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Exploring Protective Factors among Lesbians, Gays, and Bisexuals: A Framework for Psychological Well-Being and Relative Influence

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A dissertation
presented to
the faculty of the Department of Psychology
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Doctor of Philosophy in Psychology

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by
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August 2016

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Keywords: minority stress, psychological well-being, sexual minorities, protective factors, lesbian, gay, bisexual

ABSTRACT

Exploring Protective Factors among Lesbians, Gays, and Bisexuals: A Framework for Psychological Well-Being and Relative Influence

by

Sheri L. LaDuke

Lesbian, gay, and bisexual individuals must regularly navigate stigma, or social situations in which they are devalued because of their sexual orientation. The research has well established minority stress processes which link situations of stigma to reports of poor psychological well-being. However, protective factors leading to healthy psychological well-being are relatively understudied. This dissertation is a review of protective factors that have already emerged in the research and an assessment of these protective factors simultaneously to better understand how they influence psychological well-being. I recruited adult sexual minority participants using a comprehensive social media approach. I then tested mastery, problem-solving coping, cognitive flexibility, structural factors, social support, self-compassion, hope, community connectedness, meaning making, and emotional openness on both measurements of positive and negative psychological well-being. Boosted regression analyses were used to assess the relative influence of the protective factors and while accounting for multicollinearity among the many protective factors. This was followed by OLS regression for cross validation. Results of the boosted regression trees indicate that hope, mastery, self-compassion, and social support are the most influential protective factors. This was supported by the OLS regressions. These results point to individual and social factors that affect psychological well-being of sexual minorities. Ultimately this dissertation provides a focused target for future research on intervention using these top

protective factors. Additionally, this dissertation expands protective factors previously only examined in lesbian, gay, and bisexual individuals to a broader sexual minority population.

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CHAPTER 1

INTRODUCTION

Lesbians, gays, and bisexuals must routinely navigate experiences of stigma (e.g., discrimination, lack of resources, and anti-gay epithets) and consequently experience stigma-related stress, referred to as minority stress. The harmful consequences of stigma in general and sexual stigma for lesbians, gays, and bisexuals (LGB) have been vastly demonstrated in the literature. Indeed, decades of research has shown increased depression, anxiety, and even suicidal ideation among those who identify as LGB which has been linked to the minority stress of stigma (for reviews see Hatzenbuehler, 2009; Meyer, 1995, 2003; Newcomb & Mustanski, 2010). However, not all stigmatized individuals experience such decrements in well-being (Crocker & Major, 1989; Miller & Kaiser, 2001; Shih, 2004). For some individuals the impact of stigma is not as great as for others.

Limited research has explored factors that may protect LGB from the harmful effects of stigma. For instance, factors such as meaning making (Frost, 2011) and hope (Kwon, 2013) may serve to buffer the consequences of stigma and lead to better psychological outcomes or well-being. Current psychological frameworks have been developed in an attempt to explain how the negative outcomes relative to psychological well-being develop. The current dissertation employs a positive psychological approach to identify factors that mitigate or protect LGB from the negative effects of stigma and minority stress on psychological well-being (positive outcomes and reduced negative outcomes). An overarching goal is to inform future interventions through identification of the significant factors that could be enhanced to promote better outcomes among LGB individuals. This study is novel in two important ways 1) it used

comprehensive recruitment methods and 2) it focused on comparing factors that may protect psychological well-being rather than a disease model.

In the paragraphs that follow I first define stigma and its relationship to psychological outcomes. Next, I describe the minority stress framework and other theoretical models that have been used to partially explain the link between sexual stigma and poor psychological well-being among lesbians, gays, and bisexuals. I then review the existing empirical evidence that supports protective factors and a proposed a new model of psychological well-being among LGB individuals based on the existing frameworks and evidence. I end with a description of an empirical test of the factors in the proposed model that was conducted in order to understand which factors are most protective to inform intervention.

