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Concealing Stigmatized Sexual Orientation, Accepting Versus Non-Accepting Attitudes, And Ego Depletion

Nicole Gigi Giordano

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CONCEALING STIGMATIZED SEXUAL ORIENTATION, ACCEPTING VERSUS
NON-ACCEPTING ATTITUDES, AND EGO DEPLETION

by

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Submitted to the Graduate Faculty

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for the degree of

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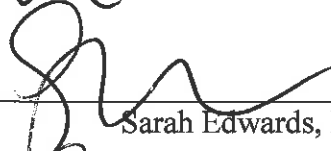
This dissertation, submitted by Nicole G. Giordano in partial fulfillment of the requirements for the Degree of Doctor of Philosophy from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.



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Nicole GiGi Giordano
July 17, 2016

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ABSTRACT

The current study was designed with the aim of increasing the understanding of how concealing or disclosing a stigmatized sexual identity to a perceived accepting/non-accepting person affects ego depletion. Ego Depletion, (Baumeister, 1998) refers to the idea that certain tasks exhaust a limited pool of cognitive resources. Previous literature has explored how concealing a stigmatized identity is ego depleting; however, an examination of the relationship between ego depletion and the concealment of the specific identity as a sexual minority has not yet been explored. LGBQ individuals are often faced with the challenge of navigating social situations to determine if they are comfortable disclosing their sexual orientation. The present study sought to address gaps in the literature on LGBQ coming out (concealing and disclosing sexual orientation), and more specifically, using an experimental design, this study explored how the exposure to accepting or non-accepting attitudes affected psychological functioning (ego depletion) and anxiety. Participants (N = 144) completed an online survey during which they were presented with a scenario in which a fictional partner had an accepting versus non-accepting attitude. LGBQ participants chose to conceal or disclose their sexual identity, and then completed a measure of ego depletion. Statistical analysis showed a statistically significant interaction between the Acceptance (positive-accepting attitudes versus negative-non-accepting attitudes) and Conceal/Disclose Group (Choice Disclose versus Choice Conceal versus Instructed Concealing). The results of this study have

significant implications for the LGBTQ community as a whole, and the profound clinical implications as well as potential areas of future research are discussed.

CHAPTER I

INTRODUCTION

Mainstream American society has historically treated heterosexual sexual orientation as the norm, and those who identify as heterosexual are afforded an abundance of privileges. Within Western societies, individuals who identify as lesbian, gay, bisexual, transgender, and/or queer/questioning (LGBTQ) have historically experienced intense oppression (Herek, 2000). Due to this institutionalized and ingrained societal value, individuals who identify as non-heterosexual are more at risk of experiencing stigma. This stigmatization leads to oppression by the dominant society on both institutional and personal domains. While some individuals may argue that the rights of LGBTQ individuals are improving, a great deal of people still exhibit homophobic attitudes, and many states in the U. S. continue to uphold anti LGBTQ laws (Herek, 2002; Katz 2007). There are numerous examples of LGBTQ discrimination throughout society, such anti-LGBTQ legislation, lax protocols in schools protecting LGBTQ youth, and lack of anti-discrimination protection across 30 states (Lambda Legal; GLSEN 2009; ACLU n.d.). These biases impact members of the LGBTQ community and their experiences in society at both institutional and personal levels, and can have long-term effects on LGBTQ individuals' physical and psychological well-being. Furthermore, such anti-LGBTQ messages may influence an individual's decision to either come out or conceal one's sexual identity.

In the present study, the experience of concealing LGBQ identity when exposed to messages that are anti-LGBQ was compared to LGBQ identity concealment in a more favorable situation. LGBQ individuals face these decisions daily. Examples include reporting bullying based on sexual orientation, outing oneself within a religious context, or disclosing one's sexual orientation in regards to a civil rights issue (e.g., housing or employment). Considering the potential impact that "coming out" can have on individuals in personal and structural contexts, it is an essential next step in research to understand more fully the psychological experience of concealing sexual orientation.

Another important term integral to understanding the experiences of the LGBTQ community is sexual stigma. Sexual stigma is stigma towards any identity, behavior, community, or relationship that does not support the dominant heterosexual norm (Herek 1998). Sexual stigma limits an LGBTQ person's freedom or choices in society. Sexual stigma and sexual prejudice take on many forms, and are reflected upon both externally and internally. Some examples of exhibiting sexual stigma or prejudice include: appearing uncomfortable around LGBTQ individuals or avoiding them altogether, experiencing anger or disgust when thinking about LGBTQ individuals, or the restriction of rights and verbal/physical harassment (Herek, Gillis, & Cogan, 2015). In addition, the backlash from self-identified religious rights groups around rights that are acquired by LGBTQ individuals (e.g., same-sex marriage) may contribute to feelings of discrimination and oppression. Sexual discrimination is also manifested in the heterosexist model that our society has assumed. The heterosexist model is defined as the support of institutions that maintain heterosexual privilege and deny equality and civil rights to members of the LGBTQ community (Herek, 2007). These instances of

heterosexual privilege perpetuate oppression and discrimination towards LGBTQ individuals.

Heterosexism refers to the bias that portrays that individuals who identify as heterosexual are the norm of society and are superior to those who do not (Herek, 1995). Heterosexism devalues any non-heterosexual identity. This is evident by the many messages expressed both implicitly and explicitly through media, laws, advertising, and other public messages. Heterosexism is apparent in the institutionalized structures of society that favor and privilege heterosexual identity. Heterosexism supports the discrimination of sexual minorities by limiting civil rights as well as instigating negative treatment within the systems of society, such as economic, legal, medical, and occupational. This heterosexist model of society increases the benefits experienced by heterosexual individuals, while supporting the discrimination and lower status of LGBTQ individuals.

Individuals who identify as LGBTQ are considered sexual minorities, and face severe stigma related to these identities. Major dominant U.S. society has many heteronormative assumptions (Herek, Gillis, & Cogan, 2015). Heteronormativity refers to beliefs and expectations that value heterosexuality as the norm for society, such as the expectation that a romantically involved couple on television or in mainstream movies or music will be heterosexual (Katz, 2007; Herek, 2002). Heteronormativity is also demonstrated by institutionalized heterosexism, which occurs when social policies and institutions such as government, education, laws, and health care promote a higher value for heterosexuality and grant privilege to those who are heterosexual (Herek, 1990). Heterosexual privileges are unearned rights and benefits granted to individuals based on

having a heterosexual sexual orientation, and these rights and benefits are often denied to individuals who identify as a sexual minority (Carbado, 2000). Heterosexual privileges also contribute to stigmatization of LGBTQ identity.

Absence of heterosexual privilege is just one difficulty experienced by individuals who identify as a sexual minority. Herek (2007) reported that being a sexual minority exposes individuals to sexual stigma. Instances of sexual stigma can include discrimination and violence towards individuals who are not heterosexual. Typically, sexual stigma is targeted towards individuals who identify as Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, or any other non-heterosexual identity (Herek, Gillis, & Cogan, 2015).

Stigma operates on the institutional and the societal level. Institutionalized stigma includes policies of private and governmental institutions that limit the rights of targeted individuals, both intentionally and unintentionally (Herek, 2000; Herek 2009). In terms of legal statutes, the rights of LGBTQ individuals have improved throughout the years. However, the historical fight for civil rights continues to impact many individuals who identify as LGTBQ. For example, even with the 2015 United States Supreme Court same sex marriage ruling (*Obergefell v. Hodges*), countless senators and congressmen outwardly criticized the right to marriage. Given the historical significance of lifting the ban against two men or two women marrying, the process was accompanied by much controversy. There was a series of briefs that had been presented from several states in support of same-sex marriage, and the ban on same-sex marriage was overturned by a narrow vote of 5-4 by Supreme Court justices. There were explicit objections released by the four Supreme Court justices who voted against it. For example, Supreme Court

Justice Anthony Roberts stated, “As a result, the Court invalidates the marriage laws of more than half the States and orders the transformation of a social institution that has formed the basis of human society for millennia...” (New York Times, June 26, 2015). These comments emphasize the dissatisfaction that some have expressed over LGBTQ persons obtaining this right. Another example of oppression and inequality is the long legal history pertaining to sexual orientation and blood donation. A blood ban had been placed on men who have sex with men due to the HIV/AIDS epidemic of late 1980s/early 1990s. In 2014, the Food and Drug Administration (FDA) amended its prohibition against gay and bisexual men’s blood donation, reducing the previous lifetime ban to one year from abstaining from sex (New York Times, December 24, 2014). Abstaining from sex for a year has not been prescribed to donors of any other sexual identity group, highlighting the discrimination and shaming of men who have sex with men.

LGBTQ individuals are faced with messages from society that claim their sexual identity challenges heterosexuality. Simultaneously, LGBTQ individuals receive the message that heterosexuality is both “normal” and held in higher esteem. This can also be seen through the widespread support of Kim Davis, a county clerk who refused to issue Same-Sex marriage licenses (CNN.COM, 9/14/15). Many people, including U.S. government officials, praised and rewarded her illegal actions with little regard to the impact it had on the people whose fundamental rights she refused to honor.

Homophobia, a term coined in the 1970s, speaks about a fear that individuals in our society hold in regards to other individuals who identify as LGBTQ (Herek, Gillis, & Cogan, 2015; Herek, 2007). An example of the historical presence of homophobia can also be found in the mental health field. Historically, individuals who identified as

LGBTQ were considered to be experiencing psychopathology or an abnormal condition that could be treated. The American Psychiatric Association did not retract this diagnosis until 1973, when they acknowledged that same-sex attraction is not a psychopathology (Herek, 2007). To some extent, it might be hypothesized that this relatively recent revelation has contributed to the death of psychological research involving the LGBTQ community.

There continue to be many limitations placed on LGBTQ individuals, and the presence of homophobia still exists in many forms. In many states, individuals can be refused housing because of their sexual orientation. In a number of states, LGBTQ individuals do not have access to competent medical providers who are trained in issues of the community (GLMA Top Ten Issues to Discuss with your Health Care Provider), and too often, individuals who are verbally and physically harassed for their sexual identity find their cases are not being considered as “hate crimes.”

Another example in which homophobia has impacted the rights of the LGBTQ community through law can be found in military policy. For instance, the U. S. military’s “Don’t Ask Don’t Tell” policy instituted in the 1990s was only repealed in the spring of 2011. Prior to the recent repeal, the military had the authority to dismiss LGBTQ individuals who were open about their orientation. Notably, the repeal of this law does not cover transgender people.

Beyond the aforementioned military example, LGBTQ individuals do not have workplace protection against discrimination nationwide. There are many states where an individual can be fired on the basis of their sexual or gender identity only. A recent study showed that 52 percent of the LGBTQ population live in states that do not prohibit

employment discrimination based on sexual orientation or gender identity (Movement Advancement Project, 2014). Although same-sex marriage is now federally legal, many individuals can “get married on Saturday and fired on Monday” due to several state’s lack of anti-discrimination laws. Such gender and sexual orientation discrimination is possible in states such as North Dakota, Tennessee, Wyoming, and over 20 additional states. (Lambda Legal, n.d.).

In addition to the protection against discrimination, the protection of LGBTQ minorities from harassment remains limited. Many U.S. states, such as North Dakota, do not have laws that address hate crimes against individuals regarding sexual orientation or gender identity. According to the Gay, Lesbian and Straight Education Network's 2009 National School Climate Survey (2009), about nine out of ten LGBTQ students experience harassment in school, yet there are limited policies in place to protect these students.

Members of the LGBTQ community often internalize the external oppression, discrimination, and heteronormative beliefs that they experience. Internalized homophobia (also referred to as internalized heterosexism), refers to a self-disgust or lack of self-acceptance due to identifying as LGBTQ. For some individuals, experiencing internalized homophobia may inhibit acknowledging same-gender attraction or claiming an LGBQ identity (Szymanski & Chung, 2001; Szymanski, Kashubeck-West, & Meyer, 2008). Internalized homophobia has been shown to correlate with low self-esteem, depression, anxiety, and substance abuse. For example, individuals who identify as gay may see themselves as inferior or have difficulty with failing to meet socially acceptable norms (Herek, Gillis, & Cogan, 2015; Ross, 1996.) Ross (1996) highlighted how

disclosing sexual orientation can be distressing, specifically in regards to how the individual may be perceived by others (i.e. fulfilling stereotypes vs. not), and how being perceived as LGBTQ (even if one does not identify as such) can lead to increased experiences of discrimination and being targets of violence (Szymanski & Chung, 2001; Szymanski et al., 2008).

Considering the risks that individuals who identify as LGBTQ are exposed to, many LGBTQ individuals are placed in an environment where disclosing their sexual orientation, i.e. “coming out,” may put them at risk for discrimination. LGBTQ individuals face a decision to either disclose or conceal their sexual orientation. It is important to note that an individual is more likely to disclose sexual orientation when the individual perceives his or her environment as supportive (Legate, Ryan, & Weinstein 2012). Still, there are a number of reasons individuals may or may not choose to disclose, and there is empirical evidence stating that disclosing sexual orientation is positively correlated with psychological and physical health (Jordan & Deluty, 1998; Ragins, Singh, & Cornwell, 2007). Therefore, it is important to understand the many different factors affecting an individual’s decision to come out.

Previous research has indicated that “coming out” may put individuals at an increased risk for cognitive, physical and psychological distress (Hatzenbuehler, 2009); however, concealing one’s sexual orientation has been strongly correlated with negative psychological and physical well-being. The process of coming out has been described as a cause of stress due to the difficult decision regarding whether or not to disclose or conceal one’s sexual identity (Meyer, 2003). The risks associated with disclosure and the negative effects associated with concealment can leave LGBTQ individuals in a bind

around their specific choice. LGBTQ individuals have to exert many resources, as explained below, to navigate their environment and make choices about coming out. Many individuals may experience both negative and positive emotions as a result of coming out that may evolve over time.

Research indicated that experiencing an accepting and supportive community when coming out is related to positive well-being and resilience (Hammack, Thompson, & Piecki, 2009; Legate, Ryan, & Weinstein 2012). Disclosing sexual orientation has been correlated with experiences of less anxiety, more positive outlooks, and greater self-esteem (Jordan & Deluty, 1998). The negative aspects of coming out include an increased risk of discrimination, and the impact that societal norms may have on one's psychological well-being. Avoiding the process of coming out has also been linked to increased risk of anxiety, suicide, substance use, and risky sexual behaviors, and other negative impacts on self-esteem, psychological, and physical well-being (Ford 2003; Jordan & Deluty, 1998; Thompson & Johnston, 2003).

Coming out requires the use of cognitive resources (Meyers, 2003). A major research question that emerges is how concealing or disclosing sexual orientation may impact these cognitive resources associated with performance on cognitive tasks and experiences of anxiety. Everyone has cognitive resources that regulate cognitive, physical, and psychological functions. These resources can be used and depleted, which contributes to psychological consequences (Baumeister, 1998). In social psychology literature, this concept is referred to as ego depletion. Ego depletion refers to the idea that certain mechanisms pull on a limited pool of psychological resources. Experiencing ego depletion may impact the ability to exert self-control, emotional regulation, attention, and

other cognitive and psychological tasks related to well-being. Certain experiences that may be ego depleting include withholding emotions, performing cognitive tasks, and experiencing stereotype threat (Muraveen & Baumeister, 2004). The present study aims to test whether concealing stigmatized sexual orientation, specifically in the context of receiving accepting or non-accepting messages about diverse sexual identity, is ego depleting.

Before further delving into the previous research and the current study, it is important to become familiarized with the important terms commonly used when describing sexual orientations and LGBTQ issues. Some broad terms that help describe the LGBTQ community include sexual orientation, sexual identity, and sexual minority. Sexual orientation refers to an individual's feelings of sexual, physical, emotional, and intellectual attraction to men, women, or individuals of other genders (Herek, 2000). Sexual identity refers to self-identification and realization of one's own sexual orientation (Diamond, 1998; 2003). Sexual minority is a term that is sometimes used to describe individuals who identify as gay, lesbian, bisexual, or anything other than heterosexual, which is considered the dominant majority in modern day Western society (Herek, 2007).

There are specific terms identifying categories of sexual orientation. The term lesbian refers to a woman who has predominantly or exclusively same-sex emotional and physical attractions (Diamond, 1998). The term gay refers to a man who has predominantly or exclusively same-sex emotional and physical attractions. Sometimes gay is used as an umbrella term for the LGBTQ community, but for the purposes of this study, gay will refer only to men. The term bisexual refers to an individual who has both same-sex and other-sex emotional and physical attractions. This term has been perceived

by some to be representative of expectations that there are only two genders: male and female. However, research in the fields of biology, psychology, constructivism, and queer theory recognize that there are more than two genders. Many multisexuality labels (e.g., queer, pansexual, omnisexual, polysexual, and others) have evolved to be more representative and inclusive of individuals of other gender identities. The term questioning refers to individuals who may be starting to become aware that they are experiencing non-heterosexual attractions and begin thinking about or exploring this aspect of themselves (Marinucci, 2010). Both individuals who identify as queer and questioning have been underrepresented in previous research studies.

The term queer has a more mutable meaning within the LGBTQ community. Individuals who have different attractions to individuals of a variety of gender identities and biological sexes may use the term queer. Additionally, this term has evolved as an umbrella term for the LGBTQ community by some members of the community. It is considered by some to be more inclusive of all members across the sexual and gender diversity spectrum. There is also a belief within the community that the use of the word queer by LGBTQ individuals is a form of reclaiming power from an oppressive history when the term was used as a derogatory slur towards LGBTQ individuals. (Diamond, 1998; 2003).

There are also specific terms related to gender identification. The term transgender refers to individuals who identify and express their gender in a way that is different from the gender they were assigned at birth. Gender identity development and sexual orientation are separate aspects of identity that do not necessarily influence each

other (Fassinger & Arseneau, 2007). Transgender individuals may face aspects of concealment that are specific to gender identity and independent of sexual orientation.

The transgender and gender fluid community is currently considered a part of sexual diversity, and previous research has grouped sexual minorities and gender minorities together. However, combining gender identity together with sexual identity works to minimize the unique facets that sexual orientation minorities and gender minorities deal with. Ignoring these differences would both minimize their experience and confound the research design of the current study. For example, many transgender individuals may choose not to disclose their gender history. Considering the important and historically overlooked differences in the gender minority and sexual orientation minority experiences, it was determined that exploring the concealing and coming out process around gender identity is beyond the scope of the current study. In addition, the main purpose of this study is to explore the process and effects of concealing and disclosing sexual orientation. Therefore, the primary reason transgender participants were not included in this study was to keep the focus on sexual orientation disclosure while avoiding the confounding and complex experiences of individuals who identify as transgender. While it is a notable limitation that this population is not addressed in the current study, it would be unethical to assume that the process of identity development and disclosing gender history is parallel to that of sexual orientation. This study will limit its focus to disclosure and concealment of sexual orientation, specifically focusing on the stigma that is targeted towards sexual minorities. Following, LGBTQ will be predominately used to describe the background literature and methods of the current study.

Statement of Purpose

LGBQ individuals are faced with the decision of disclosing their sexual orientation and to whom. Many individuals may or may not choose to disclose for many various reasons. There is empirical evidence that suggests disclosing sexual orientation is positively correlated with psychological and physical health (Ragins, Singh, & Cornwell, 2007; Jordan & Deluty, 1998). Previous research has also highlighted that individuals are more likely to disclose sexual orientation when the individual perceives the environment or receiver of the disclosure as supportive (Legate, Ryan, & Weinstein 2012). Ego depletion may be an important factor in this process due to the intensity and significance of the thoughts and feelings that LGBQ individuals face during the disclosure or concealment process. The current study was designed to increase our understanding of the effects (in terms of ego depletion) of concealing versus disclosing stigmatized sexual identity to a person perceived as accepting versus non-accepting.

CHAPTER II

REVIEW OF LITERATURE

As stated in Chapter I, this study examines how concealing sexual orientation impacts LGBTQ individuals' well-being. There are many factors to consider when conceptualizing this concealment process and the outcome variables. LGBTQ individuals frequently face choices of navigating concealment versus disclosure of sexual orientation (coming out). Previous research has presented mixed findings regarding how coming out may put individuals at increased risk for cognitive, physical, and psychological distress (Hatzenbuehler, 2009). Concealing sexual orientation has been highly correlated with negative psychological and physical well-being.

