual orientation identity or resist same sex attraction (e.g. "Feeling same-sex attracted is a test of faith")[7]	2
Offer non-affirming support	Encouraged child to support an LGB person using strategies that are anti-LGB or non-affirming (e.g. "Pray that they change their mind," "Help them to choose the 'right' path")[7]	2
Modeled negativity discussing	Modeled negativity or discomfort while talking about LGB issues (e.g. "Wow, I didn't think we were going to have to talk so much about LGB issues"; "This is weird to talk about.")[7]	2
Refer to non-affirming support	Encouraged child to connect friend with LGB non-affirming support (e.g. conversion therapy, LGB non-affirming organizations)[8]	0
Negative religion	Indicated that God or religious organization would not approve of same-sex relationships, or that parents' religious values would create conflict with LGB people (e.g. "Because of our religion, we wouldn't support people being LGB")[7]	10
Negative attitudes are OK	It's ok to have negative attitudes, as long as you don't act on them or show them[7]	0
	Other	
Other Anti-LGB	Other negative or anti-LGB message not captured above[7]	0
TOTAL	**TOTAL NEGATIVE MESSAGES**	**79**

TOTAL PARENT MESSAGES = 752

1. Code developed from pilot data
2. Code developed based on being the opposite of another pilot data code
3. Code developed based on researcher expertise
4. Code developed based on microaggressions literature (e.g. "That's So Gay!" by Kevin Nadal)
5. Code developed by research assistants
6. Code developed based on parenting guide ("This is a Book for Parents of Gay Kids" by Danielle Owens-Reid and Kristin Russo)
7. Code developed from study data
8. Code developed based on being the opposite of study data code

Table 3. Parents' Scores on Main Variables

	M	SD	Observed Range	Scale Range
Modern Homonegativity Scale (MHS)	26.22	10.87	12 – 45	12 (most positive) – 60 (most negative)
Implicit Attitude Test (IAT)	0.30	0.44	-0.55 – 0.90	-2 (strongest preference for gay people) – +2 (strongest preference for straight people)
Parent Messages (Frequency)				
Positive	20.09	9.43	5 – 34	N/A
Neutral	7.87	4.55	2 – 21	N/A
Negative*	4.87	5.50	0 – 17	N/A
Total Messages	32.70	8.86	15 – 47	N/A
Positivity-Negativity Ratio (PNR)	0.79	0.21	0.41 – 1.00	0 – 1.00

*Note that negative refers to a collapsed variable made up of heteronormative and negative messages.

Table 4. Youths' Scores on Main Variables

	M	SD	Observed Range	Scale Range
Modern Homonegativity Scale (MHS)	27.13	10.45	12 – 44	12 (most positive) – 60 (most negative)
LGBT Ally Identity Development Scale (LGBT-AID)	-1.35	2.58	-6.13 – 4.46	-8.11 (most negative) – 8.09 (most positive)
Implicit Attitude Test (IAT)	0.31	0.42	-0.61 – 0.93	-2 (strongest preference for gay people) – +2 (strongest preference for straight people)

Table 5. Correlations among Key Variables

		Youth Behavior-al Attitudes	Youth Implicit Attitudes	Youth LGB Contact	Parent Explicit Attitudes	Parent Implicit Attitudes	Parent LGB Contact+	Positive Propor-tion	Neutral Propor-tion	Negative Propor-tion	Positive-Negative Ratio	Parent Religios-ity	Youth Religios-ity
Youth Explicit Attitudes	*r*	-.736**	.223	-.181	.750**	.142	-.127	-.536**	.313	.429*	-.450*	.396	.603**
	n	23	23	23	23	23	22	23	23	23	23	20	20
Youth Behavior-al Attitudes	*r*	____	-.401	.391	-.632**	-.296	.076	.335	-.071	-.426*	.434*	-.453*	-.579**
	n		23	23	23	23	22	23	23	23	23	20	20
Youth Implicit Attitudes	*r*		____	.065	.140	.127	-.004	.230	-.091	-.206	.148	.315	.428
	n			23	23	23	22	23	23	23	23	20	20
Youth LGB Contacts	*r*			____	-.159	.028	.451*	-.081	.025	.052	-.094	.104	.165
	n				23	23	22	23	23	23	23	20	20
Parent Explicit Attitudes	*r*				____	.055	-.170	-.422*	-.074	.664**	-.659**	.430	.469*
	n					23	22	23	23	23	23	20	20
Parent Implicit Attitudes	*r*					____	-.386	-.093	.080	.087	-.057	.134	.359
	n						22	23	23	23	23	20	20
Parent LGB Contacts+	*r*						____	-.150	-.010	.182	-.234	.222	-.254
	n							22	22	22	22	19	19
Positive Message Proportion	*r*							____	-.694**	-.663**	.724**	-.223	-.296
	n								23	23	23	20	20