Stigma

Definitions and types. Stigma has been studied among social and personality psychologists for decades, most notably Erving Goffman who prompted modern explorations of stigma. Even though some of the concepts he presented in his work are outdated, the theories he presented in *Stigma: Notes on the Management of Spoiled Identity* (1963) serve as the foundation for understanding all types of stigma and has been cited over 22,000 times according to online sources (Google Scholar, 2015). Goffman's (1963) definition of stigma focuses on the anomalies of the individual (i.e., an individual's devalued identity or other characteristic) that set them apart from the general population.

More recently, researchers have employed a social-cognitive approach to explore the process by which stigma develops. This theory recognizes that in order for an identity to be devalued there must be a social component; thus this approach depicts stigma as a *social* identity that is devalued (Crocker, Major, & Steele, 1998). Stigma begins with exposure to the negative stereotypes about a group of people that fosters devaluation of that group and those who hold

that group identity. Consequently prejudice beliefs are born from these negative stereotypes. Discrimination occurs when behavior is congruent with the prejudices. The culmination of these negative stereotypes, prejudice, discrimination, and loss of resources is a stigmatizing situation, and often this results in a loss of power and resources for the devalued individual or group.

Further conceptualizations of stigma have considered stigma as a product of a social climate that devalues a particular identity or characteristic. Thus, the concept of stigma has changed from being something that one possesses to being something that society enacts. Indeed, one of the most current definitions widely used for stigma focuses solely on the social elements, including a power structure, that create and perpetuate stigma. This conceptualization refers to stigma as existing "when elements of labeling, stereotyping, separation, status loss, and discrimination occur together in a power situation that allows them" (Link & Phelan, 2001; p. 377). This definition clearly highlights a loss of power among those with a devalued identity or characteristic as important in understanding how stigma works. Even though stigma is a product of social climate towards a particular identity or characteristic (public stigma), it can also occur within the individual who has the devalued social identity or characteristic. This occurs when the individual incorporates the negative stereotypes into their self-concept and is called self or internalized stigma.

Stigma has also been broken down into components of self and public stigma from the perspective of the stigmatized individual (Corrigan, 2004). Public-stigma is the experience of society's negative regard toward the stigmatized group. Public stigma can be experienced both directly and indirectly. This can guide and limit the ways in which the stigmatized can interact with the community and interpersonally with others (Corrigan, 2004). This is done through both enacted (direct) and felt (indirect) stigma. Enacted stigma refers to the actual experience of

prejudice or discrimination; whereas, felt stigma can be experienced by being aware that enacted stigma does or could happen. Enacted/felt stigma can range from actual or anticipated name calling to criminal violence (Herek, 2007). By contrast, self-stigma is the internalization of these negative public attitudes and unfair treatment. Self-stigma occurs when one applies these negative attitudes toward the self and as a consequence suffers negative self-concept (e.g. low self-esteem, shame; Corrigan, 2004).

Public and self-sexual stigma. Accordingly, Herek (2007) specifies sexual stigma as "the negative regard, inferior status, and relative powerlessness that society collectively accords to any non-heterosexual behavior, identity, relationship, or community" (pp. 906-907). It is also noted that sexual stigma differs from other stigmas in an important way; in the U.S., sexual prejudice is often accepted and proper. Indeed, the explicit denial of rights and privileges afforded to heterosexuals as well explicit social rejection and ostracism is common for LGB individuals. For instance, with the exception of a handful of states, same-sex couples were not allowed to marry until 2015 (HRC, 2015a). Also, some states still do not include sexual orientation in discrimination and hate crime laws (HRC, 2015b). Additionally, LGB youth are at an increased risk of bullying and ostracism due to their sexual orientation (Hong & Espelage, 2012). Thus, sexual stigma is the devaluation of those who have a sexual orientation other than heterosexuality in such a way that limits opportunities afforded to those who have a heterosexual orientation or behaviors, can take a more aggressive role through verbal or physical harassment, and is often considered acceptable.