Given the various experiences of discrimination and oppression that many LGBTQ people still experience, understanding the effect that concealing and disclosing has on an LGBTQ person is essential (Balsam & Mohr, 2007; Cochran, Sullivan, & Mays, 2003). While previous research (explored below) thoroughly documents how different factors contribute to LGBTQ mental health, understandings of the cognitive processes that contribute to this are lacking.

The current study will address how concealing versus disclosing sexual orientation impacts ego depletion, and specifically, how concealing/disclosing within a perceived positive or negative context may affect ego depletion and anxiety. An

extensive review of literature relevant to identity development, concealing stigmatized identity, coming out, ego depletion, and stigma follows.

Sexual Orientation Identity Models and Coming Out

Coming out is the process of discovering one's sexual orientation and sharing it with others. As noted in the discussion of stigmatization of minority sexual identity in Chapter 1, the decision to disclose sexual identity can have many implications (Herek, Gillis, & Cogan, 2015; Katz, 2007; Syzmanski, Kashubeck-West, & Meyer, 2008). Prior to 1973, minority sexual identity was pathologized by the medical and psychological fields; however, with the retraction of homosexuality as a mental disorder from the Diagnostic and Statistical Manual of Mental Disorders (DSM), a greater understanding of identity development was needed. Several models have been developed to understand the formation of sexual identity. For the purpose of this study, the Cass Identity Model (1984) and the D'Augelli Identity Model (1994) will be explored in-depth.

Cass (1984) explored the formation of homosexual identity. The Cass Identity Model is a six-stage model that addresses not only the salience of defining personal gay and lesbian identity to the individual coming out, but also the dimension of disclosing sexual orientation and how this relates to identity. These stages have specific characteristics that have been described and empirically supported through longitudinal survey studies (Cass, 1984). However, it is important to keep in mind a key limitation of this model, as it only addresses lesbian and gay individuals, which excludes the development of bisexual, transgender, and queer individuals.

The first stage (Identity Confusion) is associated with feelings of being different from others. During this time, an individual may become aware of same-sex attractions.

Some individuals may even engage in same-sex contact, yet it is very rare that an individual will disclose this realization to others. Stage Two (Identity Comparison) is conceptualized as being a rationalization stage. Individuals engaging in identity comparison may be questioning if they are homosexual or bisexual, considering if these might simply be temporary feelings, or questioning if their same-sex feelings and attractions are targeted towards one specific person. There may also be an overall internal sense that the individual does not belong.

When an individual begins to believe that they are lesbian or gay, they enter the third stage (Identity Tolerance). During this stage, individuals may begin to reach out to other members of the LGBTQ community to reduce the feelings of isolation that they may possess. Stage Four (Identity Acceptance) is often characterized by having more positive views of LGBTQ individuals and becoming more accepting of the self as a lesbian or gay individual. Individuals may start disclosing their identity to some significant people, but may also avoid people who would potentially increase feelings of discomfort. Having the choice around disclosing and with whom you disclose to may be a potential coping skill used during identity formation. Given the stigmatization of gay and/or lesbian identity, perceived threats of rejection may cause the disclosure to be stressful for the individual. Nevertheless, by choosing to disclose, the individual may actually be able to minimize the feelings of distress that occur. Stage Five (Identity Pride) is the stage where an individual begins to become more aware of the oppression and discrimination that the individual's sexual orientation elicits in society. The individual begins to disclose their orientation to more people and continues to educate themselves on lesbian and gay culture and issues. Significant portions of individuals are motivated by

anger and pride in this stage, and begin getting involved with activism. Stage Six (Identity Synthesis) is the stage where the individual is open to disclosing their sexual orientation to anyone. There is less anger directed towards heterosexual individuals, and an understanding that there are more heterosexual individuals who are accepting of their identity. There is still a present sense of anger at the way LGBTQ individuals are treated, but it is experienced in a less intense form (Cass, 1984).

The Cass model also carries several limitations. The model is thought to be very linear, and therefore may not be applicable to many LGBTQ individuals. Sexual identity development may be more complex than the linear model suggests. In addition, bisexual, other multisexual identities, and transgender individuals were not included in the original validation of the model; therefore, this model is not applicable to understanding identity development for these individuals. Finally, the model does not easily account for cultural differences, including the cultural differences across racial/ethnic minority individuals (Degges, White, Rice, & Myers, 2000).

D'Augelli (1994) proposed a model in which identity development is viewed as being highly influenced by social and environmental interactions, such as geographic location, family culture, social supports, and biological predispositions. In addition, he described identity formation as a lifelong process that LGB individuals experience and self-reflect on during multiple times throughout their development. For example, an individual may acknowledge same sex-attractions as an adolescent and again re-evaluate varying sexual attractions in adulthood. The first process involves exiting heterosexual identity. During this part of the process, the individual notices that they have physical, emotional, and romantic attractions to persons who identify as the same gender as the

individual. In addition, the individual recognizes that their feelings differ from what is acceptable in dominant culture. The second process in this model is the development of a personal LGB identity status. The individual begins to find stability in their sexual orientation, challenges any internalized heterosexism, and starts thinking about what they believe it means to be LGB. The next process is the development of an LGB social identity by disclosing their LGB identity to those who are perceptive and accepting. The fourth process is becoming an LGB offspring. This involves disclosing sexual orientation to parents/primary caregivers/other family members in hopes of gaining their support and acceptance. LGB intimacy status and beginning an intimate relationship is the fifth process. The sixth process is entering a community and beginning to consider engaging in political activism in regard to LGBTQ issues. Unlike Cass' linear model, D'Augelli's states that these processes can occur in any order, simultaneously, or multiple times throughout an individual's life. The order is dependent on the individual's own unique experiences, with regards to their age, race, gender, socioeconomic status, and education level.

Both of these models suggest that throughout identity formation, the idea of when and to whom to disclose sexual orientation is an essential domain. Such models imply that coming out should ideally be a process lending itself to self-development and community involvement. When placed in the context of particular individuals, such models can overlook important reasons for disclosure or concealment. Various cultural identities or perceived family attitudes towards LGBTQ identity may impact one's concealment/disclosure, such as individuals of color or individuals from a strong religious background with anti-LGBTQ sentiments (Adams & Philips, 2009; McEwen,

2003). Considering these models, it can be hypothesized that concealment of sexual orientation can impact identity due to the potential cognitive and psychological demands that may result from having to monitor and deny certain aspects of oneself.

People increasingly believe that coming out can provide positive outcomes. There are a growing number of public messages and campaigns targeting LGBTQ individuals (specifically LGBTQ youth) around the positive outcomes of coming out. For example, since 2010 the “It Gets Better” Project has focused on health messaging around the eventual positive outcomes, while acknowledging that the process may initially be complicated and difficult (Itgetsbetter.org). Previously literature on outcomes to coming out has been mixed. Vaughan and Waehler (2010) attempted to close this gap by developing a measure that would assess the positive growth aspects that can eventually be achieved after overcoming the initial period of stress when coming out. According to these authors, the relationship between outness (the degree to which people are out in their relationships and lives) and various expressions of mental health and well-being has been found in previous studies. For example, Jordan and Deluty (2009) reported that coming out has been linked with higher psychological well-being and greater quality of life, reports of less stress, higher self-esteem, and increased positive affect.

Vaughn and Waheler (2010) conducted a preliminary study of 418 lesbian and gay identified individuals in order to develop and validate the Coming Out Growth Scale. This scale highlights the positive growth aspects of coming out across five domains: honesty/authenticity, personal/social identity, mental health/resilience, social/relational, and advocacy/generativity. The psychometric soundness of this measure has been demonstrated via exploratory factor analysis (including eigenvalues) and significant

correlations between the Coming Out Growth Scales and existing measures (i.e., convergent and divergent validity). These findings support the claim that positive growth following coming out in some domains is an occurrence for many LGBTQ people. Positive growth associated with coming out has also been linked to increased psychological well-being.

Considering the positive aspects of coming out, there is growing evidence that concealing and choosing not to disclose sexual orientation may also have an impact on well-being (Meyer, 2003). These experiences of well-being may be linked to the internal resources that regulate emotional experiences and energy used towards certain activity. When such resources are exhausted, individuals may experience impairments in intellectual, interpersonal, and psychological functioning following experiences such as coming out, due to the stress of concealing versus disclosing.

Minority Stress and Meyer's Minority Stress Model

Meyer (2003) proposed that minority stress goes beyond general universal stress of daily living because of the unique kind of stressors that minority individuals are exposed to. According to Meyer's theory, experiences of discrimination and internalization of discrimination, whether overt or covert, add an extra layer of stress to individuals of minority identity status. Individuals who identify as LGBTQ will experience unique stress due to facets of discrimination, internalized heterosexism, and identity formation. Meyer highlights how this model takes prejudice, stress, and coping into consideration. Aspects of the minority stress process include experiencing discrimination, fear of rejection, concealing aspects of one's self, internalized heterosexism, and negative

coping skills. Though these experiences may have negative impacts on health and well-being, several aspects of coming out may reduce stress.

Meyer (2003) suggests that outness is a form of stress due to the psychological processes that determine disclosing versus concealing. The impact of coming out on identity development and well-being can be significant. On the other hand, avoidance of coming out has been correlated with higher anxiety, depression, suicidality, substance abuse, and risky sexual behaviors (Ford, 2003; Jordan & Deluty 2009; Thompson & Johnston, 2003; Waldner & Magruder, 1999). Therefore, avoiding coming out may have many negative effects on an individual and be a large source of stress. Perceived stressors, especially the perceived responses of social support systems, may influence the disclosure process.

Outness and Social Support

In a study by Legate, Ryan, and Weinstein (2012), the researchers explored the different contexts in which self-identified lesbian, gay, bisexual individuals ($N=161$) disclosed sexual orientation. The individuals reported on their experience of disclosing sexual orientation to friends, family, co-workers, religious leaders, and school and community members, their well-being when disclosing, and their situational depression, anger, and self-esteem. This study explored state-specific well-being, and how environments supportive of autonomy versus environments unsupportive of autonomy impacted well-being. This study found that disclosing sexual orientation in supportive environments positively impacted wellness. The relationship between outness and well-being was mediated by perceived support of diverse identity. Being out was linked to

well-being; however, perceived support of diverse sexual identity seems to mediate this relationship.

Previous literature stresses the importance of social support for LGB individuals (Eisenberg & Resnick, 2006; Jordan & Deluty, 1998; Meyer, 2003). Supportive family, friends, co-workers, and teachers serve as a protective factor against negative coming out experiences. Having these positive relationships seemed to reduce the negative consequences associated with ostracism and victimization among LGBTQ individuals. Furthermore, there was a negative correlation between positive supportive relationships and experiences of substance abuse, risky sexual behavior, anxiety, and suicidality. Having support, whether from heterosexual or LGBTQ individuals, has been shown to be beneficial (Jordan & Deluty, 1998). All three of the models discussed above (Meyer, 2003; Cass, 1984, and D'Augelli, 1994) emphasize the importance of having LGBTQ community support, and how becoming a member of an LGBTQ community can facilitate stress reduction during the process of identity formation. This is due to the encouragement to utilize the community as support and a potential coping skill when faced with issues of stress. Therefore, coming out to individuals who are supportive versus unsupportive of sexual identity may have beneficial psychological effects. In the current study, this notion was explored by testing how perceived attitude of others in response to the disclosure of sexual orientation may impact ego depletion and reports of well-being.

Concealable Stigmatized Identity and Sexual Orientation

A concealable stigmatized identity is defined as an identity that can be hidden from others and is perceived as socially unacceptable (Chaudoir & Quinn, 2010;

Chaudoir & Fisher 2010). Examples of stigmatized identities that can be hidden include: mental illness, HIV/AIDS status, learning disabilities, incarceration history, and sexual orientation or gender identity. These identities put individuals at risk of experiencing oppression and discrimination. Not only are they at risk for discrimination due to the dominant society's norms, but also because there are many stereotypes that are associated with the identity. For example, gay men are often stereotyped as engaging in risky sexual behaviors. This may then be related to reduced resources focusing on engaging in safe sex practices. Previously, funding had been targeted at HIV prevention specifically among men who have sex with men, however, funding has also decreased over time potentially due to the rise of HIV rates in other populations (e.g. intravenous drug users, women) or the stigma around promiscuity among men who have sex with men. (Parchankis, 2007; Quinn & Chaudoir, 2009).

It is plausible that an individual concealing a stigmatized identity might be able to avoid experiencing some stressors related to the stigmatized identity being known. However, past literature suggests the contrary. Pachankis (2007) suggested that when individuals with a stigmatized concealable identity enter into a new situation or meet a new person, they are challenged to choose to either disclose or conceal this identity. According to Quinn and Chaudoir (2009), there are four central factors that may impact how the concealed stigma affects the individual. These include: (a) what these individuals anticipate others' reactions to this stigma will be (Anticipated stigma); (b) how central this stigmatized identity is to their sense of self (Centrality); (c) how salient is the identity to the individual (Salience); and (d) the level that one's culture devalues the stigmatized identity (Cultural Stigma). Using these factors, these researchers created a framework for

conceptualizing concealable stigmatized identity and how it impacts psychological distress.

Quinn and Chaudoir's (2009) two-part study included a sample with a variety of hidden identities, including 32 participants who identified as LGBTQ. Those who concealed their identity reported higher distress than those who did not. The factors of anticipated stigma, centrality, salience, and cultural stigma interacted in ways that highlighted different levels of distress. For example, those who anticipated discrimination based on their stigmatized identity reported increased rates of distress when this identity was central and salient. On the other hand, the authors were not able to explore how this model impacted each specific stigmatized group due to small subsample sizes, including LGBTQ participants. Further research is needed to address how the process of concealing sexual orientation can be better understood for individuals who identify as LGBTQ.

Concealing Sexual Orientation and Mental/Physical Risks

In the same study described above, Quinn and Chaudoir (2009) argue that stigma is linked to feelings of psychological distress or lack of psychological well-being. These researchers explored how stigma links to both psychological distress and physical health. Their study included the concepts of anticipated stigma, cultural stigma, centrality and salience discussed earlier. In addition, the researchers observed that anticipated and cultural stigma have a direct negative effect on psychological distress and physical health, while centrality and salience may only be related to predisposition for psychological distress. Their study supports earlier findings that HIV-positive gay men who have concealed their sexual orientation experience a higher incidence of cancer and

other infectious diseases; such concealment is also correlated with accelerated progression of HIV (Cole 1996a; Cole 1996b).

The person that individuals may conceal their identity from plays a large role in this process as well. Related to Quinn and Chadoir's (2009) constructs of anticipated stigma and cultural stigma, perceived reactions have an impact on well-being. Beals et al. (2009) followed a group of gay and lesbian participants for two weeks by having them journal specific information about whether or not they chose to disclose. Participants reported greater well-being on days they chose to disclose rather than conceal. In addition, Rodriguez (2006) found that individuals who imagined writing a letter sharing a secret to an accepting person rather than a non-accepting person reported fewer illnesses in an 8-week follow-up survey.

Minority stress may impact an individual's choice to conceal identity. Hatzenbuehler (2009) discussed how minority stress might impact the well-being of LGBT individuals. As described above, The Minority Stress Model (Meyer, 2003) describes the impact that specific stressors related to minority status have on the development of psychopathology. Through the interaction of these stressors and overall discrimination, there is an increased risk for substance use, depression, anxiety, and other mental disorders (Lehavot & Simoni, 2011; McCabe, Bostwick, Hughes, West, & Boyd, 2010; Hatzenbuehler, 2009). The interaction between specific group stressors and basic psychological processes contributes to the development of these psychopathologies by draining cognitive and emotional resources.

In addition, Hazenbuehler suggests a new theoretical framework to conceptualize this process. Specifically, Hazebuehler suggests that managing stigma can contribute to a

reduction in self-control and emotional regulation. Both self-control and emotional regulation have been connected to an internal resource or psychological mechanism, and when this resource is extensively tapped and nearly exhausted, it has been referred to as ego depletion (Baumeister, 1998; Baumeister 2002).

Ego Depletion

Several aspects of the human condition require active and conscious thinking. These aspects are referred to as volition. They include monitoring emotional responses, resisting temptations, making choices, and restricting behavior towards or around tempting objects. The theory of ego depletion posits that people are limited in their internal resources when engaging in acts of volition. When this limit is reached, individuals have poorer executive functioning (Baumeister, 1998; Baumeister, 2002). Ego depletion has been linked with behavior problems and reduced impulse control (Baumeister, 1998). The broad scope of such phenomena includes risky sexual behavior, substance abuse, emotional and relationship difficulty in school, and poor performance on many different kinds of tasks (Baumeister, 1998; Baumeister, 2002).

Baumeister et al. (1998) explored both the self as a limited resource, and which different experiences may cause ego depletion. During a four-part study, participants completed an ego depleting task utilizing a specific resource and engaged in another task requiring the same resource (Baumeister, 1998). Participants were placed in several scenarios where they were instructed to restrict either their desires for eating or expressing emotions, or other self-regulation tasks. Researchers observed that participants who restricted themselves demonstrated higher ego depletion as measured by lower performance on a problem-solving task.

Muraven and Baumeister (2000) further explored the theoretical question that self-control (as a function of ego depletion) is a limited resource. The authors hypothesized that coping with stress, controlling emotions, and resisting desires may all deplete the function of self-control in the future because it would require use of the same resource that regulates self-control as a whole. In addition, the authors suggest that long-term depletion of this resource contributes to deficits in self-control, which in turn contributes to ongoing struggles with emotional regulation. An empirical question is whether the long-term impact that ego depletion has on self-control and regulation is manifested in measures of overall well-being.

Muraven, Tice, and Baumeister (1998) carried out a four part study examining how resources, such as self-control and self regulation, relate to ego depletion. After engaging in a task utilizing self-control or self-regulation, participants engaged in a task measuring ego through performance on subsequent tasks. The first study asked participants to control their emotional reactions to an upsetting movie. Following the movie, participants were asked to engage in a physical task. Participants who were asked to control their emotions performed poorer on the physical task than they did before viewing the movie.

In the second study, participants were asked to truncate specific thoughts. Participants were divided into three different conditions, and were asked to either think about a white bear as much as they wanted, to not think about a white bear, or were given no specific instructions. Congruent with previous research, it was hypothesized that individuals who had to attempt to stop themselves from thinking certain thoughts would experience ego depletion. Following the thought directives, participants who were

instructed to not allow themselves to think about a white bear gave up more quickly on an unsolvable puzzle (Muraven, Tice, and Baumeister, 1998). These results suggest that monitoring and controlling thoughts depletes a self-control resource (ego depletion) and carries over into subsequent tasks.

Elaborating on Study 2, Study 3 found that, following the suppression of thoughts, it became more difficult for participants to control expressions of amusement and excitement. In the final study, participants were asked to tell stories about times they successfully regulated emotion and times they did not. When participants told stories that depicted unsuccessful emotional regulation, there were also themes around tiredness and other regulatory deficits, such as having difficulty controlling emotions and becoming drunk (Muraven, Tice, and Baumeister, 1998). This study further supports the idea that individuals may have a limited resource that relates to cognitive, psychological, and physical functioning. In addition, when individuals exert some of this resource, perhaps in the form of self-regulation, they are less able to regulate themselves or carry out another task shortly following this exertion.

In general, self-control and self-regulation are assumed to use the resource that ego depletion refers to (Baumeister, 1998; Burkley, Anderson, & Curtis, 2011). Burkley, Anderson, and Curtis (2011) argue that social influences impact individuals' self-control and emotional self-regulation. In this theory-based article, the authors argue that when faced with an argument, individuals will use two strategies to approach their opponent. In the first, they will try to improve the credibility of their own argument. The second, however, which is of particular interest for the current research, suggested that there is another strategy that is aimed at reducing the argument of one's "opponent."

When engaging in the latter strategy, individuals may expose their opponent to a variety of activities and arguments, which are intended to “wear them down.” As a social influence strategy, one may encourage their opponent not to stand up for their beliefs, thereby depleting some of their internal resources around self-control and self-regulation. For example, the Burkley et al. (2011) discuss false confessions that some individuals provide after being exposed to strenuous police investigations. Individuals become “exhausted” and confess to something they may not have participated in. This social influence may also occur when individuals are choosing whether or not to come out. Might concealing stigmatized identity, such as sexual orientation, be another task that requires the use of the resources described above?