		Youth Behavior-al Attitudes	Youth Implicit Attitudes	Youth LGB Contact	Parent Explicit Attitudes	Parent Implicit Attitudes	Parent LGB Contact+	Positive Propor-tion	Neutral Propor-tion	Negative Propor-tion	Positive-Negative Ratio	Parent Religios-ity	Youth Religios-ity
Neutral Message Proportion	*r*								____	-.070	-.014	-.076	-.059
	n									23	23	20	20
Negative Message Proportion	*r*									____	-.979**	.369	.386
	n										23	20	20
Positive-Negative Ratio	*r*										____	-.347	-.366
	n											20	20
Parent Religiosity	*r*											____	.658*
	n												20

Note.
* $p < .05$; ** $p < .01$
+ All correlations with parent LGB contacts were computed with the transformed version of the variable described in Hypothesis 6.

Table 6. False Discovery Rate (FDR) Analysis and Corresponding *p*-Values

Test	Analysis	Observed *p*-value	FDR *p*-value	Significance
1	$H4_c$: Mediation Model	0.001	0.005	Significant
2	H_5: Correlation of Explicit and Behavioral	0.001	0.01	Significant
3	H_6: Correlation of Parent Messages and Contacts	0.001	0.015	Significant
4	H_1: Explicit Regressed on Parent Messages	0.031	0.02	Not Significant
5	H_{4a}: Behavioral Regressed on Parent Messages	0.039	0.025	Not Significant
6	H_5: Correlation of Implicit and Behavioral	0.058	0.03	Not significant
7	H_2: Moderation Model	0.19	0.035	Not Significant
8	H_5: Correlation of Implicit and Explicit	0.30	0.04	Not Significant
9	H_6: Correlation of Parent Explicit and Contacts	0.45	.045	Not Significant
10	H_3: Implicit Regressed on Parent Messages	0.50	.05	Not Significant

Table 7. Summary of Results

Hypothesis/Exploratory Analysis	Variables Included	Test	Results
H_1: Parent messages will be associated with youth explicit attitudes about LGB people.	Parent Messages (PNR) Youth Explicit Attitudes (MHS)	Linear Regression	Parent messages neared significance in relationship with youth explicit attitudes, $F(1, 21) = 5.336$, $p = .031$ *Medium effect size, R^2 = 20.3%*
H_2: Parents' implicit attitudes will moderate the relationship between parent messages and youth explicit attitudes.	Parent Messages (PNR) Parent Implicit Attitudes (IAT) Youth Explicit Attitudes (MHS)	Hierarchical Multiple Regression (Moderation Analysis)	Parent implicit attitudes did not significantly moderate relationship between parent messages and youth explicit attitudes, $F(1, 19) = 1.779$, $p = 0.198$ *Pattern of data in expected direction*
H_3: Parent messages will be associated with youth implicit attitudes about LGB people.	Parent Messages (PNR) Youth Implicit Attitudes (IAT)	Linear Regression	Parent messages were not significantly associated with youth implicit attitudes, $F(1, 21) = 0.469$, $p = 0.501$