Ego Depletion and Concealment

In their four-part study, Critcher and Fergusson (2014) sought to explore both the cost of concealing an identity, and the cognitive effects of concealing identity during conversations. Specifically, they questioned whether monitoring the disclosure of identity and changing language could be considered an ego depleting task, even during a brief interaction with another person. During studies 1-3, participants were instructed to conceal their sexual orientation, and in study 4 they were asked to conceal specific words related to sexual orientation.

For the purpose of Critcher and Ferguson’s study, the researchers only wanted to explore if concealment was a depleting task, and did not want to confound their findings by also exploring the impact of stigma. Therefore, only heterosexual participants were studied to determine if concealment in itself, regardless of identity, was ego depleting. Each part of the study attempted to extend on the previous one. In each study, a different

measure of ego depletion was utilized. A brief overview of each part of the study will be presented.

The goal of Study One was to determine if concealment is an act of ego depletion. Some participants were instructed to conceal their sexual orientation during an interview with a confederate. Following the interview, participants engaged in a 12-minute, 24-block counting task that measured spatial reasoning ability. Participants who were instructed to conceal their sexual orientation were able to identify fewer blocks on the spatial reasoning task compared to those who were not instructed to conceal their sexual orientation. Findings from Study One demonstrated that concealing was ego depleting. After a 10-minute interview, participants who were instructed to conceal their sexual orientation showed poorer performance on a spatial ability measure.

In Study Two, there was an additional condition added. Study One had participants monitor their speech in order to try to stop them from disclosing their sexual orientation (monitor + alteration). In Study Two, participants were given an additional condition wherein they were instructed to monitor their speech while being asked a question that: (a) had nothing to do with sexual orientation, or (b) was about an activity which may suggest sexual orientation or activity (e.g., dating experience). There was also a control condition where no instructions were given. By comparing the monitoring + alteration condition to the monitoring only condition, the researchers were able to determine if altering speech contributes to ego depletion when individuals are already concealing certain information (Critcher & Fergusson, 2014). In addition, Study Two changed the measure of ego depletion. Following the interview, participants were given rude e-mails to respond to. Previous research on ego-depletion has suggested that

following an ego depleting task, individuals experience lower self-control and therefore have difficulty monitoring their reactions to aggression. The findings from Study Two suggest that simply monitoring speech for specific content to conceal had reduced politeness in responses to rude e-mails, and was therefore ego depleting. This study also extends the finding of the previous study to show that concealing not only impairs intellectual functioning and subsequent performance, but also impairs interpersonal functioning and relationships.

Study Three differed from Study Two in two ways. The first is that ego depletion was measured by a physical test of strength following the task, based on previous research stating that ego depletion affects physical strength (Baumesiter, 1998; Muraven & Baumeister, 2000). Second, a condition was added to this study where participants had to change their speech from what they would have answered initially. Participants were asked to add a lie into their response, which they would not have otherwise provided. Findings from Study Three showed that concealment impairs physical strength. In addition, individuals who had to alter their speech and add a lie did not show as much of a decrease in strength and did not show depletion. This finding suggested that monitoring language is the factor that causes depletion, and simply adhering to specific instructions of lying did not produce the same ego depleting effects.

In Study Four, the researchers wanted to test the hypothesis which suggests that concealment would be ego depleting. They considered that sexual orientation might be a nuisance variable, and could cloud the findings around the relationship between concealment and ego depletion. Their argument for this was that stigmatized sexual orientation may carry a different meaning and be tied to individuals' identity differently

than heterosexual identity. In addition, this study built on the previous studies in three ways. First, participants were asked to monitor specific words that did not have any relevance to identity and to exclude them from their conversations. Secondly, the researchers were able to observe the influence of fully combining monitoring and alteration. Thirdly, the researchers utilized a Stroop test as a measure of ego depletion to demonstrate impairment of executive resources. The Stroop test is based on the Stroop Effect. In the test, subjects are presented with the written word of a color; the word is printed either in the same color as the written word or in a different color. Individuals who are experiencing ego depletion usually have a difficult time naming the color of the word and not responding with the word itself (e.g., the word *blue* written in red ink will be more likely said to be red). Before and after the interview, participants were administered a Stroop task. The findings from this part of the study suggested that monitoring is responsible for the ego depleting aspects of concealment, and the effects are evident both when participants had to alter their speech and when they did not. Just altering one part of the study suggested that monitoring is the variable connected to the significant findings that concealing itself, regardless of content, can be ego depleting.

An important aspect of this four-part study was that the researchers strived to strengthen their argument that ego depletion occurs following concealment, and is not the result of anxiety or discomfort. Anxiety was measured to rule out the conclusion that anxiety was a confounding variable. The confederate interviewer also rated participants on how uncomfortable and nervous they seemed and on the fluency of the conversation. At the end of each study, participants also reported how comfortable and at ease they felt throughout the interview and each task. In all parts of this four-part study, those who

reported ego depletion versus those that did not report ego depletion did not differ on self- or confederate-reported discomfort or anxiety. Therefore, there was no evidence supporting that the effects of concealment may have stemmed from anxiety or discomfort. This finding further suggests that the effects of concealment may be a result of ego depletion (Critcher & Fergusson, 2014).

Critcher & Fergusson (2014) also specifically discussed their reasoning for choosing heterosexual participants. The researchers sought to focus on concealment and not confound their study with the effects of stigma by prohibiting participants from using gender identifying pronouns. The researchers highlighted the importance of extending this research to LGBTQ populations. Individuals who are choosing not to disclose aspects of their identity may be more invested in their concealment, and therefore, may have fewer resources to spend on other cognitive tasks or executive functions. Considering this, LGBTQ individuals may be more aware of monitoring than others because they may be more cognizant of the consequences of making an error and disclosing information that may adversely affect their social status. Navigating stigma may be ego depleting, and how concealment and constant self monitoring may impact LGBTQ individuals is still unknown.

Ego Depletion and Stigma

Inzlicht, McKay, and Aronson 2006, explored stigma as an ego-depleting trigger. This study proposed that dealing with being stigmatized requires self-regulation. Researchers hypothesized that when faced with their stigmatized identity or placed in a threatening environment, individuals will have more difficulty regulating emotions. This particular study used Black-American college students of multiple genders studying at

New York University. Findings from Study 1 suggested that there was a correlation between the awareness of a student's stigma and their level of self-control, with more awareness being correlated with less self-control.

In Study 2, Black students who were told they would take an intelligence diagnostic test and in Study 3, female students were told they would take a math test, with math chosen due to the stereotype that women have a lower math ability than men. After being told that they would take a test, students showed diminished self-control in the actual tasks they were assigned, as measured by attention and physical performance. (Black students had to recall words in Study 2 while women were timed on how long they could squeeze a handgrip tool.) This study supports the theory that stigma is ego depleting and can weaken self-control and regulation in areas that may not be related to stigma (Inzlicht et al., 2006).

Inzlicht and Kang (2010) expanded the previous research to explore specifically how stereotype threat and threat to a salient social identity depleted cognitive and physical resources. *Stereotype threat* occurs when individuals suspect that they or their performance/behaviors will be evaluated based on negative stereotypes about their group instead of who they are as an individual (Steele & Aronson, 1995). Inzlicht and Kang demonstrated the impact of stereotype threat on ego depletion by measuring self-control, eating habits, attention and/or physical aggression after exposing participants to stereotype threat in multiple contexts.

In the first study, women were given several math tests to observe how exposure to this stereotype threat may lead to more inhibition (defined as self-consciousness and difficulty relaxing) and expression of aggressive behaviors. In this experiment, women

were given a partner (who was actually a confederate) who then provided them with feedback. Some women received negative feedback (i.e., “this might be the lowest score in the group”) on their performance on the math test to induce stereotype threat, while others received positive feedback (Inzlicht and Kang,2010).

Following the feedback, participants completed measures on self-esteem and current mood. Next, the participants engaged in a “game” with their partner in which they were presented with a stimulus on the screen and then had to click a button. The individual who clicked the button faster won that round, and their partner received a blast of white noise into a pair of headphones each was wearing. The participant could choose the loudness and length of the white noise prior to the round. Women who received negative feedback appeared more aggressive, as shown by their performance in the “game,” by selecting noises that were louder and longer. Research suggests that this expression of aggression following negative feedback is a result of ego depletion.

In the second study, the researchers explored how coping with a math test may potentially cause participants (all women) to partake in unhealthy food at a later time. Researchers asked women to complete a math test, and afterwards, asked them to serve as ice cream taste testers. Researchers hypothesized that women who engaged in “less effective” coping would eat more ice cream. After completing the math test, participants were given feedback that they performed poorly on the test. The feedback was given to induce stereotype threat around the stereotype that women struggle with math. Prior to the experiment, the degree to which women were aware of the stigma around math and gender was measured. In this study, women who were more aware of this stigma ate more grams of ice cream.

In the third study, participants were asked to think of an instance when they experienced discrimination. They were compared to a control group who were only asked to recall a memory. The authors argue that both experiencing stereotype threat and recalling the instance of discrimination play a key role in the depletion of one's cognitive and physical resources. Following the recall of the memory, participants were asked to engage in some risky decision making by choosing a lottery ticket. One group had a larger chance of winning with a lower jackpot (safe choice), while the other had lower odds of winning but a greater monetary pot (risky choice). Participants who had to recall a time when they experienced prejudice were more likely to choose the risky choice lottery ticket. The authors argue that this risky choice is a result of ego depletion, which occurred due to participants' difficulty coping or processing through stereotype threat.

In the fourth study, the researchers sought to support their findings from the previous three studies by making it applicable to more cognitively and neuropsychological-based activities. In this study, participants were first exposed to stereotype threat, and attention and performance on neuro-related tasks were then observed. After exposure to stereotype threat, participants had lower attention as measured by a Stroop color task and had limited cognitive processing as measured by brain scans. Overall, the authors argue that self-control is a limited resource that can be reduced by a variety of experiences and tasks. One of these is exposure to stereotype threat/threat to a salient identity. The results of dealing with these experiences then “spill over” into other areas of life, which can increase unhealthy eating, risky decision-making, aggressive behaviors, and attention problems (Inzlicht & Kang, 2010). Within the LGBTQ community, this relationship between stereotype threat and discrimination may

be in turn related to increased reports of lower well-being as evidenced by increased experiences of depression, anxiety, substance abuse, and self-injurious behaviors (Meyers, 2003). This concept will be further explored in the current study.

In a four-part study by John, Inzlicht, and Schmader (2008), researchers tested whether individuals who are targets of stigma and stereotypes attempt to regulate emotions and therefore deplete cognitive abilities. Three of the four studies used women participants while the fourth study used Latino male and female participants. In these studies, the findings showed that participants who were faced with stereotype threat experienced anxiety and tried to regulate it, and subsequently had lower performance on cognitive and physical tasks. Coping with stereotype threat is thought to utilize the same resources needed to perform a cognitive task, such as an intelligence test. Given the previous research on ego depletion and the impact that stigma has on various populations, it is hypothesized that concealing a stigmatized identity may be in itself an act of volition that will be ego-depleting, even if concealing stigmatized identity is only done for a short period of time.

Pilot Study

A preliminary study was conducted to explore the relationships between concealing/disclosing sexual identity and mental health outcome. The previous study was a quasi-experimental design using an online sample of 240 participants who identify as LGBTQ. The participants' ages ranged from 19-58, with 62% identifying as male, 35.7% as female, and less than 1% as transgender. This pilot study sought to explore how concealing stigmatized sexual orientation may be an ego-depleting task. Participants were

initially asked to fill out demographic information and the Mental Health Inventory (MHI; Veit & Ware 1983).

The MHI is a scale that uses a hierarchical factor model consisting of two factors: psychological distress and well-being. In addition, there are five lower-order factors supporting these constructs. These are anxiety (e.g. restless, fidgety, impatient), depression (e.g., low to very low spirits), emotional ties (e.g., felt loved), general positive affect (happy person), and loss of behavioral emotional control (e.g., felt like crying; Veit & Weir 1983). Physiological distress is said to be defined by scores on the anxiety, depression, and loss of behavioral emotional control subfactors, while well-being is defined by scores on the emotional ties and general positive affect subfactors. Items are assessed in this format: “How often in the past month have you felt _____?” Participants then choose from 1 = all of the time, 2 = most of the time, 3 = a good bit of the time, 4 = some of the time, 5 = a little bit of the time, and 6 = none of the time (Veit & Weir, 1983).

Participants were then told that they would engage in a video chat with a confederate partner (who later they were informed was fictitious) and had the ability to pick statements that this fictitious partner would see. These statements were developed specifically for this study and were of a sexual nature; some included partner gender and others were gender neutral. The choice in these statements was utilized to determine if the participant “came out.” Next, participants completed two ego depletion tasks: Tower of Hanoi and a writing task, which requested participants to write with only certain letters. Following the tasks, the participants retook the MHI for a comparison between well-being before and after the experimental conditions.

Preliminary results indicate no significant difference between measures of mental health well-being pretest or posttest, and no significant difference between groups who chose to come out and not to come out. However, these findings may be consistent with previous research (McCabe, Bostwick, Hughes, West, & Boyd, 2010; Cochran, Sullivan, & Mays, 2003) suggesting that LGBTQ individuals have higher rates of depression, anxiety, and other measures of well-being. Therefore, there may not have been a significant difference because of the possible existence of already elevated rates of responses. The anonymity of the Internet may serve as a buffer for ego depletion, thereby making it more difficult to assess ego depletion in an online study. An interesting finding from these preliminary analyses is that there is a significant relationship between individuals who chose to come out and their level of anxiety pre-experimental task ($r(140) = .45, p < .05$).

There were several limitations to this preliminary study. First, a significant portion of participants were recruited from Amazon Mechanical Turk. There are specific guidelines that can be set to ensure that Amazon Turk workers are performing acceptable “work” because they are compensated, and setting parameters for the acceptance rate of workers previous work would be important. Responses on the writing task suggest that participants may not have been entirely focused while participating. This was evident by participants not following instructions or typing repeated letters. For the current study, stricter recruitment guidelines were established, as described in Chapter III. Finally, the option of disclosing sexual orientation may not have induced discomfort due to the anonymity of the Internet. In the current study, this was addressed by emphasizing the importance and value of the study, which may in turn have increased motivation to

participate fully. This emphasis to participants can be noted in the current study's instructions in the Appendices.

The Present Study

Previous literature on concealable stigma has drawn from a variety of theories to understand the effects that concealing sexual orientation can have on the individual. Much of this literature has explored how concealing identity can have negative effects on mental and physical well-being. However, few studies have explored the psychological processes that may explain why concealing identity is associated with mental and physical deficits. The present study explored concealing stigmatized identity as an ego depleting mechanism in response to perceived positive or negative attitudes towards LGBQ identity. If concealing stigmatized identity is in fact ego depleting, then perhaps this can partially account for the negative effects that concealment can have on an individual. Considering that individuals with stigmatized identity may be more susceptible to discrimination and may also assume that others will consider them inferior based on their identity, it is hypothesized that other individuals' attitudes or perceived attitudes towards sexual orientation will be associated with identity concealment which will, in turn, strain one's self-regulatory resources.

Hypotheses

1. Individuals who conceal their sexual orientation will experience ego depletion.
 - a. Individuals who conceal sexual orientation will experience higher rates of ego depletion than those who do not, as measured by performance on the Tower of Hanoi task.

- b. Individuals who conceal their sexual orientation from individuals they believe have negative views of their sexual orientation will experience higher ego depletion than two other groups of individuals: (a) those who conceal their sexual orientation from those they believe have positive views of their sexual orientation and (b) those who disclose their sexual orientation, with ego depletion measured by performance on the Tower of Hanoi Task.
2. Congruent with previous literature by Critcher and Ferguson (2014) it is predicted that there will be a significant difference in ego depletion when participants are instructed to conceal their identity.
 - a. Individuals who are instructed to conceal their sexual orientation from individuals they believe have negative views of their sexual orientation will experience higher ego depletion than individuals instructed to conceal their sexual orientation from those they believe have positive views of their sexual orientation.
3. Individuals' level of outness outside of the experimental conditions will not have an effect on ego depletion in the current study. Outness will not act as a covariate in differences between different conditions of the Acceptance Condition (Positive-accepting versus Negative-non-accepting) and Conceal/Disclose Conditions (Choice Disclose versus Choice Conceal versus Instructed Conceal).

- a. Individuals who experience higher ego depletion will report lower overall well-being on the Satisfaction With Life Scale than those with lower ego depletion.
4. This set of hypotheses is regarding anxiety as a dependent variable.
- a. Individuals who conceal sexual orientation will experience higher rates of generalized anxiety than those who do not, as measured by performance on the Tower of Hanoi task .
 - b. Individuals who conceal their sexual orientation from individuals they believe have negative views of their sexual orientation will experience higher generalized anxiety than two other groups of individuals: (a) those who conceal their sexual orientation from those they believe have positive views of their sexual orientation and (b) those who disclose their sexual orientation.
5. Outness will be correlated with subjective well-being and generalized anxiety. Higher outness will be positively related to higher well-being and lower anxiety.
- a. Higher scores of “outness” will be correlated with higher scores of well-being.
 - b. Lower scores of “outness” will be correlated with higher scores of Generalized Anxiety.

CHAPTER III

METHODS

The current study utilized online data collection via methods discussed below. The study was a quasi-experimental in design. Data included measures of outness of sexual orientation, psychological well-being, anxiety, an ego depletion measure, an experimental manipulation to test the study's hypotheses (writing of sexual fantasies), and demographic information, including sexual and gender identity. Quantitative statistical analysis was used to explore differences between conditions of the study, as well as relationships among outness, well-being, and anxiety. Finally, smaller sections of data were explored post hoc after reviewing the trends in the data. These post hoc hypotheses will be discussed in Chapter 4. In addition, ethical considerations considered throughout data collection are discussed in this chapter.

Participants

Participant Selection. Participation was open to any individual over age 18. Recruitment occurred online using a variety of social media sites (Facebook, Reddit, Twitter), and the majority of the sample was recruited from Amazon Mechanical Turk, a paid recruitment site. The primary investigator created social media recruitment materials and e-mail recruitment that included advertising for LGBTQ participants, a URL for the survey, information about institutional review board approval, and contact information for the primary investigator and faculty advisor (see Appendices). On social media, effort

was made to recruit lesbian, gay, bisexual, and queer (LGBQ) participants. Recruitment materials were initially dispersed in a variety of routes, including via current participants sharing the recruitment information with other potential participants, a specific social media group targeted towards recruiting participants, reaching out to LGBQ groups and organizations directly over social media, and a paid advertisement on Facebook. Since the social media recruitment was unsuccessful by only yielding 20% of the sample, Amazon Mechanical Turk (M*Turk) was utilized for recruitment.

When utilizing Amazon Mechanical Turk, non-LGBQ individuals (i.e. straight/heterosexual) were screened out before completing the study. Initially, Masters only were selected. This refers to workers who have been designated as high quality performance workers. There were limited responses with the Masters setting ($n=2$), so instead the advertisement was only available to workers with a 95% approval rate of previous work. The M*Turk recruitment did not state that it was specifically searching for LGBQ individuals to ensure the validity of the data, so participants would not identify as LGBQ simply for the monetary reward. Initially, workers were offered \$0.15. After initial data screening, the quality of data was evaluated. Many errors in the data were found, including frequent participant failure in the attention check questions, and a low completion rate for the final measures of the study (GAD-7 and depletion check questions). Additional data recruitment was done on M*Turk after increasing the payment to \$1.00. This improved the quality of results, however, the written sexual fantasies provided by participants were not reviewed until later on and several issues were found related to the sexual fantasies. Recruitment e-mails were then dispersed to

various LGBTQ centers across the United States and on university campuses and snowball sampling was utilized; however, these methods yielded no additional participants.

Participants. The majority of participants identified themselves as bisexual ($n=95$; 66%). Remaining participants identified as lesbian ($n=9$; 6.3%), gay ($n=16$; 11.1%), polysexual ($n=3$; 2.1%), pansexual ($n=13$; 9%), queer ($n=7$; 4.9%), and other ($n=2$; 0.7%). The majority of the sample was made up of self-identified women and men; women ($n=82$; 56.9%) and men ($n=60$; 41.7%). There were several participants who identified as transgender: transgender FTM spectrum ($n=2$; 1.2%); transgender MTF spectrum ($n=3$; 1.8%); and transgender non-binary ($n=3$; 1.8%). These participants were not included in the analyses of hypotheses.

Participants predominantly identified as White ($n=86$; 59.7%). The remaining participants identified as Black/African American ($n=13$; 9%), Hispanic/Latina/Latino ($n=8$; 5.6%), Asian/Pacific Islander ($n=30$; 20.8%), Native American/American Indian ($n=10$; 6.9%), multicultural ($n=9$; 6.3%), and other ($n=2$; 1.4%).

Note: These percentages do not add up to 100% exactly because participants were given the option of choosing all racial and ethnic identities that fit their experience.

Participants were asked if they were currently enrolled in an educational program. The majority of participants reported that they currently were not enrolled ($n=83$; 57.6%), and the remaining participants were enrolled ($n=63$; 42.4%). Of those enrolled, there were graduate students ($n=21$; 14.6%), college seniors ($n=15$; 10.4%), juniors ($n=16$; 11.1%), sophomores ($n=9$; 6.3%), and freshmen ($n=5$; 3.5%).

In terms of the highest level of education completed, most participants in the current study had obtained an undergraduate college degree ($n=56$; 38.9%), master's degree ($n=26$; 18.1%), or had completed some college ($n=46$; 31.9%). Five participants

reported that they were high school graduates (3.5%) and 8 participants reported attending some high school (5.6%).

Participants represented diverse geographic locations.:

West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming; $n=24$; 16.7%);

Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Vermont, Rhode Island; $n=29$; 20.1%);

Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; $n=21$; 14.6%);

South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Tennessee, Texas, South Carolina, Virginia, West Virginia; $n=39$; 27.1%);

Outside the United States ($n=31$; 21.5 %).

Regarding current approximate household income, 17 participants (11.8% of the sample) reported an income below \$10,000 a year, 48 (33.3%) reported an income between \$10,001 and \$30,000, 40 (27.3%) reported an income between \$30,001 and \$60,000, 22 (5.3%) reported approximate household income between \$60,001-\$90,000, and 16 (10%) reported an approximate household income of \$90,001 or more. One person did not report approximate household income.

The age range of participants was 18-61+. The majority of participants were under the age of 42. Participants 18-24 made up 22.2% of the sample ($n=32$). Numbers and percentages for the remaining age groups were as follows: 25-31 (63; 43.8%); 32-37 (24; 16.7%), Participants 38-42 comprised 6.3% of the sample ($n=9$). Participants 42-48

comprised 4.9% of the sample ($n=7$). Participants 49-54 comprised 2.1% of the sample ($n=3$). Participants 55-60 comprised 2.1% of the sample ($n=3$), and 2.1% of the sample were over the age of 61 ($n=3$).

Materials

The following section describes the purpose, psychometric properties and procedures for the administration for each measure utilized in the current study.

Demographic information. A demographic questionnaire (written by the primary investigator) asked participants to report age, sexual identity, gender identity, racial identity, geographical location, gender of most recent sexual partner, current educational level, and current level of income. Participants were given open space to describe identities not conveyed in answer choices above.

In the demographic section, participants were instructed to create and remember a participant code that they used to enter at an additional website later on in the study to complete the competitive ego depletion measure (See Appendix D).

Outness Inventory (Mohr & Fassinger, 2000). This scale measures the degree to which individuals are open about their sexual orientation identity (Mohr & Fassinger, 2000). There are 11 items, which assess three domains of relationships, and how “out” an individual is. These domains are measured in the following three subscales: family, everyday interactions, and religious relationships. In addition to providing domain scores comprised of the sum of all items in a domain, the mean of all three subscales provides an overall outness score (Mohr & Fassinger, 2000). For the purpose of this study, just the overall outness score was computed. The Cronbach’s alpha for this scale has previously been reported as ranging from .74 to .97 (Mohr & Fassinger, 2000). Specifically, results

indicate adequate internal consistency for each subscale: Out to World ($\alpha = .79$), Out to Family ($\alpha = .74$), and Out to Religion ($\alpha = .97$). Mohr and Fassinger used several measures to support convergent and divergent validity. These include comparing the measure to self-esteem and involvement with gay/lesbian groups or straight people. In addition, the authors made special effort to validate this measure during different phases of sexual orientation identity development, different age groups, religious affiliations, and to include LGBTQ individuals of color (See Appendix E).

In the initial validation study, information about means, ranges, and standard deviations was not included (Mohr & Fassinger, 2000). Previous research with a sample of men and women who identified as LGB found that the mean score was 4.89 with a standard deviation of 1.32. Within the same study, with a bisexually-identified sample only, the mean score was 4.32 and the standard deviation was 1.51, where the mean score for lesbian and gay participants was 5.08 with a standard deviation of 1.29 (Balsam & Mohr, 2007). Lower scores on the Outness Inventory suggest that individuals are less out and higher scores indicate that individuals are more out. It is recommended that responses of *N/A* be treated as 0, and any missing data be replaced with recommended practices.

The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffins, 1985). The SWLS is a measure of feelings of contentment and satisfaction with overall life experiences. This measure allows participants to express satisfaction with their life based on their own constructed meaning of satisfaction. It has been utilized and validated with individuals across the lifespan (Diener, Emmons, Larsen, & Griffins, 1985). The SWLS attempts to accomplish this with five self-report statements, including *“The conditions of my life are excellent,”* and *“So far I have gotten the important things I want*

in life.” These items are rated on a 7-point scale from “Strongly Disagree” (1) to “Strongly Agree” (7). Scores are calculated by summing all of the responses. Higher scores indicate higher satisfaction with life and overall well-being. According to Diener et al., (1985), this measure has an internal consistency of ($\alpha = .87$), and high test-retest reliability over two months ($r = .82$). In addition, these studies also demonstrated that this measure of life satisfaction is not impacted by one’s current mood or situational factors. Therefore, this measure will give an understanding of satisfaction for participants outside the experimental conditions. Convergent validity was demonstrated in moderate correlations between the SWLS and other measures of well-being (See Appendix F).

Pavot, Diener, Colvin, and Sandvik (1991) and Pavot and Diener (1993), sought to validate this measure further with a two-part study. The findings of the authors cited in the previous sentence supported the work of Diener et al., (1985). In both studies, the SWLS was highly correlated with other measures of life satisfaction (LFI-A and Philadelphia Geriatric Morale Scale). The factor analysis conducted in both studies demonstrated that the SWLS is composed of single factor that was responsible for 74% of the variance and has excellent convergent validity. In addition, these findings suggest many benefits to using this scale. Specifically, it is brief and predictive of life satisfaction, and has been validated in all age groups. In addition, Pavot et al., (1991) support the claim of Diener et al., (1985) which suggests that this measure is stable in measuring overall life satisfaction and does not fluctuate under day-to-day mood fluctuations.

Pavot, Diener, Colvin, and Sandvik (1991) administered the SWLS twice in a single study to further validate the measure. They found the SWLS to have mean scores

of 24.44 and 24.05 in the two parts of the study, with standard deviations of 6.99 and 7.82, respectively. In Pavot & Diener (1993), researchers asserted that a score of 20 represents a neutral state of well-being. The range of possible scores on the scale is 5-35. Scores of 21-25 represent slightly satisfied, 26-30 represent satisfied, and 15-19 represents slightly dissatisfied, scores of 10-14 indicate dissatisfied, and scores of 5-9 indicate extremely dissatisfied. Frequent findings in Western societies show mean scores from 23 to 28 and indicate slight satisfaction (Pavot & Diener, 1993).

Partner sexual fantasies/scenarios. Participants were informed at the beginning of the study that they would be engaging with a confederate fictitious partner. Participants were provided with a brief sexual fantasy/scenario for which they were informed were written by their partner(see Appendix G) . Next, they were asked to engage in an erotic writing task by describing a sexual fantasy or recent sexual experience prior to engaging in a competitive task and video chat with this partner towards the end of the study. They were provided specific information in the scenario that signaled whether their partner had negative or positive views of LGBTQ individuals. The intention was to simulate the experience of concealing or disclosing sexual orientation to individuals who are perceived as accepting and those perceived as not accepting. Participants were then given instructions about sharing a fantasy or experience (See Appendix H).

“Tower of Hanoi” Task. The “Tower of Hanoi” task is used as a measure of ego depletion by determining executive functioning and planning (See Appendix I). Executive functioning refers to cognitive processes that relate to managing tasks and goals, mental control, and self-regulation (Williams & Thayer, 2009). The task has been

successfully computerized (Freeman & Muraven, 2010; see Figure 1). In the version of the Tower of Hanoi used in the current study, there are three poles and four rings. The goal is to move all of the rings to the final pole on the right. The player can only stack smaller rings on top of larger rings. The participants were given these instructions: *“Move all the rings from the left rod to the right rod at the very end. You can only move one ring at a time and a ring cannot be put on top of a smaller ring.”* The participants were also able to see how many moves they had made, the number of incorrect moves, and amount of time passed in seconds. These variables were also recorded by the external website.

Freeman and Muraven (2010) supported how executive functioning is linked to ego depletion, and showed that participants who have engaged in a previous ego depletion task struggled performing with the Tower of Hanoi. Traditionally, research participants are given four disks and three poles. Four disks can be successfully moved to the opposite pole in 15 moves. Most adults can successfully complete this task in a reasonable amount of time using the minimum amount of moves. Individuals who are experiencing ego depletion complete the Tower of Hanoi using more moves than necessary (Pahlavan, Mouchiroud, & Nemlaghi-Manis, 2012). An adult of average executive functioning should be able to complete the Tower of Hanoi in 120 seconds using 15 moves (Wright & Hardie, 2015; Bishop & Aamodt; Leeper, McGurk, & Skuse, 2001); however, not all findings have been consistent. The Sanzen Tower of Hanoi Manual (2012) provides normative data on samples using 4 pegs/3poles across separate age ranges. Individuals in their 20s, 30s, and 40s generally completed the Tower of Hanoi with 4 pegs/3 poles using 27-30 moves.

For the purposes of this study, the number of moves participants used was compared to the total number of moves of all other participants to explore the differences in the total number of moves based on experimental condition. Baumeister et al., (1998), found that delays in executive functioning and planning abilities result from ego depletion. The current study used 3 pegs/4 poles and determined ego depletion by the number of moves it took an individual to complete the Tower of Hanoi (Pahlavan, Mouchiroud, & Nemlaghi-Manis, 2012).

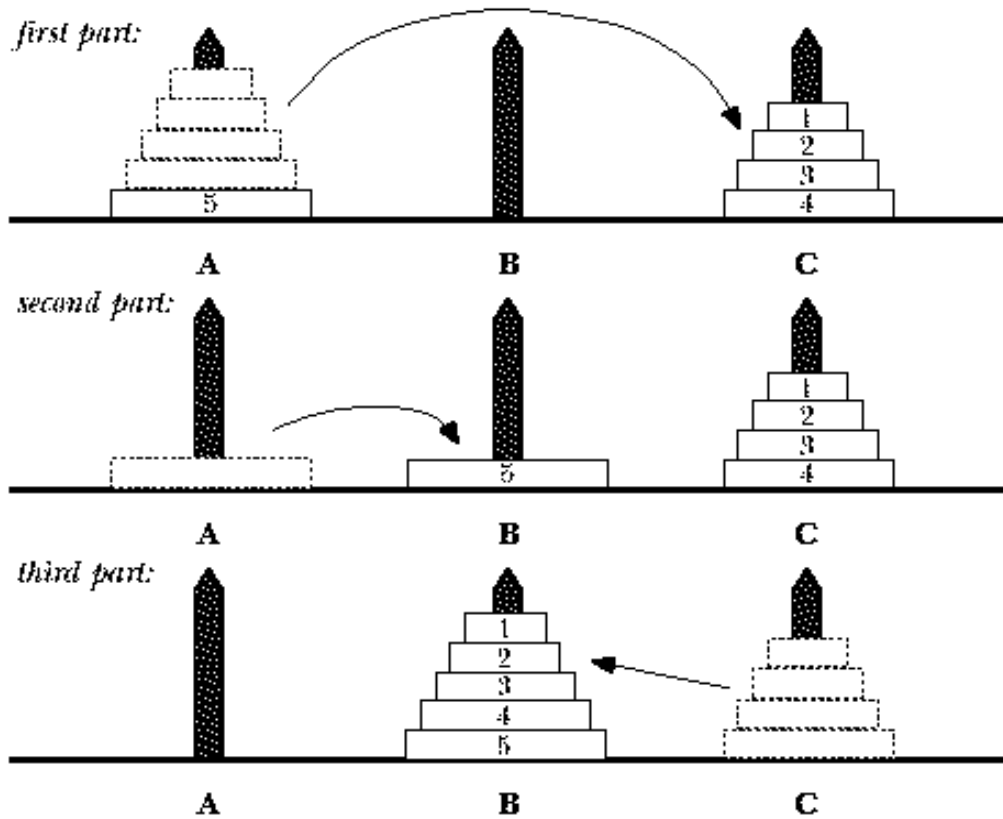


Figure 1 Tower of Hanoi Diagram. (Source Unknown)

It should be noted that there is not a repeatedly reliable and valid calculation of ego depletion that is consistent across the literature. Various research studies using Tower of Hanoi have reported vague calculations or have each utilized different formulas, including converting to Z-scores. For the current study, three alternatives were tested: total moves, converting raw data to Z-scores, and utilizing one of the suggested formulas $((15 - \text{Incorrect_Moves}) / (\text{Moves} - \text{Incorrect Moves}) * \text{Time it took to complete})$. These results did not seem to highlight any differences in results; therefore, moving forward, ego depletion is defined as the number of moves used to complete the Tower of Hanoi.

Generalized Anxiety Disorder (GAD-7) (Spitzer, Kroenke, Williams, & Löwe, 2006). The GAD-7 is a 7 item brief measure of generalized anxiety disorder (GAD). The items were developed based on DSM-IV symptom criteria for GAD. The measure asks participants how often they were bothered by each symptom during the last two weeks. Response options include “not at all,” “several days,” “more than half the days,” and “nearly every day,” scored as 0, 1, 2, and 3. For example, items assessed how frequently over the past two weeks participants had trouble relaxing, felt nervous, or had difficulty stopping themselves from worrying. The cut-off point optimizes sensitivity (89%) and specificity (82%). The co-occurrence of GAD and symptoms of depression were taken into consideration while developing the measure. A factor analysis confirmed that GAD was a unique and distinct measure (Spitzer et al., 2006). Good agreement has also been found between self-report and interviewer-administered versions of the measure. The original development of the measure included a criterion sample from 15 primary care settings across the United States, resulting in a sample size of 965. For criterion and construct validity, self-report results were compared with diagnoses made by mental

health professionals. In this original study, the Cronbach's alpha of the measure equaled .92. Test-retest reliability was also adequate at .83. Results were similar between men and women and for those older and younger than the mean age of participants (47 years old). In addition, the GAD-7 was positively correlated with measures of functioning. These results indicated that the GAD-7 was valid in primary care settings.

In 2008, Löwe, Decker, Müller, Brähler, Schellberg, Herzog, and Herzberg attempted to validate the GAD-7 with a general population. This study included over 5000 participants and compared several subsamples, including age, gender, and employment status, while utilizing previous findings as a comparison group. Internal consistency was acceptable (.89). The homogeneity of GAD-7 scores across the subgroups of gender and age support previous findings that the GAD-7 is valid in samples of men and women as well as in both older and younger participants. Scores of 5, 10 and 15 represent cut-off points for mild, moderate and severe anxiety. Additionally, the average score is typically 14.2 in a psychiatric sample (Sptizer, Korenke, Williams, & Lowe 2006).

In Ghafoori, Barragan, Tohidian, & Palinkas (2012), the GAD-7 was used with a diverse sample, including Black and Latino participants. The results yielded an internal consistency of .87 (Lehavot & Simoni 2011), and utilized the GAD—7 with a sample of sexual minority women. The Cronbach's alpha of the measure in this particular study was .92. There are few studies testing the reliability and validity of the GAD-7 with diverse populations, in regards to race, ethnicity, and sexual identity. While there appears to be consistency between Cronbach's alpha in subsamples and the limited research involving diverse groups, the GAD-7 may still not account for the unique stressors that face diverse

groups, specifically the lack of validation and reliable testing of the measure for sexual minority men and sexual minorities of color. For the purpose of this study, the GAD-7 will not be interpreted as a diagnostic screener due to the limited support of this measure's accuracy with an LGBQ population; however, it will be used to assess experiences of anxiety in the current quasi-experiment and how it may correlate with outness and concealment/disclosure of sexual diversity.

Procedure

Participants were recruited from various listservs serving the LGBQ community, university and community LGBTQ groups, and social media sites such as Facebook, Tumblr, and Reddit. Recruitment was done via e-mail and Internet advertisements (See Appendixes A and B). Participants were recruited and informed that they would partake in a study about "Cognition and Sexual Health." Initially, they were provided with an informed consent form stating that the study concerns Cognition and Sexual Health, particularly focusing on LGBQ participants, and that they would be asked to engage in a competitive task and video chat with a partner (See Appendix C).

In the informed consent, participants were told that the questions asked were very personal for the purpose of this study. In addition, participants were informed that they may be asked or shared materials that were sensitive in nature due to sexual content. Participants were informed that everything they share would be confidential and that they and their partners would be agreeing to keep everything confidential as a condition of participation. They were told that the steps taken to safeguard confidentiality were to ensure that the information that they share could not be shared with anyone other than the

experimenter and their partners. Participants were also told that they would be informed of which information would be shared with their partner prior to their interactions.

Participants began by completing the demographic questionnaire. At the beginning of the demographic questionnaire, participants were asked to create a participant code. They were informed that this code would be used later in the study when competing in an additional task. The participants were asked to create a code using the first three letters of their birth month and the last three numbers of their phone number. This decreased the chances of having duplicate numbers and increased their likelihood of recalling the code.

Following the demographic questionnaire, participants completed the Satisfaction With Life Scale (SWLS), the Outness Inventory, were provided with their partner's sexual fantasy and/or sexual scenario (as described below), given instructions or no instructions regarding an erotic writing task (randomly assigned), and then asked to write their own sexual fantasies or to describe a previous sexual experience. Next, participants completed the Tower of Hanoi Task, the GAD, a manipulation check (See Appendix I), and were finally provided a debriefing (See Appendix L). Specific instructions included informing participants that they would be engaging in a competitive task followed by a video chat with a partner.

Following completion of the demographic questionnaire, Outness Inventory, and Satisfaction with Life Scale, participants were provided with their partner's sexual fantasy and description of a past sexual experience, and then asked to engage in an erotic writing task. This partner did not actually exist, and the sexual fantasies/previous sexual experiences of the partner was provided as a deception in order to present the participant

with attitudes of another person that were either positive or negative (See Appendix G for sexual fantasies). The primary investigator crafted two sexual fantasies – one to indicate that the fictitious partner was accepting of diverse sexual identities, and the other indicating non-acceptance of such diversity. Participants were randomly assigned partner information that was accepting or not accepting. The partner’s fantasies varied based on the participant’s own demographic information that was provided . For example, self-identified men received a biography of a partner who identified as a man. In addition, fictitious partners were within five years of the participant's’ age as an attempt to increase motivation for participation in the study.

After receiving information about their partner and their sexual fantasies/sexual scenario, some participants were randomly given instructions to intentionally conceal their sexual identity while writing their own sexual fantasy/sexual scenario; other participants were also randomly assigned the condition in which they were not given instructions. All participants were provided a definition of what a sexual fantasy is. Based on their responses, they were placed into one of two conditions – concealment or non-concealment – at the end of the study. Specifically, a random subsample of participants was instructed to refrain from using gender identifying pronouns to describe their sexual experience or fantasies. By not specifying a sexual partner, for example, as “him” or “her,” the sexual orientation of the participant could therefore be concealed in the fantasy. There was not a condition that was randomly instructed to disclose. Through consultation, it was decided it would be unethical to request participants to disclose stigmatized sexual orientation, as some participants would likely be uncomfortable doing so.