H_4: (A) Parent messages will be associated with youth behavioral attitudes about LGB people (B) Parent messages will account for more of the variance in youth explicit than behavioral attitudes (C) Youth explicit attitudes will mediate the relationship between parent messages and youth behavioral attitudes.	(A) Parent Messages (PNR) Youth Behavioral Attitudes (LGBT-AID) (B) Comparison of R^2 between hypothesis H_4(A) and H_1 (C) Parent Messages (PNR) Youth Behavioral Attitudes (LGBT-AID) Youth Explicit Attitudes (MHS)	(A) Linear Regression (B) Comparison of R^2 between hypothesis H_4(A) and H_1 (C) Linear and Multiple Regression (Mediation Analysis)	(A) Parent messages neared significance in its association with youth behavioral attitudes, $F(1, 21) = 4.866$, $p = 0.039$ *Medium effect size,* R^2 *= 18.8%* (B) Parent messages explains more variance in youth explicit than behavioral attitudes (C) Youth explicit attitudes mediates the relationship between parent messages and youth behavioral attitudes, $F(2,20) = 12.46$, $p < 0.001$

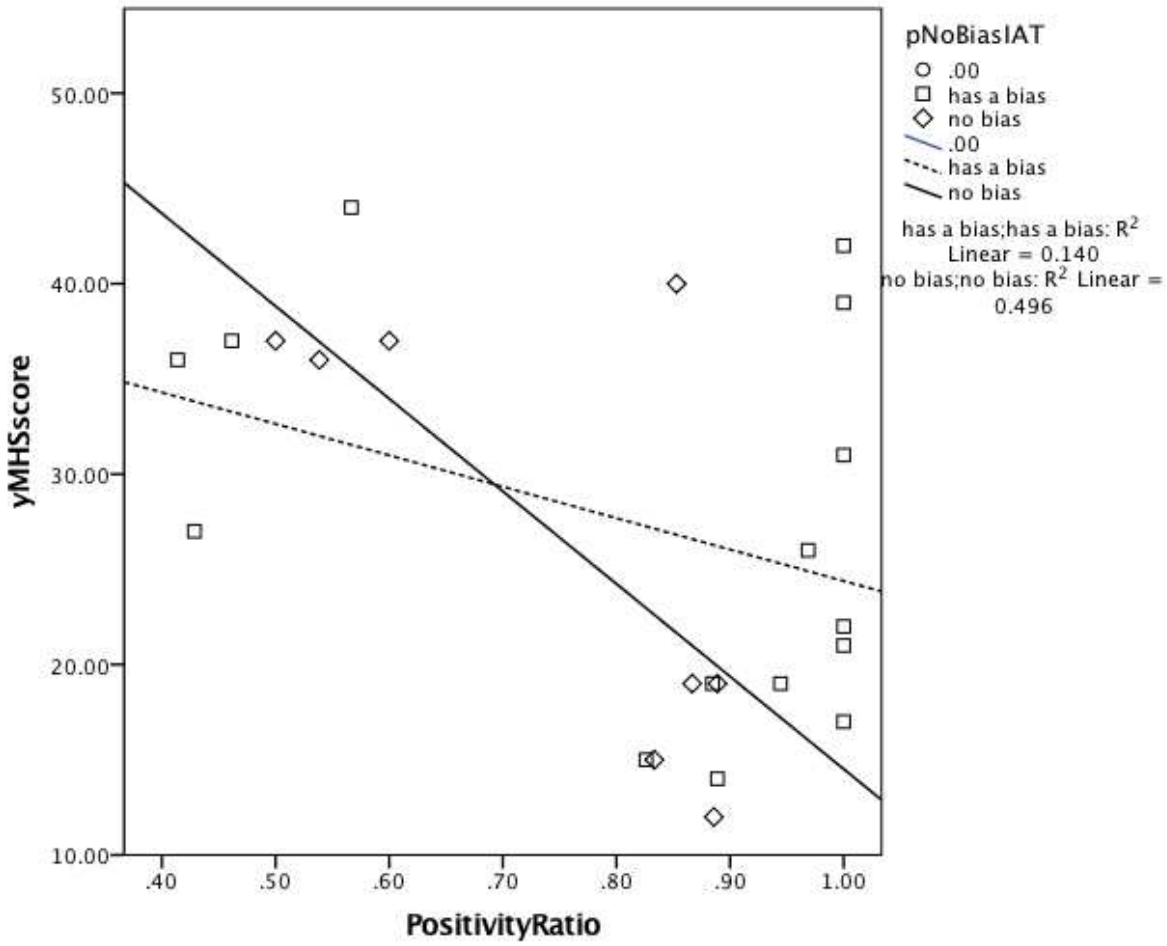
H_5: Youth explicit, implicit, and behavioral attitudes will correlate with one another.	Youth Explicit Attitudes (MHS) Youth Implicit Attitudes (IAT) Youth Behavioral attitudes (LGBT-AID)	Series of three Pearson's correlations	Significant large correlation between youth explicit and behavioral attitudes, $r(23) = -0.73$, $p < 0.001$ Non-significant medium correlation between youth implicit and behavioral attitudes, $r(23) = -0.40$, $p = .058$ No significant correlation between youth implicit and explicit attitudes, $r(23) = 0.22$, $p = 0.30$
H_6: Parents' explicit attitudes will correlate with their interpersonal contact with LGB people and parent messages.	Parent Explicit Attitudes (MHS) Parent Interpersonal Contact Parent Messages (PNR)	Series of two Pearson's correlations	Significant large correlation between parent explicit attitudes and PNR, $r(23) = -0.659$, $p = 0.001$ No significant correlation between parent explicit attitudes and interpersonal contact, $r(22) = -0.17$, $p = 0.45$

E_1: Does interpersonal contact with LGB people contribute to models of youth attitudes regressed on parent messages?	Parent Messages (PNR) Youth Interpersonal Contact (A) Youth Explicit Attitudes (MHS) (B) Youth Implicit Attitudes (IAT) (C) Youth Behavioral Attitudes (LGBT-AID)	(A) Pearson's Correlation (B) Pearson's Correlation (C) Multiple Regression	(A) No relationship between youth explicit attitudes and contact, $r(23) = -0.181$, $p = 0.409$ (B) No relationship between youth implicit attitudes and contact, $r(23) = .065$, $p = 0.767$ (C) Youth interpersonal contact and the PNR combined are more associated with youth behavioral attitudes than the PNR alone, $F(2, 20) = 27.555$, $p = 0.009$

E_2: Are proportions of positive and negative messages associated with youth attitudes, when accounting for the presence of neutral messages?	(A) Positive Message Proportion Youth Explicit Attitudes (B) Positive Message Proportion Youth Behavioral Attitudes (C) Negative Message Proportion Youth Explicit Attitudes (D) Negative Message Proportion Youth Behavioral Attitudes	Series of four linear regressions	(A) Positive message proportion is associated with youth explicit attitudes, $F(1, 21) = 8.456$, $p = 0.008$ *Large effect size, $R^2 = 25.3\%$* (B) Positive message proportion was not associated with youth behavioral attitudes, $F(1, 21) = 2.659$, $p = 0.118$ *Small effect size, $R^2 = 7.0\%$* (C) Negative message proportion is associated with youth explicit attitudes, $F(1, 21) = 4.725$, $p = .041$ *Medium effect size, $R^2 = 14.5\%$* (D) Negative message proportion is associated with youth behavioral attitudes, $F(1, 21) = 4.667$, $p = 0.042$ *Medium effect size, $R^2 = 18.2\%$*

E_3: How do mothers talk about their children's future partners?	Future Relationship Messages	Descriptive statistics (frequencies and percentages)	Majority (69.6%) described future partner as someone of different gender. Some (21.7%) used gender-neutral terms for future partner. Rarely (8.7%) acknowledged possibility of same sex partner.
E_4: To what degree do parents and youth agree regarding content of past discussions about sexuality?	Parent and Youth checklist of past discussions	Series of seven chi-square tests of association Descriptive statistics (frequencies and percentages)	No significance differences between mothers and youth regarding past discussions about sexuality, with the exception of STI's, $\chi^2(1) = 6.135$, $p = .013$. Disagreement about past discussions ranging from 17.4% to 47.8%.