After the exchange of sexual fantasies, the participants completed the “Tower of Hanoi” task, a measure of ego depletion. There was a link embedded in the survey that took participants to another secure website for this task. Once they followed this link, they were prompted to enter their participant code. This website recorded how many moves the participant used to complete the Tower of Hanoi, whether they completed the task or not, and how long it took them to complete or give up. They were then given instructions to return back to the survey and enter in the number of moves that it took them to complete the task. The entry of this number was used to assess the validity of their participation in the Tower of Hanoi and their adherence to instructions. The number of moves was recorded by the external website so that the accuracy of their self-report could be verified.

Following the Tower of Hanoi, participants completed the Generalized Anxiety Measure (GAD-7). After this last measure, the participants were asked a series of questions regarding their partner. The participants were asked questions to check the effectiveness of the manipulation. Participants were asked how accepting of diverse sexual orientation their partner seemed, how comfortable they were disclosing information about themselves to their partner, and how accepting towards sexual diversity they perceived their partner.

Participants were then provided a debriefing (see Appendix L). Participants were informed that there was no other participant they would be chatting with, and that one of the purposes of this study was to explore if concealing identity leads to ego-depletion in a subsequent task. They were also informed that another purpose of this study was to understand the experience of LGBTQ individuals in order to create better services for the

population and inform future research. Participants were also given several LGBTQ-specific resources and Crisis Hotline numbers in case they desired emotional support following the study.

Ethical Considerations

A major ethical consideration of this study was the use of deception during the entirety of the experiment, and specifically for recruiting participants. Because the active choice of choosing to conceal or disclose sexual orientation is the best way to measure the relationship between concealed stigmatized sexual orientation identity and ego depletion, using deception was determined to be the only way for this study to be carried out efficiently. Deception was used to lead participants to believe that there was an actual partner in the experiment. Informing participants that they would be in a study where they may hear hurtful information towards one of their identities, but that they would not have to interact with someone afterwards might have biased their response to both the biographical sketch and the performance in the ego depletion task. In contrast, if participants did not believe they were interacting with a partner, then the study would not have properly mimicked real-life interactions where participants choose to conceal or disclose sexual identity.

In addition, while being faced with attitudes that are not accepting of their sexual orientation may expose individuals to emotional distress, this distress does not go beyond the experiences of oppression and rejection that individuals who identify as LGBQ experience in everyday. Most LGBQ individuals are often faced with the stress of choosing whether or not to come out (Meyers, 2003). Due to the potential emotional discomfort that might have occurred during the experiment, participants were informed

that they could withdraw from the study if they began to feel uncomfortable at any point. Again, the study did not expose participants to anymore stress than they may experience in everyday situations. However, since deception was used, and participation may have been somewhat distressing, at the end of the study, participants were debriefed about the true purpose of the study and provided with resources for support.

Another ethical consideration was whether participants would be instructed to disclose. If utilized, individuals could choose to either conceal or disclose, and there was a subset of participants who were instructed to conceal consistent with previous research on the relationship between concealing sexual identity and ego depletion. Given the potential emotional risks to feeling pressured to disclose without the genuine desire to disclose, specifically in a condition that was designed to be perceived as negative (non-accepting), the principal investigator chose to not create a condition of the study in which participants were instructed to disclose.

Given the anonymity of the survey and the confidential resources, there was little way to know the extent of distress experienced by any participants. No participants have provided feedback about the study to the primary investigator outside the study or to her Institutional Review Board. During the study's manipulation check, participants were asked if they had any comments about the survey. One participant stated that they believed it was a fictitious partner, while other participants commented that the survey was "good," "nice," or had no feedback. Few participants actually provided substantial comments.

Please see Table 1 for a step-by-step breakdown of the procedure.

Table 1. Procedure Steps.

Step	Material	Numbers of Items/Estimated Time
Step 1	Informed Consent	Approximately 2 minutes
Step 2	Demographic Section	Approximately 5 minutes
Step 3	Satisfaction With Life Scale	5 items/Approximately 3 minutes
Step 4	Outness Inventory	11 items/ Approximately 5 minutes
Step 5	Partner Sexual Fantasies	Approximately 5 minutes
Step 6	Erotic Writing Task	Approximately 8-10 minutes
Step 7	Tower of Hanoi Task	Approximately 2 minutes
Step 8	GAD-7	7 items/ Approximately 5 minutes
Step 9	Manipulation Check	3 items/Approximately 2 minutes
Step 10	Debriefing	Approximately 3 minutes

Design Overview

This study was a between-subjects quasi-experiment. The primary dependent variable of this study is ego-depletion, which is measured by the number of moves used on the problem-solving task (Tower of Hanoi). The independent variables are (1) receiving a positive or negative evaluation of LGBQ sexual orientation and (2) whether or not the participant concealed their LGBQ identity. Participants were randomly assigned into conditions. The independent variables were predicted to interact in a way that produces differences on the ego-depletion task and anxiety. Specifically, it is hypothesized that there is a positive correlation between concealing identity and poorer performance on the ego depletion task. In addition, ego depletion is predicted to occur in

conditions where participants conceal their identity, and in conditions where participants are subject to negative attitudes of their fictitious partner. The highest level of ego depletion is expected to occur in the condition where both of these independent variables interact (Choice Conceal and Negative-Non Accepting). On the other hand, the conditions that experience positive attitudes of their partner (confederate) and do not conceal their identity are predicted to experience lower ego depletion (See Figure 2). These findings from these predictions will be explored in Chapter IV, Results.

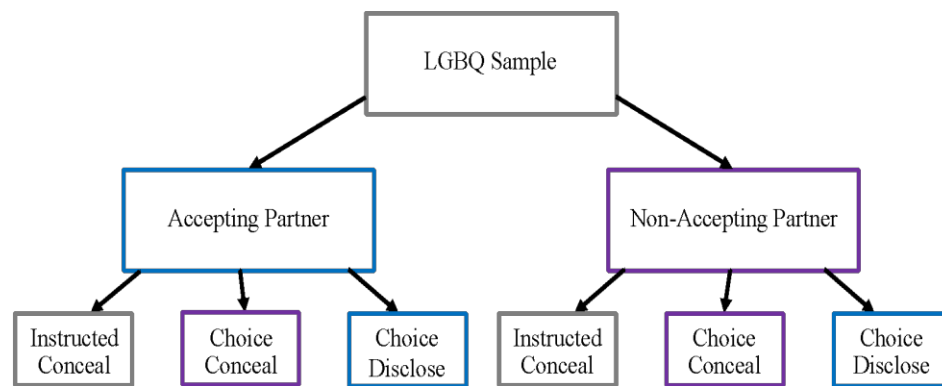


Figure 2. Study Design.

CHAPTER IV

RESULTS

Initial analyses including data cleaning procedures, descriptive statistics, bivariate correlations, and hypothesis testing were completed utilizing SPSS.

Preliminary data screening. The sample began with approximately 1300 participants. Several steps were taken to clean the data, which included removing participants for various reasons. First, 500 participants identifying as heterosexual, and several additional participants who identified as transgender were screened out. The sample began with 577 LGBTQ identified participants. Next, participants who did not complete the Satisfaction with Life Scale or did not follow instructions of omitting an intentionally left blank item were removed. Individuals, who did not include a sexual fantasy for coding, only wrote one word, or copied the example fantasies were excluded from analysis; individuals who did not complete the Tower of Hanoi task were removed as well. Next, cases that did not include a GAD-7 score were removed. In addition, cases that responded to any check questions labelled with “Intentionally leave blank” were excluded, (see Table 2). Prior to testing the hypotheses, the data was screened for missing values, univariate normality, and multivariate outliers. The remaining cases had minimal missing data (less than 1%; Parent, 2013). Participants’ missing scores were replaced with their mean score on the associated measure. This involved taking the mean score of

the other items within a given measure. Note that 144 valid and complete cases were utilized in the data analysis. See Table 2 for a summary of data removal.

Table 2. Data Removal.

Step	Step of Survey	Number of Participants Removed	Remaining Participants at End of Step
1	Demographic Section	450	577
2	Satisfaction With Life Scale	52	525
3	Outness Inventory	0	525
4	Partner Sexual Fantasies	0	525
5	Erotic Writing Task	175	350
6	Tower of Hanoi Task	64	286
7	GAD-7	142	144

Manipulation check. At the end of the survey, questions were asked to explore how the effectiveness of the deception used in the study. Specifically, the manipulation check explored the effectiveness of the confederate partner’s sexual fantasy and scenarios in terms of communicating accepting versus non-accepting attitudes towards LGBTQ people. The responses to these questions were on a 4-point Likert scale (completely, somewhat, neutral, and not at all). An independent samples t-test was run on each of the manipulation check questions to determine the differences between conditions. The results of these independent samples t-tests were nonsignificant, with .05 and below

indicating significance [Question 1: $t(141) = -1.37, p = .17$; Question 2: $t(141) = -.99, p = .32$; Question 3: $t(141) = -.98, p = .33$; Question 4: $t(141) = -.94, p = .35$]. It appears that the deception utilized may not have been effective at manipulating the accepting versus non-accepting conditions. Given the lack of differences in perceived acceptance between conditions, it appears unlikely that the non-accepting condition of this experiment mimicked the anxiety provoking experience of disclosing one's sexual identity.

Power analysis. An a priori power analysis for a factorial ANOVA was conducted using G*Power software to determine this study's ideal sample size. To obtain an effect size with a power of .80 for 6 conditions predictors (See Table 5), at a probability of .05, a sample size of 500 was recommended. A post-hoc power analysis for a 2x3 ANOVA was conducted to verify achieved power given the current sample size. Using the parameters, the analysis yielded an achieved power of .95. Similarly, the post-hoc power analysis for an ANCOVA yielded the same power of .95. It should be noted that the power of the current sample was significantly impacted by the small sample size and unequal condition samples.

Preliminary Analysis. Descriptive statistics for the Outness Inventory, Satisfaction With Life (SWLS) measure, and the Generalized Anxiety Disorder- 7 (GAD-7) are presented below. See Table 3.

Table 3. Descriptive Statistics.

Measures	M	SD	α
Outness	3.9	1.6	.88
SWLS	15.6	4.9	.90
GAD-7	15.3	5.3	.90

The means and standard deviations in standardization samples and other studies utilizing the measures were presented in Chapter III. There are some notable differences between the data in the current study compared to the means and standard deviations of previous research. First, the average mean of Outness is lower than compared to previous research, where the means ranged from 4.32-4.89. The mean for Satisfaction With Life Scale (SLWS) was about a standard deviation below the reported norm of previous research ($M=23$). The average score of 15 suggests that the sample is generally slightly dissatisfied with their life. Relatedly, the mean for GAD-7 is somewhat higher than the norm. In a clinical sample, the mean score was 14.2. In addition, 15 is the cutoff score for severe anxiety symptoms. The current sample has a mean of 15.3. Overall, results indicated that the overall sample appears less satisfied, more anxious, and less out compared to the normative samples for the respective measures.

Similarly, performance on the Tower of Hanoi in the present study differed slightly from properties reported in the manual. The mean number of moves in the present study ($M= 33$) appeared to be considerably higher than the manual ($M=22$; Sanzen Manual). The standard deviation was also 27.4, whereas the Sanzen sample had a standard deviation of approximately 15. This suggests a wide variety of performances on the Tower of Hanoi task in the current sample.

Following preliminary data screening, participants were coded into the conditions of the current quasi-experiment. These conditions are outlined below.

Table 4. Conditions and Participant Totals.

Conditions	Number of Participants
Positive (Accepting Attitudes) x Choice Conceal	21
Negative (Non-Accepting Attitudes) x Instructed Conceal	29
Positive (Accepting Attitudes) x Choice Conceal	21
Negative (Non-Accepting Attitudes) x Instructed Conceal	26
Positive (Accepting Attitudes) x Choice Disclose	16
Negative (Non-Accepting Attitudes) x Choice Disclose	31

Table 4 outlines the number of participants within each condition. Participants were randomly assigned into Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) in regards to their fictional confederate partner. The Conceal/Disclose Condition was defined by participants being randomly assigned into an instructed conceal condition or a choice condition (chose to conceal or disclose). Therefore, the Conceal/Disclose condition consisted of three levels: Choice Disclose versus Choice Conceal versus Instructed Conceal.

Planned analysis included a series of 2 x 3 ANOVAs, with Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) and Conceal/Disclose Conditions (Choice Disclose versus Choice Conceal versus Instructed Conceal). These analyses were conducted to determine group differences on the ego depletion task (Tower of Hanoi). An Analysis of Covariance, with outness as the

covariate, was also conducted. Correlations were run between outness, subjective well-being, generalized anxiety, and ego depletion (moves). As a reminder, some participants were randomly assigned into conditions in which they were instructed to conceal their sexual orientation ($n=64$). Of the 64 instructed to conceal their sexual orientation, 9 did not follow the instructions; therefore, 55 participants were instructed to conceal their sexual orientation and did. Participants who did not follow the instructions were placed into the Choice Disclose level of the Conceal/Disclose Condition.

At this point, the results of the hypotheses proposed at the end of Chapter II will be reviewed, hypothesis by hypothesis. In some cases, more than one hypothesis will be tested in a single statistical analysis.

Main Analyses

Hypothesis 1

Individuals who conceal their sexual orientation will experience ego depletion.

1a. Individuals who conceal sexual orientation will experience higher rates of generalized anxiety than those who do not, as measured by performance on the Tower of Hanoi task.

1b. Individuals who conceal their sexual orientation from individuals they believe have negative views of their sexual orientation will experience higher ego depletion than two other groups of individuals: (a) those who conceal their sexual orientation from those they believe have positive views of their sexual orientation and (b) those who disclose their sexual orientation.

In order to examine differences between concealing and disclosing stigmatized sexual identity and ego depletion, a 2 x 3 ANOVA was conducted for Acceptance

Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) versus Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal). The sample did violate Levene's test of homogeneity of variances; therefore, homogenous variance was not assumed. The results of a 2 x 3 ANOVA indicated a nonsignificant main effect for Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) $F(1,138) = .00, p=.99$, partial eta squared = .00. The results indicated a nonsignificant main effect of conceal/disclosure (choice conceal, chose to disclose, instructed to conceal) $F(2,138) = 2.34, p=.10$ partial eta squared = .03 (See Table 5).

Table 5. Test of Between-Subjects Ego Depletion (Moves).

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Conceal/Disclose Condition	3399.17	2	1699.59	2.35	.10	.03
Acceptance Condition	.02	1	.02	0.00	.10	.00
Interaction	4936.05	2	2468.03	3.42	.04	.05
Error	99644.55	138	722.06			
Total	267268.00	144				
Corrected Total	107134.639	143				

a. R Squared = .070 (Adjusted R Squared = .036)

The results of a 2 x 3 ANOVA indicated that there was a significant interaction between Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) on the ego depletion task (moves on Tower of

Hanoi), $F(5,138) = 3.42, p = .04$, partial eta squared = .05. The significant p value suggests that there is an interaction between the independent variables, Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal), which leads to a difference between conditions; however, there is not a main effect indicating a difference between conceal versus disclose. Descriptive statistics of different levels of each condition are included in Table 6.

Hypothesis 2

Congruent with previous literature by Critcher and Ferguson (2014), there will be difference on ego depletion between participants who are instructed to conceal their identity and those not given instructions.

Table 6. Planned Comparisons Ego Depletion (Moves).

Conceal Disclose Instructed	Condition	Mean Difference (I-J)	Std. Error	Sig. ^b	Upper Bound
	Choice	-4.749	5.86	.419	6.831
Choice Disclose	Conceal Instructed Conceal	-11.752*	5.50	.034	-.873
Choice Conceal	Choice Disclose Instructed Conceal	4.749	5.85	.419	16.329
		-7.004	5.51	.206	3.891
Instructed Conceal	Choice Disclose Choice Conceal	11.752*	5.50	.034	22.631
		7.004	5.51	.206	17.898

Based on estimated marginal means

*. The mean difference is significant at the .05 level

To determine differences between participants instructed to conceal and those that had the choice to conceal, planned comparisons were conducted in the 2 x 3 ANOVA above (See Table 6 above).

Figure 3 highlights the interaction between different levels of the Acceptance Condition and the Conceal/Disclose Condition. Descriptive statistics (See Table 7) indicated that individuals who were instructed to conceal and were in the positive (accepting attitudes) condition reported the highest number of moves on the ego depletion task, indicating the highest level of ego depletion. In contrast, the group that was in the positive condition and chose to disclose, reported the lowest number of moves (i.e., performed the best on the ego depletion task), suggesting the lowest level of ego depletion. Results of the planned comparison were only able to explore differences between the separate groups of the Conceal/Disclose Condition (Choice Disclose/Choice Conceal/Instructed Conceal). Planned comparisons of the Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) could not be conducted since there were only two levels of the condition. The planned comparisons between the Choice Disclose group and the Instructed Conceal group indicated a significant difference (Mean difference = -11.572, $p = .034$). Total mean differences showed that individuals in the instructed conceal condition experienced higher ego depletion (as measured by the number of moves of the Tower of Hanoi task), while those in the choice disclose condition used less moves to complete the task. This is somewhat consistent with the prediction that those who disclosed would experience the least ego depletion. The specific finding, however, was that those individuals given the choice to disclose experienced the least ego depletion.

Table 7. Descriptive Statistics of Ego Depletion (Moves).

Conceal Disclose Condition	Acceptance Condition	Mean	Std. Deviation	N
Choice Disclose	Positive	21.75	7.83	16
	Negative	32.42	17.61	31
	Total	28.79	15.76	47
Choice Conceal	Positive	29.19	10.71	21
	Negative	34.48	20.01	21
	Total	31.83	16.072	42
Instructed Conceal	Positive	46.85	51.93	26
	Negative	30.82	20.45	29
	Total	38.40	39.12	55
Total	Positive	34.59	35.42	63
	Negative	32.38	19.10	81
	Total	33.35	27.37	144

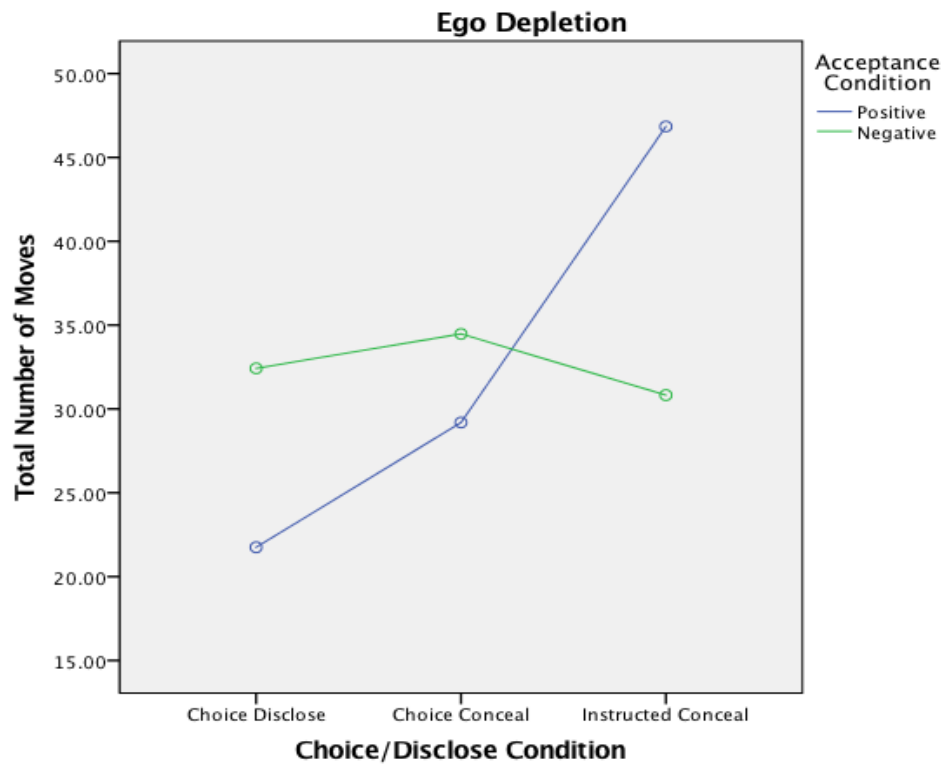


Figure 3. Test of Between-Subjects Ego Depletion (Moves).