Figure 1. Scatterplot of Youth Explicit Attitudes Related to Positivity-Negativity Ratio, Separated by Parent Implicit Attitudes



Appendix A

Modern Homonegativity Scale (Morrison & Morrison, 2002)

Instructions: After the statement, please circle the number which best represents your opinion.
Note: The term "LGB people" refers to lesbian, gay, and bisexual people.

		Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
1.	Many LGB people use their sexual orientation so they can obtain special privileges.	1	2	3	4	5
2.	LGB people seem to focus on the ways in which they differ from heterosexuals, and ignore the ways they are the same.	1	2	3	4	5
3.	LGB people do not have all the rights they need.	1	2	3	4	5
4.	The notion of universities providing students with undergraduate degrees in Gay and Lesbian Studies is ridiculous.	1	2	3	4	5
5.	Celebrations such as "Gay Pride Day" are ridiculous because they assume that an individual's sexual orientation should constitute a source of pride.	1	2	3	4	5
6.	LGB people still need to protest for equal rights.	1	2	3	4	5
7.	LGB people should stop shoving their lifestyle down other people's throats.	1	2	3	4	5
8.	If LGB people want to be treated like everyone else, then they need to stop making such a fuss about their sexuality/culture.	1	2	3	4	5
9.	LGB people who are "out of the closet" should be admired for their courage.	1	2	3	4	5
10.	LGB people should stop complaining about the way they are treated in society, and simply get on with their lives.	1	2	3	4	5
11.	In today's tough economic times, Americans' tax dollars shouldn't be used to support LGB people's organizations.	1	2	3	4	5

12.	LGB people have become far too confrontational in their demand for equal rights.	1	2	3	4	5

Note: Items 3, 6, and 9 are reverse scored.

Appendix B

Stimulus images used in Sexual Orientation Implicit Association Test (Nosek, Smyth, et al., 2007; Retrieved from http://projectimplicit.net/nosek/stimuli/)

1) Figure of two men

2) Figure of a woman and a man

3) Figure of two women

4) Figure of a woman and a man

5) Figure of two men

1) Figure of two women

Appendix C

The LGBT Ally Identity Development Instrument (LGBT-AID; Ji & Fujimoto, 2013)
Internal and Interpersonal Dimension

Instructions: Please read each statement and circle the number in the box that best applies to you.
Terms: LGBT = Lesbian, Gay, Bisexual, Transgender
LGBT Ally = A person who supports and/or advocates for the LGBT community.

		Does Not Apply to Me	Applies to Me Somewhat	Applies to Me	Applies to Me Very Much
1.	I rank the importance of my identity as an LGBT ally as high.	1	2	3	4
2.	I have explored how I can be an LGBT ally.	1	2	3	4
3.	One of my personal identities is being an LGBT ally.	1	2	3	4
4.	I have talked to others about being an LGBT ally.	1	2	3	4
5.	Others have told me that I am an ally to the LGBT community.	1	2	3	4
6.	My LGBT friends have told me that I am an ally to the LGBT community.	1	2	3	4
7.	I can show others how to be an ally to the LGBT community.	1	2	3	4
8.	I fill a need as an LGBT ally.	1	2	3	4
9.	I have a role as an LGBT ally.	1	2	3	4
10.	I take opportunities to demonstrate that I am an LGBT ally.	1	2	3	4
11.	I am confident in my abilities as an LGBT ally.	1	2	3	4
12.	I am confident in my knowledge about LGBT topics.	1	2	3	4
13.	I benefit from being an ally to the LGBT community.	1	2	3	4
14.	Others think of me as an ally to the LGBT community.	1	2	3	4
15.	I benefit from being an LGBT ally in my personal life.	1	2	3	4
16.	I can demonstrate my knowledge of LGBT topics.	1	2	3	4
17.	It is important to my LGBT friends that I continue to be an LGBT ally.	1	2	3	4
18.	I have thought about being an ally for the LGBT community.	1	2	3	4