Hypothesis 2a. Individuals who are instructed to conceal their sexual orientation from individuals they believe have negative views of their sexual orientation will experience higher ego depletion than those instructed to conceal their sexual orientation from those they believe have positive views of their sexual orientation.

Table 8. Test of Between-Subjects Ego Depletion (Moves).

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Conceal/ Disclose Condition	1166.58	1	1166.58	1.21	.274	.01
Acceptance Condition	684.94	1	684.93	.71	.401	.00
Interaction	2698.69	1	2698.69	2.81	.097	.03
Error	89419.10	93	961.50			
Total	216893.00	97				
Corrected Total	94257.94	96				

a. R Squared = .051 (Adjusted R Squared = .021)

To test this hypothesis, two different groups were compared: (a) individuals who were instructed to conceal from individuals they believed had negative views of their sexual orientation, and (b) individuals instructed to conceal from those they viewed had positive views of their sexual orientation. A 2 x 2 ANOVA was used to analyze the main effect and interactions (Instructed Conceal x Positive/Negative Attitudes versus Choice Conceal/Instructed to Conceal) (See Table 8 above). The main effect of choice conceal versus instructed conceal was not significant $F(1,93) = 1.21, p=.27$, partial eta squared=.01. There was not a significant main effect for the Acceptance Condition (Positive-

Accepting attitudes versus Negative- Non-Accepting attitudes) $F(1,93) = .71, p=.99$, partial eta squared= .00. The 2 x 2 ANOVA yielded no significant interaction $F(1,93) = .280, p=.09$, partial eta squared= .04 (See Figure 4: Test of Between Subjects Ego Depletion (Moves)). Descriptive statistics of the different levels of each condition are included in Table 9.

Table 9. Descriptive Statistics Ego Depletion (Moves).

Conceal Disclose Condition	Acceptance Condition	Mean	Std. Deviation	N
Choice Disclose	Positive	21.75	7.83	16
	Negative	32.42	17.61	31
	Total	28.79	15.760	47
Choice Conceal	Positive	29.19	10.71	21
	Negative	34.48	20.01	21
	Total	31.83	16.07	42
Instructed Conceal	Positive	46.85	51.93	26
	Negative	30.83	20.45	29
	Total	38.40	39.12	55
Total	Positive	34.59	35.42	63
	Negative	32.38	19.10	81
	Total	33.35	27.37	144

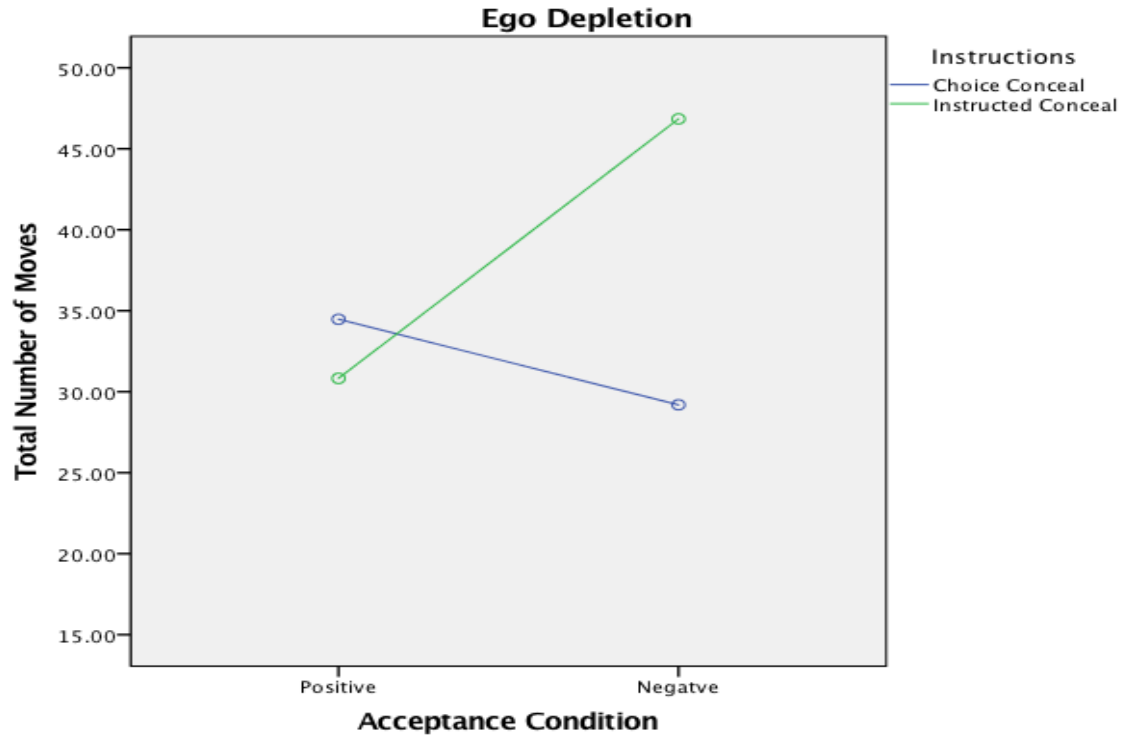


Figure 4. Test of Between-Subjects: Choice Conceal Instructed Conceal.

Hypothesis 3

Individuals' level of outness outside of the experimental conditions will not have an effect on ego depletion in the current study. Outness will not act as a covariate in differences between different conditions of the Acceptance Condition (Positive-accepting versus Negative-non-accepting) and Conceal/Disclose Conditions (Choice Disclose versus Choice Conceal versus Instructed Conceal).

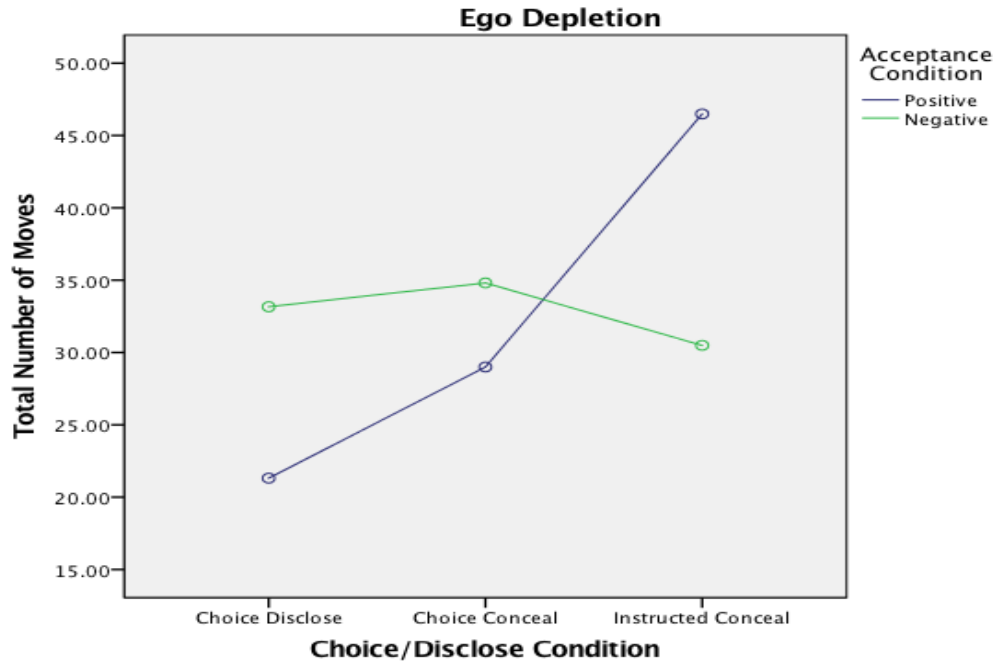
A 2 x 3 Analysis of Covariance (ANCOVA) was utilized to test Hypothesis 3. The independent variables were Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal), and the covariate was total score on the Outness Inventory (Mohr & Fassinger, 2000) (See Table 10). A preliminary

analysis evaluating the homogeneity-of-slopes between the covariate and the dependent variable was conducted. The partial eta squared was .05, indicating that the mean differences of Acceptance Condition (Positive- Accepting attitudes versus. Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) on Ego depletion (moves) in the sample varied moderately as a function of level of Outness outside of the study, suggesting that a participant's outness may only moderately account for some of the variance. This suggests that the interaction between Acceptance Condition (Positive- Accepting attitudes versus. Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) on Ego depletion (moves) is not significantly affected by outness in everyday life (See Figure 5: Analysis of Covariance: Outness).

Table 10. Tests of Between-Subjects Effects Ego Depletion Moves with Outness as a Covariate.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Outness	996.86	1	996.86	1.38	.24	.01
Conceal/ Disclose Condition	3083.29	2	1541.64	2.14	.12	.03
Acceptance Condition	10.33	1	10.33	.01	.91	.00
Interaction	5277.53	2	2638.76	3.66	.028	.05
Error	98647.69	137	720.06			
Total	267268.00	144				
Corrected Total	107134.64	143				

a. R Squared = .079 (Adjusted R Squared = .039)



Covariates appearing in the model are evaluated at the following values: Outness = 4.0928

Figure 5. Analysis of Covariance: Outness.

3a: Individuals who experience higher ego depletion will report lower overall well-being on the Satisfaction With Life Scale than those with lower ego depletion.

Hypothesis 3a was also examined using Pearson correlation. This correlation was not significant, as reported in Table 13. These results indicate that there was not a significant relationship with performance on the Ego Depletion task (moves) and Satisfaction with Life Scale (SWLS), $r(144) = .01, p = .94$.

Hypothesis 4

- a. Individuals who conceal sexual orientation will experience higher rates of generalized anxiety than those who do not, as measured by the GAD-7.
- b. Individuals who conceal their sexual orientation from individuals they believe have negative views of their sexual orientation will experience higher

generalized anxiety than two other groups of individuals: (a) those who conceal their sexual orientation from those they believe have positive views of their sexual orientation and (b) those who disclose their sexual orientation.

Table 11. Tests of Between-Subjects Effects- Generalized Anxiety.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Conceal/ Disclose Condition	2.94	2	1.47	.05	.951	.00
Acceptance Condition	29.46	1	29.46	1.01	.316	.00
Interaction	5.15	2	2.58	.08	.915	.00
Error	4009.92	138	29.06			
Total	37844.00	144				
Corrected Total	4049.31	143				

a. R Squared = .010 (Adjusted R Squared = -.026)

To test Hypothesis 4, a 2 x 3 ANOVA was conducted, Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) versus (Choice Disclose versus Choice Conceal versus Instructed Conceal) with generalized anxiety as the outcome variable (See Table 11 above). Because the sample violated Levene's test of homogeneity of variances, homogenous variance was not assumed. The results indicated a nonsignificant effect for Acceptance Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) $F(2,138) = 1.01, p = .32, \text{partial eta squared} = .00$. The results indicated a nonsignificant effect of Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) $F(2,38) = .05, p = .95, \text{partial eta squared} = .00$ (See Table 11). The results of the 2 x 3 ANOVA indicated that there was

nonsignificant interaction between Acceptance Condition (Positive- Accepting attitude versus Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) on generalized anxiety, $F(5,138) = .08, p = .91$, partial eta squared = .00. (See Figure 6- Test of Between Subjects- Generalized Anxiety). Descriptive statistics of different levels of each condition are included in Table 12.

Table 12. Descriptive Statistics Generalized Anxiety.

Conceal Disclose Condition	Acceptance Condition	Mean	Std. Deviation	N
Choice Disclose	Positive	21.75	7.83	16
	Negative	32.41	17.61	31
	Total	28.79	15.76	47
Choice Conceal	Positive	29.19	10.71	21
	Negative	34.48	20.01	21
	Total	31.83	16.07	42
Instructed Conceal	Positive	46.85	51.93	26
	Negative	30.83	20.45	29
	Total	38.40	39.12	55
Total	Positive	34.59	35.42	63
	Negative	32.38	19.10	81
	Total	33.35	27.37	144

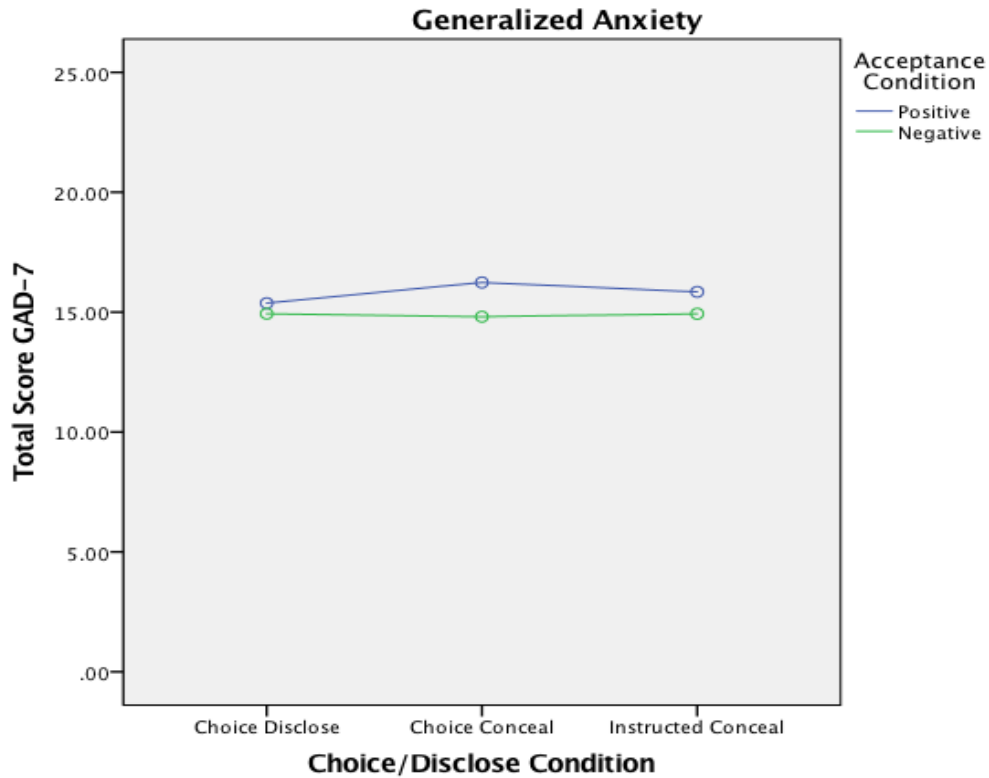


Figure 6. Tests of Between-Subjects Effects – Generalized Anxiety.

Hypothesis 5

Hypothesis 5a. Higher scores of “outness” will be correlated with higher scores of well-being.

According to Pearson correlations in Table 13, this hypothesis was not supported. There was not a significant correlation between outness and well-being as measured by the SWLS $r(144) = .026, p = .76$.

Hypothesis 5b. Lower scores of “outness” will be correlated with higher scores of Generalized Anxiety.

According to the bivariate correlation used to explore this hypothesis, there was a negative correlation between “outness” and generalized anxiety. This negative correlation indicates that when one score increases, the other score decreases. This correlation

indicates that individuals who reported being less “out” reported higher experiences of generalized anxiety and vice versa (individuals who reported being more out reported lower scores of generalized anxiety), $r(144) = .20, p = .02$. See Table 13.

Table 13. Participant Reports of Outness, Well-being, Anxiety, and Ego Depletion: Correlations (N = 144).

Variables	1	2	3	α
	–			.88
1. Outness Inventory				
2. Satisfaction with Life Scale	.03	–		.90
3. GAD-7	-.20*	-.25**	–	.90
4. Moves (Tower of Hanoi)	-.10	.01	-.07	

* $P < .05$. ** $p < .01$.

Summary of Findings

When testing the hypotheses, a 2x3 design was utilized with Acceptance Condition (Positive- Accepting attitudes versus. Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal). Ego depletion (moves) and generalized anxiety were tested as outcome variables, and outness was used as a covariate.

Results of a 2 x 3 ANOVA indicated nonsignificant main effects for Acceptance Condition (Positive- Accepting attitudes versus. Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) on Ego depletion (moves). Overall, there was a significant interaction between Acceptance Condition (Positive- Accepting versus Negative- Non-Accepting) and Choice/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal). The planned comparisons indicated a significant difference between the

Choice Disclose group and the Instructed Conceal group on performance on the Tower of Hanoi. Specifically, those who were in the Instructed Conceal condition took the highest number of moves to complete the Tower of Hanoi Task, indicating higher ego depletion, while those in the Choice Disclose condition completed the task with the least number of moves, indicating lower ego depletion. A 2 x 3 ANOVA indicated no significant Main Effects or significant interaction between Acceptance Condition (Positive- Accepting attitudes versus. Negative- Non-Accepting attitudes) and Conceal/Disclose Condition (Choice Disclose versus Choice Conceal versus Instructed Conceal) on generalized anxiety.

Congruent with previous research, there was a negative correlation between subjective well-being and generalized anxiety, suggesting that higher experiences of generalized anxiety may be related to lower reports of well-being. There was also a negative correlation between outness and anxiety. The current study results found that participants who reported higher levels of outness reported lower levels of anxiety.

CHAPTER V

DISCUSSION

The final chapter will expand upon interpretations of the quantitative findings provided in Chapter IV, and synthesize the data's relevance to the current body research. The context of the participants as well as the recruiting efforts will be discussed, followed by each hypothesis. Next, the findings will be reviewed in terms of their implication for clinical practice, prevention, and intervention. Finally, any limitations of the study will be discussed, and recommendations for future research will be explored.

The purpose of the current study was to examine the experience of concealing and disclosing LGBQ identity. A primary research question asked how concealing one's LGBQ identity when exposed to anti-LGBQ messages compared to LGBQ identity concealment in a more favorable situation may differ in terms of ego depletion. Next, to explore the validity of previous research, the effect of instructing versus not instructing participants to conceal LGBQ identity was also analyzed. Finally, the relationships between variable such as outness, subjective well-being, and generalized anxiety with ego depletion were also explored in hopes of better understanding the impact of ego depletion on an individual.

Participants and Recruitment

The current study analyzed a sample that was predominantly recruited from Amazon Mechanical Turk (Mturk), an online recruitment program that pays participants

for each Human Intelligence Task (HIT) completed. While the current study was also posted on various social media sites, and sent through professional and community listservs, approximately 80% of the participants were recruited through Mturk. The advantages and disadvantages of having a sample mostly composed of Mturk workers is likely reflected in both strengths and limitations in the data.

Mturk data collection occurred in two stages. The first stage took place in Fall 2015, during which participants were compensated \$0.15. While over 500 LGBTQ participants started the survey, after thorough data cleaning was performed, it was determined that only 35 participants had completed it fully. For example, approximately 100 participants did not complete the Tower of Hanoi Task. This may be related to having to leave the survey site and complete the task at an external site. Participants were given explicit instructions that they needed to copy and paste the link to the external site, and that they would need to return back to the survey to be compensated. Most participants did not complete both the Tower of Hanoi task and the remaining survey. In addition, there were questions throughout the survey utilized to confirm that participants were paying attention and not simply responding at random. Participants were instructed to leave certain questions blank; however, 52 participants did not follow these instructions. Finally, many participants did not fully participate in the sexual fantasy-writing task. For example, participants copy and pasted the sexual fantasies provided to them, filled in only one word, or wrote vague, brief phrases such as “sex is nice.” After consultation, these cases were removed due to questionable validity; however, several participants were compensated for incomplete work due to oversights in the screening process. It is possible that Mturk workers may have a quicker processing speed than the

general public, enhancing their financial benefit from participating in surveys. Facing financial pressure to complete their work very quickly, however, may have contributed to their inattention to the directions, compared to the thoroughness of research participants in other types of settings. Relatedly, the amount of compensation for this particular study may not have been enough to yield high quality data for the tasks.

The second stage of Mturk data collection occurred in March 2016. During this phase, the compensation was increased to \$1.00, and a new announcement was published. This resulted in an increase in sample size by 100 valid responses. In addition, the data screening process intensified. During this process, only 10 compensated participants were screened out. They were compensated since it appeared that they had fully completed the survey however, through closer inspection of their sexual fantasies, their answers turned out to be invalid for the same reasons previously described from the first batch of responses.