		Does Not Apply to Me	Applies to Me Somewhat	Applies to Me	Applies to Me Very Much
19.	I talk about LGBT topics with LGBT persons.	1	2	3	4
20.	I benefit from being an ally to my LGBT friends.	1	2	3	4
21.	I make myself known as an LGBT ally in my personal life.	1	2	3	4
22.	I see a need to be an LGBT ally in my personal life.	1	2	3	4
23.	I practice being an LGBT ally in my personal life.	1	2	3	4
24.	I have the knowledge I need so I can be an ally to the LGBT community.	1	2	3	4
25.	I have confidence as an LGBT ally.	1	2	3	4
26.	I tell others that I support the LGBT community.	1	2	3	4
27.	I see myself as a credible ally to the LGBT community.	1	2	3	4
28.	Being an ally to the LGBT community is meaningful to me.	1	2	3	4
29.	I can define what being an ally to the LGBT community means to me.	1	2	3	4
30.	I tell others that I support my LGBT friends.	1	2	3	4
31.	I can define what being an ally to my LGBT friends means to me.	1	2	3	4
32.	Being an ally to my LGBT friends in meaningful to me.	1	2	3	4
33.	I see myself as an ally to the LGBT community.	1	2	3	4
34.	My behaviors and interactions with LGBT persons match my personal objectives as an LGBT ally.	1	2	3	4
35.	In general, my behaviors and interactions are consistent with how I see myself as an LGBT ally.	1	2	3	4
36.	I see myself as an ally to my LGBT friends.	1	2	3	4
37.	I can listen and be supportive if an LGBT person wants to talk to me about his or her concerns.	1	2	3	4
38.	I am aware that LGBT persons have concerns and experiences that deserve attention.	1	2	3	4

Appendix D

Youth Demographic Questionnaire

1. Age: ____

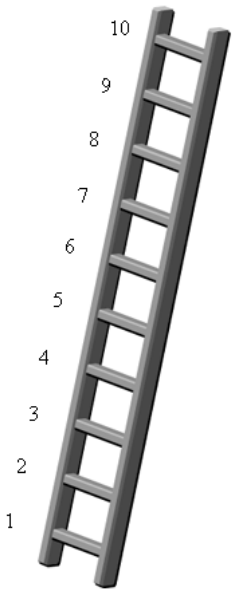
2. Current grade in school (check one):

   ____ 9th grade
   ____ 10th grade
   ____ 11th grade
   ____ 12th grade

3. How do you describe your race or ethnicity (check all that apply):
   ____ African American/Black
   ____ Asian
   ____ European American/White
   ____ Latino(a) or Hispanic
   ____ American Indian/Alaska Native
   ____ Native Hawaiian or Other Pacific Islander
   ____ Middle Eastern
   ____ Other (please specify) _____

4. **Think of this ladder as representing where people stand in the United States.** At the **top** of the ladder are the people who are the best off—those who have the most money, the most education, and the most respected jobs. At the **bottom** are the people who are the worst off—who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom. **Where would you place yourself on this ladder (please check one)?**

   ____ 10
   ____ 9
   ____ 8
   ____ 7
   ____ 6
   ____ 5
   ____ 4
   ____ 3
   ____ 2
   ____ 1



5. Gender (please check one):

____ Girl/Woman
____ Boy/Man
____ Transgender
____ Genderqueer
____ Other (please specify) _____

6. Sexual Orientation (please check one):

___ Bisexual
___ Heterosexual
___ Lesbian/Gay
___ Queer
___ Questioning/Not sure
___ Other (please specify) _____
___ Declined to state

7. Thinking about your sexual orientation that you just indicated, please indicate how open you are about your sexual orientation to your mother

___ she definitely does NOT know my sexual orientation
___ she might know my sexual orientation, but it is NEVER talked about
___ she probably knows my sexual orientation, but it is NEVER talked about
___ she probably knows my sexual orientation, but it is RARELY talked about
___ she definitely knows my sexual orientation, but it is RARELY talked about
___ she definitely knows my sexual orientation, and it is SOMETIMES talked about
___ she definitely knows my sexual orientation, and it is OPENLY talked about

8. Indicate the number of gay/lesbian/bisexual friends, relatives or acquaintances you have: (write in number): _____

9. How important is your religion to you? (please circle one number)

1 2 3 4 5 6 7 8 9

not at all; have no religion — extremely important; my religious faith is the center of my entire life

10. Do you consider yourself as belonging to any particular religion or denomination?

___ Yes → *If yes, please specify:* _____
___ No

11. Prior to today's conversations, has your mother talked to you about (check all that apply)…

___ Dating
___ Sexual orientation
___ Relationships
___ Marriage
___ Starting a family
___ Contraception
___ Sexually Transmitted Infections
___ None of these topics

12. How similar was today's conversation with your parent from past conversations about this type of topic with your parent (please check one)?