Another factor to consider is the predominant sexual identity of the participants. The majority of the participants identified as bisexual. This is not typical in literature regarding LGBTQ individuals. Bisexual participants (as with other sexual identities), were assigned to one of five conditions: (a) positive (accepting) disclose (b) positive (accepting) choice conceal, (c) positive (accepting) disclose instructed conceal (d) negative (non-accepting) choice disclose, (e) negative (non-accepting) choice conceal, and (e) negative (non-accepting) instructed conceal. If the gender of their most recent sexual partner was different than their own, or other-gender, the act of disclosing may not be ego depleting. Participants may have experienced stigma related to their sexual identity status, but may have not felt distressed by sharing their most recent partner if it

would not necessarily identify them as LGBTQ (Herek, 2015). Even concealing the gender of an other-gender partner might not be ego depleting. In contrast, being asked to disclose the gender of a same-gender partner could be ego depleting for a bisexual person. That is, it is possible that individuals who identify as bisexual were choosing all-gender or other-gender pronouns, and may not have been concealing, per se, but genuinely sharing a piece of their sexual history where they engaged in sex or had a fantasy of an other gender partner (Belmonte & Holmes, 2014; Schrimshaw, Siegel, Downing Jr., and Parsons, 2013). Therefore, the current study may not have accounted for the level of distress or complexity of concealing/disclosing by bisexual and other multisexual participants.

Previous research utilizing Mturk for research on LGBTQ populations has reported higher rates of bisexual-identified participants than expected (Zou, Anderson, & Biosnich, 2013). In addition, previous research comparing bisexual participants to lesbian/gay participants from both the general population and Mturk, found that bisexual individuals reported lower levels of being out. In addition, previous research found that bisexual individuals reported greater symptoms of depression and anxiety compared to lesbian and gay participants. Findings suggest that concealing and disclosing sexual orientation may be separate stressors (Legate, Ryan & Weinsten, 2012; Schrimshaw, Siegel, Downing Jr., & Parsons, 2013). The current study's findings suggest that the complex and unique experiences of bisexual individuals need to be considered when conceptualizing the experiences of ego depletion. While bisexual individuals may experience some privilege by not needing to disclose, previous literature suggests that concealing and disclosing can be uniquely distressing for this population.

Taking this information into account, it could be concluded that the process used to group participants into conceal versus disclose may not have been appropriate for a bisexual sample. Must a bisexual person always disclose sexual attraction to men and women in order to be genuine with others about their sexual orientation? In addition, how do we account for private versus public experiences of their sexual identity? Bisexual participants may have felt that they did not need to share their attraction to same gender people when sharing a sexual experience. In sharing a male-female sexual fantasy, they may have experienced less distress than other sexual minority persons who shared a same-sex fantasy. In summary, the way *conceal* and *disclose* were operationalized in this and other ego depletion studies on sexual minorities may be quite problematic for a bisexual sample, and possibly for sexually questioning samples as well.

It should also be noted that the effectiveness of the sexual fantasy and scenario in communicating accepting versus non-accepting attitudes may have been low. A manipulation check was tested using t-test comparisons of participants' responses regarding the perceived openness to sexual diversity of their partners. An unexpectedly high number of participants did not pick up on the unaccepting attitudes of the confederate partner, or perhaps felt they could not acknowledge that their partner was sharing negative (non-accepting) attitudes. Previous research has noted that members of minority groups do not always necessarily comment on microaggressions or missteps of members of majority groups due to social desirability, as has been most notably studied regarding race and the responses of racial/ethnic minorities to White individuals (D'Angelo, 2011). This phenomenon likely occurs between other minority groups and majority groups, including sexual minorities (D'Angelo, 2011). We are unable to

determine if social desirability is a specific factor that contributed to the nonsignificant differences. In a replication study, it is recommended that the researchers explore alternative ways of communicating accepting versus non-accepting attitudes.

Hypothesis Testing

The following section will explore the hypotheses of the current study and elaborate on the statistical findings reported in Chapter IV. The first hypothesis sought to determine if individuals who conceal their sexual orientation experience more ego depletion than those who disclose. The hypothesis was further delineated by surmising that those who conceal from individuals they believe have negative views of their sexual orientation will experience higher ego depletion than (a) those who conceal from those they believe have positive views of their sexual orientation and (b) those who disclose their sexual orientation, with ego depletion measured by number of moves used on the Tower of Hanoi Task. A 2 x 3 ANOVA did reveal a significant interaction. While significant, these findings are somewhat inconsistent with past research, which found that when marginalized groups are exposed to negative attitudes (stereotype threat), they experience higher ego depletion (Inzlicht & Kang, 2010). In the current study, participants who were instructed to conceal and were in the positive (accepting) condition experienced the highest level of ego depletion.

These unexpected findings may be related to the theory of stereotype threat. Stereotype threat refers to the fears of confirming a negative stereotype about one's identity group (Steele & Aronson, 1993). The current study elaborated on the extant body of research regarding stereotype threat by exploring how exposing individuals to different levels of acceptance (positive/negative) around LGBTQ identity could affect subsequent

performance on an ego depletion task. Specifically, the study design enabled exploration of how different levels of acceptance lead to ego depletion. Previous research had not compared the experiences of concealing/disclosing to individuals with positive or negative attitudes towards a stigmatized identity. It appears that individuals who could not disclose (i.e., those instructed to conceal) experienced higher ego depletion when they were in a situation where: (a) they could not come out and (b) the other person was accepting. This experience of concealing stigmatized sexual and gender identity from accepting persons can be seen throughout LGBTQ experience. For example, LGBTQ youth who are told by their families not to tell anyone about their sexual identity, or people living in a systemically unaccepting LGBTQ place (e.g., they do not have anti-discrimination protection in their state or city) may nevertheless experience some positive messages about their sexual identity, and yet, feel forced to conceal it. For example, they may interact with people who are accepting, even when living in a U.S. state that does not have laws protecting LGBTQ individuals and may not be able to disclose. The current study suggests that these experiences are ego depleting. In fact, being instructed to conceal sexual identity from a person perceived as accepting was more ego depleting than choice conceal and choice disclosure to both accepting and non-accepting persons, as well as instructed concealing to a non-accepting person.

Moving on to the second hypothesis, a goal of the study was to explore previous findings, which observed that those instructed to conceal their sexual orientation would experience higher ego depletion than those who were not. Planned comparisons were used to explore this response. These findings may suggest that when individuals are instructed to conceal to those that they perceive as being accepting, they experience

higher ego depletion, due to the absence of choice surrounding the disclosure. These results of the current study may be more nuanced, and lead to implications that are not currently represented in existent literature. Previous research by Critcher & Ferguson (2014) did not explore the implications of acceptance, and previous literature exploring stereotype threat (Inzlicht & Kang, 2012) did not include a positive (acceptance) condition in their studies. The findings of the current study were consistent with previous research, which that found concealing stigmatized sexual identity when instructed to restrict pronoun use increased ego depletion (Critcher & Ferguson, 2014).

The second part of Hypothesis 2 sought to explore the interactions between concealing and disclosing to confederate partners demonstrating accepting versus non-accepting attitudes. Specifically, individuals who were instructed to conceal from individuals they believed have negative views of their sexual orientation would experience higher ego depletion than those instructed to conceal their sexual orientation from those they believe have positive views of their sexual orientation. The findings were insignificant. Previous research had not explored this specific interaction, but given the previous findings regarding the ego depletion effect of stereotype threat and instructed sexual identity concealment (Inzlicht & King, 2006; John et al., 2008), this may be an area that needs future exploration. Specifically, there may be issues related to participants not attending to tasks in the study, such as if their partner was accepting or non-accepting, which was evident by disappointing findings of the manipulation check.

Hypothesis 3 explored the relationship between outness and the dependent variable, ego depletion (number of moves). The findings from these results showed that outness accounted for about 10% of the variance, suggesting that the interaction between

Condition (Positive- Accepting attitudes versus Negative- Non-Accepting attitudes) and Conceal/Disclose (Choice Disclose versus Choice Conceal versus Instructed Conceal) is moderately explained by individuals' level of outness in their everyday life. This effect of the covariate on the interaction is congruent with previous research which has suggested that experiences of disclosing a stigmatized identity, specifically one's first disclosure experience, may have a significant impact on how a person perceives disclosing in future situations (Quinn & Chaudoir, 2010). This relationship is contrary to the hypothesis that outness would not impact ego depletion; however, the outness scores in the current study tend to be positively skewed. This finding may be more of a function of the sample's relatively low reported outness, and it still may be reasonable to expect that outness might not have an impact in a population with a more normal distribution of outness.

Hypothesis 3a hypothesized that individuals who experience higher ego depletion would report lower overall well-being on the Satisfaction With Life Scale than those with lower ego depletion. The results were not significant. Previous research has not used an overall measure of subjective well-being in discussing the relationship between well-being and ego depletion. Instead, previous research had noted that ego depletion affects emotional regulation, choice, and prosocial behaviors which may be associated with well-being (Muraveen & Baumeister, 2004); however, it appears that an overall satisfaction with life may not be affected by a one-time ego depletion task. This may be related to the online format of the study. Participants interacted with a partner that they would never meet in real life, and the threat of a partner may be negligible.

Hypothesis 4 explored the relationship between generalized anxiety and concealing sexual orientation identity from a confederate partner whom they perceive has

either negative or positive attitudes. Again the findings were not significant. Previous research has not explored this particular relationship; however, previous research around disclosure to an individual with positive versus negative attitudes found that individuals who imagine disclosing to an individual with negative attitudes experiences higher anxiety (Legate, Ryan, & Weinstein, 2012). Perhaps the anonymity that comes with online disclosure and the factor of compensation minimized distress and/or anxiety experienced in the current study.

Hypotheses 5 explored the correlations between ego depletion, outness, subjective well-being, and anxiety. According to a bivariate correlation, there was not a significant association between ego depletion and the other variables of interest. The relationship between outness, subjective well-being, and anxiety was also explored in Hypothesis 5. It was predicted that higher levels of outness would be positively correlated with subjective-well-being. However, there was no significant correlation between these variables. The sample's overall scores of outness and subjective well-being were lower than the scores reported in previous standardization studies. Perhaps the relationship between these two variables was nonsignificant because of the saliency of identity to individuals' lives, or perhaps there may be an indirect relationship between outness and satisfaction with life and further exploration in to variables such as social support would help researchers understand this relationships more.

It was predicted that lower scores of outness would be negatively correlated with generalized anxiety. This hypothesis was supported, which is congruent with previous literature that has found that the less out an individual is about their sexual orientation ,the more at risk they are for experiencing negative mental health effects, such as

increased anxiety (Ford, 2003; Thompson & Johnston, 2003; Jordan & Deluty 2009; Waldner & Magruder, 1999).

A negative correlation between generalized anxiety and subjective well-being was discovered, in that higher scores of generalized anxiety are related to lower scores of subjective well-being. These findings are congruent with previous research (Hunt, Slade, & Andrews, 2004) and suggest that the participants in the study who were experiencing more anxiety also felt less satisfied with life overall. These findings provide insight into implications for practice and research.

Implications for practice

A primary implication of the current study may best be explained by looking at the results through a Minority Stress Theory (Meyer, 2003) lens. Meyer (2003) proposed that minority stress is stress that goes beyond the general stress experienced by everyone, because of the unique kind of stressors that minority individuals are exposed to. Experiences of discrimination and internalization of discrimination, whether overt or covert, add an extra layer of stress to individuals of minority identity status. This concept is applicable to individuals who identify as LGBTQ, since they will experience unique stress due to facets of discrimination, internalized heterosexism, and identity formation. Meyer highlights how this model takes prejudice, stress, and coping into consideration. Minority stress process will include experiencing discrimination, fear of rejection, concealing aspects of self, internalized heterosexism, and negative coping skills. These experiences may have negative impacts on health and well-being. However, aspects of coming out, specifically to someone who is perceived as accepting, may serve as a protective factor and reduce stress.

Meyer (2003) suggests that coming out is a form of stress due to the psychological cognitive processes utilized when disclosing versus concealing. The impact of coming out on identity development and well-being can be significant. Avoidance of coming out has been correlated with higher anxiety, depression, suicidality, substance abuse, and risky sexual behaviors. Coming out has been related to more positive mental health, higher self-esteem, and increased social support (Ford, 2003; Thompson & Johnston, 2003; Jordan & Deluty 2009; Waldner & Magruder, 1999). Therefore, avoiding coming out may have many negative effects on an individual and be a large source of stress.

Currently, little is known about the direct effect that concealing or disclosing stigmatized sexual identity has on cognitive and mental resources. Previous literature does suggest that there is a relationship between social support and coping strategies with minority stress and mental health. There has been mixed research around whether this relationship was a mediated or moderated relationship. Szymanski and Owens (2008) suggested that coping skills and social support moderated the relationship between minority stress and health, while others suggested that coping and social support exist independently from stress, and minimize the effect of stress on mental health (Meyers, 2003).

The previous research suggests that social support, specifically around stigmatized sexual orientation, may have a significant effect on mental health. As discussed, this current study sought to explore how ego depletion is experienced during the process of navigating contextual factors related to concealment/disclosure. The current study sought to test a very small window of accepting versus nonaccepting

attitudes to begin to further understand the impact of others' attitudes. While the specific relationship was not significant in this current study, there is still theoretical backing to suggest that there is a relationship between accepting versus non-accepting support systems and an individual's mental health, and specifically, that individuals who identify as LGBTQ may be interpreting behaviors and phrases to decide if an individual is a "safe" person, in regards to sexual identity (Herek, 2008).

This navigating of safe environments by LGBTQ individuals has major implications for both prevention and intervention efforts for this population (Fassinger & Arseneau, 2007). One potential direction for clinicians is to increase their cultural competency and self-awareness around their work with LGBTQ clients (Fassinger, 2008). To start, clinicians need to develop or adopt more culturally sensitive demographic and background questionnaires (e.g., including gender inclusive choices for identity, including a variety of options for sexual orientation, or leaving these questions as fill in the blank). Next, clinicians are advised to be aware of what they leave on display in their office and inside their office door. This is relevant for both straight ally-identified counselors and LGBTQ-identified counselors. These displays can include ally identifying stickers or posters or other rainbow objects (see, for example, www.umd.edu/rainbowterrapinnetwork). Within the clinician's office, it would be important to display books that represent queer/trans individuals and queer/trans mental health. LGBTQ individuals may struggle with (a) finding an LGBTQ or ally clinician, and (b) in the case of questioning, decide whether and how to come out to a mental health provider. It may be important to consider including displays of queer culture, such as specific books, flags, musical interests, and cultural figures. By displaying markers of acceptance, it may

increase an individual's comfort when disclosing sexual identity and/or discussing personal information related to sexual identity.

Secondly, it would be important to incorporate aspects of LGBTQ Affirmative therapy into one's clinical practice (McGeorge and Stone Carlson, 2014), using gender inclusive language when asking about relationships, sexual history, and sexual identity in general. These displays and behaviors help communicate acceptance, thus increasing the likelihood that clients will view the clinician's office as a safe space to come out. The concepts from this study are also relevant to prevention and outreach related to mental health. For example, interventions can provide psychoeducation for dealing with microaggressions and stereotype threat. This can include developing supporting messaging around positive aspects of LGBTQ identity that is displayed in an area, or working with the community to provide support. Outreach would involve educating the LGBTQ community on what these terms means, and how to be aware of them. Outreach programming can be targeted towards educating LGBTQ youths on the effects of support and acceptance on the well-being of LGBTQ individuals (Herek, Gillis, & Cagan, 2015). Previous research has provided evidence which shows that when families and close social supports send accepting messages to LGBTQ individuals, they are less likely to experience negative effects on mental health. Conversely, there is strong evidence which suggests that individuals who do not have accepting families or social supports are more likely to experience negative effects on well-being, increased substance use, risky sexual behaviors, and increased symptoms related to anxiety and depression. These findings support the importance of sending positive messages to and about LGBTQ individuals (McCabe, Bostwick, Hughes, West, & Boyd, 2010; Cochran, Sullivan, & Mays, 2003).

Therapeutic work with bisexual, multisexual, queer, and questioning individuals is also an area that has been underrepresented in the psychological literature. The literature available does highlight the different sociocultural contexts that bisexual, multisexual, queer, and questioning individuals experience. One example is the navigation of heteronormative experiences while simultaneously experiencing invisibility of their sexual identity. Such experiences exemplify the unique processes of concealment and disclosure that bisexual, multisexual, queer, and questioning individuals continually face (Fox, 2006). These suggestions are limited, in that they are referencing therapeutic work with bisexual men and women; therefore, even these suggestions may not truly apply to the sociocultural context of other multisexual or diverse gender identities.

Regarding individuals who identify as bisexual, previous research has supported the theoretical concept of the existence of unique factors related to mental health. The findings of Schrimshaw, Siegel, Downing Jr., and Parsons (2013) suggested that lower levels of mental health were documented among bisexual men relative to gay men. This may be attributable to the greater likelihood of bisexual men to conceal sexual identity. The results of their study also argued that concealment and disclosure are unique independent variables rather than dichotomies of the same variable. This suggests that variations of concealment and disclosing in different contexts may affect mental health outcomes. These findings suggested that concealing sexual identity may be a stressor in the lives of bisexual men, and, that therapeutic work with bisexual men may wish to focus on addressing the men's own perceived need for concealment. Similarly, Belmonte and Holmes (2016) found that bisexual women were significantly less out than lesbian women, and reported a lower quality of life. Bisexual women had significantly higher

internalized homonegativity, more desire to keep personal information private, expressed more confusion about identity, more fear about not being in control of their disclosure, and more negative feelings about identity. The findings from both of these studies are congruent with the significant negative correlation found between outness and anxiety, suggesting the need for psychoeducation, especially to bisexual/multisexual individuals, about the negative mental health effects of not being out. While literature supports the benefits of being more out, it is essential to note that varying contexts need to be taken into account when choosing to disclose sexual identity, including aspects such as family culture, socioeconomic status, and religious support. Despite the many positive aspects of coming out, sexual minority identity disclosure can result in negative consequences in certain situations. For example, an individual risks being banished from their home or cultural community, fired from their job, or financially cut off from their family as a result coming out.

Limitations

There was a paucity of significant findings in this study; however, there were several limitations that may have contributed to this outcome. Firstly, data recruitment proved to be a difficult process. The majority of data was collected from Mturk, which may have led to invalid data. Firstly, these participants may have been motivated by monetary reward and not genuinely invested in the outcome of the study. The geographical and demographic information of the sample are also questionable (Holden, 2012). While settings are set to limit to participants who are geographically from the United States, Holden (2012) suggests that Mturk workers can manipulate these parameters. In the current study, several participants reported that they were living

internationally, and some reported that their country of origin was outside the United States. Different nations have different levels of LGBTQ acceptance compared to the US. In addition, there could be challenges with the erotic writing task if the participant's primary language is not English. There may also be cultural factors that affect willingness to discuss sex, thereby reducing participants' written output.

A second important factor that likely contributed to a limited number of significant findings was the online setting. Since the study was completed online, there may have been a degree of anonymity that minimized any distress that disclosing sexual orientation may have caused due to its relatively low risk. The current study's hypotheses were designed to be explored within the context of feeling some distress in the non-accepting condition in order for the experiment to adequately replicate the distress continually felt by LGBTQ persons when faced with a conceal/disclose situation or decision point.

Directors of university-based LGBTQ centers were consulted about recruitment difficulties. They provided feedback around hearing frustration of students who have participated in studies they did not truly benefit from. Similarly, directors of community-based LGBTQ centers also suggested providing monetary donations in order to recruit within their centers. This prospective population could not be accessed due to a lack of funding for this study.

Thirdly, the quality of the data due to the participants' attention level is called to question. This was highlighted by non-significant differences between the Acceptance Conditions (Positive versus Non-Accepting) groups on the manipulation check questions. The statements made by the partner "should" have given a clear indication of their level

of acceptance, or non-acceptance. For example, the non-accepting condition specifically states how they believe same gender sexual encounters “are disgusting.” Participants rushing through the study and not attending carefully to the partner’s written fantasy could have led to a significant portion of invalid responses.

Fourthly, a major issue was the fact that the Tower of Hanoi task was housed in an outside website. Participants were instructed to copy and paste the link to the survey in a new tab, and to return to the survey when finished. There were over 100 participants who completed the Tower of Hanoi task but did not return to complete the survey. There were also over approximately 80 participants who completed the whole survey, but did not complete the Tower of Hanoi task. Attempts were made through the course of the study, however, to embed the Tower of Hanoi Task into the Qualtrics survey, so participants did not have to leave the survey to complete it. Unfortunately, this would have required writing programming codes; while the primary investigator sought out consultation around writing the required code, it was not successful.

There may have also been other variables that could have mediated the relationship between concealment/disclosure and ego depletion. Quinn and Chaudoir (2009) suggested that there are four factors that may impact how concealed stigmatized identity affects the individual. These factors include anticipated stigma, centrality, salience, and cultural stigma. Within this study, saliency (importance of identity) and centrality (how central to identity) were not truly assessed or considered. In addition, considering that the majority of the sample identified as bisexual, there may be unique factors related to centrality and saliency for bisexual individuals that were not considered.

Recommendations for Future Research

The current study would best be replicated by using a sample of individuals recruited from diverse domains, such as campus centers, e-mail listservs, and community groups. Specifically, such recruitment might increase the investment in the study and motivation for participation. Funding resources may be better spent on incentives for these recruitment processes, rather than paying M*Turk workers. In addition, this study may best be replicated as an in-person research study. Compared to the online interface of the current study, face-to-face interaction with a sexual minority individual who may or may not have access to sexual and gender minority communities may be more similar to the experience that LGBTQ individuals navigate on a daily basis. Specifically, it would simulate how LGBTQ individuals may constantly have to evaluate whether or not to share their sexual identity with a new person, whether it be a potential friend, or a new professor, employer, or colleague. While this might simulate more distress, an in-person approach also has limitations, including labor resources and LGBTQ participant recruitment.

Next, it may be beneficial to expand on the primary hypothesis by attempting to create a model to understand the relationships, specifically including aspects of the Minority Stress Model (Meyer, 2003), and how ego depletion might relate to it. Specifically, this model would include variables about saliency and centrality of stigmatized sexual identity, and mediate and moderate concealing and disclosing (Quinn and Chaudoir, 2009). In addition, the next steps would include exploring differences among racial groups, gender identities, religious groups, and possibly socioeconomic status.

Next, it would be extremely important to explore how these variables relate to clinical relationships. Currently, the majority of mental health centers include a demographic questionnaire that asks about sexual identity; however, it may be important to consider how clinicians are communicating acceptance to LGBTQ clients. A proposed study would include blind pairing of clinicians and LGBTQ clients, and asking LGBTQ clients to rate how accepting they viewed their clinician and the factors they used to determine this. The clinician would not be provided demographic information to inform them that their client was a member of the LGBTQ community. It would then be important to follow-up and explore how client's ratings correlated to perceptions of working alliance and reduction of symptomology.

Conclusions

In order to address gaps in previous research, the current study sought to understand the effects of navigating disclosure of stigmatized sexual identity to accepting versus non-accepting individuals, and the effect of such navigation on cognitive resources, namely, ego depletion. Previous research has identified the many mental health concerns that affect the LGBTQ community, and sought to understand the effect that various stressors related to coming out, identity development, and experiences of oppression have on health. At the same time, it is important to understand the relationships between these variables and the reduction of cognitive resources that affect executive function, self-control, emotional regulation, and stress management.

This study sought to explore the relationship between navigating coming out and the context of the coming out (accepting versus non-accepting) and ego depletion. The current study provides support on the idea that the interaction between coming out and

acceptance by another person (positive versus negative attitudes) may be significant. The fact that relatively few of the study's hypotheses were supported may be explained by the several limitations highlighted above, especially the questionable quality of the data.

Findings from this study have nevertheless provided ideas for improvement in exploring the coming out/acceptance condition interaction relationship, specifically by exploring a model to assess the fit between acceptance and coming out and variables, including minority stress and the saliency and centrality of stigmatized sexual identity.

Recommendations for future research suggest a wealth of information that is still needed to better understand the impact that navigating disclosure and the attitudes of others have on LGBTQ individuals' cognitive resources. Ego depletion may be a main factor, but there still needs to be further conceptualization of how to understand ego depletion in the LGBTQ experience.

APPENDICES

APPENDIX A

E-MAIL FOR RECRUITMENT FOR LGBTQ CENTERS, LISTSERVS, AND STUDENT GROUPS

Hello!

My name is Nicole Giordano and I am a Graduate student in the Counseling Psychology Department at the University of North Dakota. I am currently collecting data for my dissertation regarding sexual health attitudes and behaviors and cognitive tasks. I am specifically recruiting individuals who identify as Lesbian, Gay, Bisexual, Queer, Questioning, or any other non-heterosexual sexual orientation. The study involves answering some questions, a brief task, and brief questionnaire. Some questions in this study may be sensitive in nature regarding your sexual history and sexual identity. You are not obligated to participate and may terminate your participation at any time. Please feel free to forward this along to anyone else you think might be interested! Thank you! This research study has been approved by the Institutional Review Board at The University of North Dakota (proposal # indicated here).

(Insert link)

Sincerely,

Nicole Giordano M.S.(nicole.giordano@my.und.edu)
Counseling Psychology P.hD Graduate Student
University of North Dakota

Supervisor: Dr. David Whitcomb (david.whitcomb@und.edu)

APPENDIX B

FACEBOOK RECRUITMENT

Facebook Event and Ad:

Event: Sexual Health Attitudes and Cognitive Tasks of LGBTQ

More Info:

My name is Nicole Giordano and I am a Graduate student in the Counseling Psychology Department at the University of North Dakota I am currently collecting data for my dissertation regarding sexual health attitudes and behaviors and cognitive tasks. I am specifically recruiting individuals who identify as Lesbian, Gay, Bisexual, Queer, Questioning, or any other non-heterosexual sexual orientation. The study involves answering some questions, a brief task, and brief questionnaire. Some questions in this study may be sensitive in nature regarding your sexual history and sexual identity. You are not obligated to participate and may terminate your participation at any time. Please feel free to forward this along to anyone else you think might be interested! Thank you! This research study has been approved by the Institutional Review Board at The University of North Dakota (proposal # indicated here).

(Insert link)

Sincerely,

Nicole Giordano M.S.(nicole.giordano@my.und.edu)
Counseling Psychology P.hD Graduate Student
University of North Dakota

Supervisor: Dr. David Whitcomb (david.whitcomb @.und.edu)

P.S. Feel free to forward the link to others who might be interested!

APPENDIX C

INFORMED CONSENT REQUIRED BY UND

The University of North Dakota Consent to Participate in Research

TITLE: *[Sexual Health and Cognitive Tasks]*

PROJECT DIRECTOR: *[Nicole Giordano MS]*

DEPARTMENT: *[Counseling Psychology]*

STATEMENT OF RESEARCH

A person who is to participate in the research must give his or her informed consent to such participation. This consent must be based on an understanding of the nature and risks of the research. This document provides information that is important for this understanding. Research projects include only subjects who choose to take part. Please take your time in making your decision as to whether to participate. If you have questions at any time, please ask.

WHAT IS THE PURPOSE OF THIS STUDY?

You are invited to be in a research study about the impact of sexual health on cognitive tasks because you have volunteered and are agreeing to participate.

The purpose of this research study is to understand the impact of discussing sexual health and the impact on various tasks that are psychological and cognitive.

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 500 people will take part in this study online

HOW LONG WILL I BE IN THIS STUDY?

Your participation in the study will last approximately 30-45 minutes. You will need to visit the link only one time.

WHAT WILL HAPPEN DURING THIS STUDY?

During the study you will fill out a variety of questionnaires regarding demographic information, sexual health, and well-being. For part of the study you will be partnered with someone who you will engage in a competitive task and then “chat” with over the Internet. All procedures will take place online. You will fill out some questionnaires, receive information about your partner, engage in a task, answer some more questionnaires, and then chat with your partner. At any point during the study, you may choose to discontinue your participation.

WHAT ARE THE RISKS OF THE STUDY?

There are no known risks to this study beyond what an individual may experience in everyday life. However, you may experience some emotional distress or frustration that is sometimes experienced when participating in studies.

WHAT ARE THE BENEFITS OF THIS STUDY?

You *may not* benefit personally from being in this study. However, we hope that, in the future, other people might benefit from this study because it will inform us on the relationship between the variables being studied.

ALTERNATIVES TO PARTICIPATING IN THIS STUDY

Your participation is voluntary. There are no alternatives to participating in this study.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

There will not be any costs for participating in this study.

WILL I BE PAID FOR PARTICIPATING?

General Population: You *will not be paid for participating in this study.*

AmazonTurk Round 1: \$.15

AmazonTurk Round 2: \$1.00

WHO IS FUNDING THE STUDY?

There is not funding for this study.

CONFIDENTIALITY

The records of this study will be kept private to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by Government agencies, the UND Research Development and Compliance office, and the University of North Dakota Institutional Review Board.

Any information that is obtained in this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. You should know, however, that there are some circumstances in which we may have to show your information to other people. For example the law may require us to show your information to a court or to tell authorities if we believe you have abused a child, or you pose a danger to yourself or someone else. Confidentiality will be maintained by means of storing results in a password protected computer file.

If we write a report or article about this study, we will describe the study results in a summarized manner so that you cannot be identified.

IS THIS STUDY VOLUNTARY?

Your participation is voluntary. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. Your decision whether or not to participate will not affect your current or future relations with the University of North Dakota.

CONTACTS AND QUESTIONS?

The researchers conducting this study are Nicole Giordano MS, and her supervisor Dr. David Whitcomb. If you later have questions, concerns, or complaints about the research please contact Nicole Giordano at nicole.giordano@my.und.edu or her supervisor Dr. David Whitcomb at david.whitcomb@und.edu

If you have questions regarding your rights as a research subject, you may contact The University of North Dakota Institutional Review Board at **(701) 777-4279**.

You may also call this number about any problems, complaints, or concerns you have about this research study. You may also call this number if you cannot reach research staff, or you wish to talk with someone who is independent of the research team. General information about being a research subject can be found by clicking “Information for Research Participants” on the web site: <http://und.edu/research/resources/human-subjects/research-participants.cfm>

APPENDIX D

INSTRUCTIONS FOR PARTICIPANTS

Thank you for agreeing to participate in the current research. This study is designed to gather information about sexual health and cognitive abilities. During this study you will be randomly assigned to another participant who has already completed some questionnaires. You will engage in a competitive task against your partner and then have a video chat with your partner at the end of the study. You will be given instructions throughout the study about when information may be shared with your partner prior to your disclosure. In addition, you will be competing against a partner by completing a task and then have a video chat at the end of the study. You may end your participation at any time.

Please answer these demographic questions about yourself. This demographic information will not be shared with your partner.

Demographics

General Population: In order to compete in the competitive task you will have to provide a code. You will have to remember and enter this code in a few minutes. Please write it down if you may not remember it. Please use the first three letters of your birth month and the last three numbers of your phone number for your code.

AmazonTurk: In order to compete in the competitive task please enter your worker ID number. You will have to enter this code in a few minutes. Please write it down if you may not remember it. Please use the first three letters of your birth month and the last three numbers of your phone number for your code.

1. Please indicate your age.
2. What is your highest level of education?
 - no high school
 - some high school
 - high school graduate
 - some college
 - college degree
 - master's degree
 - doctoral degree

3. Are you currently enrolled?

___ YES ___ NO

4. Please indicate which best describes your ethnic/racial background. Check all that apply.

White/Caucasian

Black/African American

- Hispanic/Latin

Native American/American Indian

Asian/Pacific Islander

International student (non-citizen of USA)

- Multiracial / Other (please specify)

5. What is your current U.S. geographic location?

West (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming)

Northeast (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Vermont, Rhode Island)

Midwest (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin)

South (Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Tennessee, Texas, South Carolina, Virginia, West Virginia)

o Not Applicable

6. Which best describes your sex?

Male

Female

Intersex

7. Which best describes your gender identity ?

Male

Female

Transgender (FTM spectrum)

Transgender (MTF spectrum)

Transgender (non-binary)

Gender non-conforming

Genderqueer

Other ____

8. Which best describes how you self-identify in terms of sexual orientation?

Heterosexual

Bisexual

Pansexual

Polysexual

Gay

Lesbian

Queer

Questioning

Other_____

9. Approximate current *household* income: (Estimate if you do not know) o \$0 to \$10,000

- \$10,001 to \$30,000
- \$30,001 to \$60,000
- \$60,001 to \$90,000
- \$90,001 or more
- In order to compete in the competitive task you will have to provide a code. You will have to remember and enter this code in a few minutes. Please write it down if you may not remember it. Please use the first three letters of your birth month and the last three numbers of your phone number for your code.

APPENDIX E
OUTNESS INVENTORY

Instructions for participants: Please answer the following questions about yourself. Your responses will not be shared with your partner.

For each of the following questions, please select the response that best describes you.

- 1 = Definitely does NOT know about your sexual orientation status
- 2 = Might know about your sexual orientation status, but it is NEVER talked about
- 3 = Probably knows about your sexual orientation status, but it is NEVER talked about
- 4 = Probably knows about your sexual orientation status, but it is RARELY talked about
- 5 = Definitely knows about your sexual orientation status, but it is RARELY talked about
- 6 = Definitely knows about your sexual orientation status, and it is SOMETIMES talked about
- 7 = Definitely knows about your sexual orientation status, and it is OPENLY talked about
- N/A = Not applicable to your situation; there is no such person or group of people in your life

- 1. My Work Peers
- 2. Leaders of My Religious Community (e.g. church, temple)
- 3. Strangers, new acquaintances
- 4. Members of My Religious Community (e.g. church, temple)
- 5. Father
- 6. My OLD heterosexual friends

7. My Work Supervisor

8. Mother

9. Siblings (e.g. brother, sister)

10. My RECENT/NEW heterosexual friends

11. Extended family (e.g. relatives)

APPENDIX F

SATISFACTION WITH LIFE SCALE

Instructions for participants: Please answer the following questions about yourself. Your responses will not be shared with your partner.

Below are five statements with which you may agree or disagree. Using the 1-7 scale below (1= strongly disagree to 7= strongly agree), indicate your agreement with each item by selecting the appropriate number.

1. In most ways my life is close to my ideal.

2. The conditions of my life are excellent.

3. I am satisfied with life.

4. So far I have gotten the important things I want in life.

5. If I could live my life over, I would change almost nothing.

APPENDIX G

PARTNER INFORMATION

Instructions for Participants: Below is some information that your partner has asked to be shared with you. Please take a few minutes to read the information provided below.

Please remember that following your competitive task you will be asked to have a video chat with your partner.

Partner Information

Positive(Accepting)

Sexual Scenario: Sometimes I find myself fantasizing about what it would be like to have sex with another man/woman. I think I've been really curious since I had this experience at a bar a couple of months ago. I was out and having a good time and met this group of people. There was a girl/guy there about my age and a guy/girl about my age too. There was definitely a lot of flirting going on. Anyway, I was surprised how turned on I was getting as the guy would brush my arm. One time **he**/she even slipped a hand on my butt. I found myself getting playful back with both of them. Later that night I ended up going home with the girl/guy, but found myself wondering a few times what it would have been like to be with another guy/girl. I think next time I have the opportunity I might try it.

Sexual Fantasy: Something that really gets me going is thinking about having spontaneous sex with my girlfriend/boyfriend. I have this fantasy that we are out at dinner and lock eyes across the table. We start playing footsie under the table. As we

leave dinner we start to get frisky as we are walking to the car. I imagine by the time we get to the car that we are both so worked up that we have to have each other right there. I imagine us having sex in the car. Quickly and intensely.

Negative(Non-accepting)

Sexual Scenario: When I think about a sexual experience I would not be open to having it involve another man. I had a girlfriend/boyfriend once who was really interested in the idea of a threesome at some point in the future after we were married. At first I was okay with it. I thought it would be exciting to watch my girlfriend/boyfriend be touched by another man/woman. Then my girlfriend/boyfriend told me that she/he wanted me to touch him/her too. That felt completely wrong to me and was the biggest turn off. Our relationships didn't last long after that because my girlfriend/boyfriend couldn't understand why I was so turned off. I mean its just wrong. The idea of sexually touching another man/woman disgusts me.

Sexual Fantasy: Something that really gets me going is thinking about having spontaneous sex with my girlfriend/boyfriend. I have this fantasy that we are out at dinner and lock eyes across the table. We start playing footsie under the table. As we leave dinner we start to get frisky as we are walking to the car. I imagine by the time we get to the car that we are both so worked up that we have to have each other right there. I imagine us having sex in the car. Quickly and intensely.

**Please note that gendered pronouns were provided based on the participants reported gender identity.*

APPENDIX H

INSTRUCTIONS FOR EROTIC WRITING TASK

For the next part of the study we are asking you to write your own sexual fantasy or describe a recent sexual experience. These responses will be shared with your study partner. If you choose to write a sexual fantasy, please interpret “Sexual fantasies” to mean any erotic or sexually arousing mental imagery that a person has while awake.(Leitenberg & Henning, 1995).

Use the space below to write your sexual fantasy.

For the next part of the study we are asking you to write your own sexual fantasy or describe a recent sexual experience. These responses will be shared with your study partner. If you choose to write a sexual fantasy, please interpret “Sexual fantasies” to mean any erotic or sexually arousing mental imagery that a person has while awake.(Leitenberg & Henning, 1995).

We want you to not talk about one piece of information about yourself: your sexual orientation. In other words, when you refer to a sexual partner, real or hypothetical, you cannot use a word that would reveal the person’s gender. So, for example, instead of saying “This guy ...,” you could say, “This person...” Instead of saying, “One time my girlfriend and I ...,” you could say, “One time my significant other and I ...”Please do your best to act naturally, and make sure you do not slip up because basically it is no one else’s business but yours.

Use the space below to write your sexual fantasy.

APPENDIX I

TOWER OF HANOI

Participants will be taken to an outside website that is still under construction.

You will now engage in a task called the Tower of Hanoi on a separate website. Please open the link in a new tab and do not exit out of the current study if you wish to continue.

You will be asked to provide your Amazon Mechanical Worker ID again to begin that task. If your Worker ID number is not provided you will not be compensated for the study. Following the brief task you will briefly answer more questions (approximately 5 minutes) and then you will engage in a video chat with your partner. A link will be provided to participate in the video chat. If you do not return to the survey, you will not be compensated for your work.

Please copy and paste this link or open in a new tab:

<http://people.aero.und.edu/~sbrown/undtest/undhanoi/http://people.aero.und.edu/~sbrown/undtest/undhanoi/>

Instructions: Welcome to the Cognitive Test page. To begin please provide your participant code from the Qualtrics website you logged into for the survey. If you have any questions please contact the researcher.

Participant code

APPENDIX J

GENERALIZED ANXIETY-7 (GAD-7)

Instructions for participants: Please answer the following questions about yourself. Your responses will not be shared with your partner.

Over the last 2 weeks, how often have you been bothered by the following problems?

1. Feeling nervous, anxious, or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that it is hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid as if something awful was going to happen

APPENDIX K
MANIPULATION CHECK

Instructions to participants: Please answer these questions regarding your partner. These responses WILL NOT be shared with your partner.

On a scale of 1 to 5, with 1= completely, 2= somewhat, 3= neutral/n/a, 4= not really, and 5= not at all, please answer these questions about your partner.

1. How accepting do you believe your partner is?
2. How open- minded general do you believe your partner is?
3. How accepting of your sexual orientation do you believe your partner would be?
4. How comfortable were you sharing information about your sexuality with your partner?

APPENDIX L

DEBRIEFING

I want to thank you for your participation in this project. The primary purpose of this project is to examine the experiences of concealing sexual orientation identity on experiences of anxiety and well-being. Your chat partner was fictitious, and no one other than the researcher will actually see your responses, and you will not be competing in a competitive task. All responses are anonymous, and will be kept confidential. No identifying information will be able to be associated with participants' responses.

Important Reminders: If you have any questions regarding this study, please contact the principal investigator: Nicole GiGi Giordano, M.S. (nicole.giordano@my.und.edu) or her supervisor Dr. David Whitcomb (david.whitcomb@email.und.edu)

If completing the questionnaires caused you any concern, you may wish to contact one of the following resources.

GLBT National Help Center 1-888-843-4564

National Suicide Prevention Lifeline 1-800-273-TALK(8255)

Variety of Resources: <http://www.activeminds.org/issues-a-resources/mental-health-resources>
<http://www.activeminds.org/issues-a-resources/mental-health-resources>

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