____ Very similar
____ Somewhat similar
____ Don't know
____ Somewhat different
____ Very different
____ We have never talked about this type of topic before

If today was somewhat or very different, how was it different?
(write in response)

If today was somewhat or very similar, how was it similar?
(write in response)

Appendix E

Parent Demographic Questionnaire

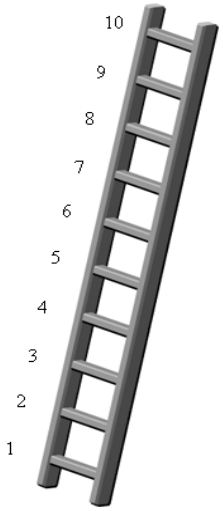
1. Age: ____

2. Level of education (please check one):
   - ____ less than high school diploma
   - ____ completed high school or GED
   - ____ completed trade/vocational school
   - ____ some college, no degree
   - ____ completed Associates degree
   - ____ completed Bachelors degree
   - ____ some graduate school
   - ____ completed graduate or professional degree
   - ____ other (please specify) _____

3. How do you describe your race or ethnicity (check all that apply):
   - ____ African American/Black
   - ____ Asian
   - ____ European American/White
   - ____ Latino(a) or Hispanic
   - ____ American Indian/Alaska Native
   - ____ Native Hawaiian or Other Pacific Islander
   - ____ Middle Eastern
   - ____ Other (please specify) _____

4. **Think of this ladder as representing where people stand in the United States.** At the **top** of the ladder are the people who are the best off—those who have the most money, the most education, and the most respected jobs. At the **bottom** are the people who are the worst off—who have the least money, least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the very bottom. **Where would you place yourself on this ladder (please check one)?**

   ____ 10
   ____ 9
   ____ 8
   ____ 7
   ____ 6
   ____ 5
   ____ 4
   ____ 3
   ____ 2
   ____ 1



5. Gender:

    ____ Woman
    ____ Man
    ____ Transgender
    ____ Genderqueer
    ____ Other (please specify) _____

6. Sexual Orientation:

    ___ Bisexual
    ___ Heterosexual
    ___ Lesbian/Gay
    ___ Queer
    ___ Questioning/Not sure
    ___ Other (please specify) _____
    ___ Declined to state

7. Indicate the number of gay/lesbian/bisexual friends, relatives or acquaintances you have: (write in number): _____

8. Relationship status (please check one):

    ____ Married to, partnered with, or dating a man
    ____ Married to, partnered with, or dating a woman
    ____ Married to, partnered with, or dating a transgender person
    ____ Single
    ____ Divorced or separated
    If divorced or separated, from what gender person (write in): _____
    ___ Other (please specify) _____

9. How important is your religion to you? (please circle one number)

1	2	3	4	5	6	7	8	9
not at all; have no religion								extremely important; my religious faith is the center of my entire life

10. Do you consider yourself as belonging to any particular religion or denomination?

    ___ Yes → *If yes, please specify:* _____
    ___ No

11. Prior to today's conversations, have you talked to your child about (check all that apply)…

___ Dating
___ Sexual orientation
___ Relationships
___ Marriage
___ Starting a family
___ Contraception
___ Sexually Transmitted Infections
___ None of these topics

12. How similar was today's conversation with your child from past conversations about this type of topic with your child (please check one)?

_____ Very similar
_____ Somewhat similar
_____ Don't know
_____ Somewhat different
_____ Very different
_____ We have never talked about this type of topic before

If today was somewhat or very different, how was it different?
(write in response)

If today was somewhat or very similar, how was it similar?
(write in response)