The acceptability of this stigmatization is reflected in the research that looks at prevalence and types of stigma enacted. Among gay, lesbian, and bisexual individuals, 49% have reported verbal abuse or violence and 21% have reported property crime (Herek, 2009). In a

national study of 34,653 participants, LGB individuals reported the second highest rates of experiences of discrimination among other stigmatized groups of Black, Hispanic, and woman respondents (McLaughlin, Hatzenbuehler, & Keyes, 2010). Among the discrimination reported, public settings were the most reported followed by offensive name calling. It is not necessary for LGB individuals to experience these events first-hand for them to have an impact (Herek, 2007). Simply being aware of the possibility for enacted stigma, or felt stigma, can regulate behavior. Thus, public stigma influences how LGB individuals interact with the world through direct discrimination and prejudice and the threat of discrimination and prejudice.

Whereas public stigma is the devaluation of non-heterosexuals by others, self-stigma is the application of that devaluation to the self. Specifically, lesbians, gays, and bisexuals experience self-stigma when their beliefs are aligned with society's negative attitudes and beliefs of non-heterosexual sexualities (Herek, Gillis, & Cogan, 2009). Corrigan (2004) describes this attitude as self-prejudice and self-discrimination when it interferes with the way the stigmatized respond to the environment. For instance, LGB individuals may decide not to pursue a long-term relationship because they accept the devaluation of same-sex couples by society; this is self-discrimination. In a sample of 2,259 lesbian, gay, and bisexual adults Herek and colleagues (2009) found that sexual minorities with stronger cultural ideologies that devalue non-heterosexual characteristics had higher levels of self-stigma. Among the LGB participants studied, Herek and colleagues found increased levels of stigma among men, political conservatives, and the highly religious. Additionally, self-stigma was higher in those who regularly passed as heterosexual and did not believe their sexuality was a choice.

Sexual self-stigma is a multi-dimensional construct that is related to maladaptive behavior, attitudes, and affect. Early conceptualizations of the construct involved attitudes

toward the self based on sexual minority status, attitudes toward other LGB individuals, and internal reactions toward disclosure of sexual identity (Nungesser, 1983). These conceptualizations developed to include a lack of association with like others and conflict with moral/religious attitudes as a product of self-stigma (Szymanski & Chung, 2001). That is, sexual self-stigma can include negative attitudes towards the self and other LGB individuals, unwillingness to disclose, distance from like others, and dissonance between moral/religious beliefs and identity.

Psychosocial implications of sexual stigma. Sexual stigma has many negative implications, particularly including those related to psychological well-being. On the extreme end, suicidal ideations are increased for LGB individuals. Bolten and Sareen (2011) reported from a large U.S. sample (34, 653) that LGB adults reported more suicide attempts than their heterosexual counterparts. Specifically, suicide attempt rates were 9.8% and 10% for gay and bisexual men respectively, while their heterosexual counterparts reported 2.1%; rates for lesbian and bisexual women were 10.9% and 24.4% respectively, while their heterosexual counterparts reported only 4.2%. There is research that evidences that cultural devaluation of non-heterosexual sexualities explains the increased risk of suicide attempts among LGB individuals. For example, in a sample of gay and bisexual men (1,248), discrimination and physical violence predicted suicidal ideation (Huebner, Rebchook, & Kegeles, 2004).

Devaluation and discrimination often occurs at government policy and institutional levels; studies show that even these broad and generalized events can impact the well-being of LGB individuals. These discrepancies in equality can make the stigmatizing characteristic more salient and ultimately are related to poorer psychological well-being outcomes for LGB individuals. Indeed, Hatzenbuehler, McLaughlin, Keyes, and Hasin (2010) reported on a

national, longitudinal study of 34,653 participants in which data were collected at an opportune time before and after the time states where voting on limiting marriage to one man and one woman. They found that in states that voted to ban same-sex marriage psychological disorders significantly increased among LGB participants compared to LGB participants in states that did not vote to ban same-sex marriage. Specifically, there was an increase in mood disorders, generalized anxiety disorders, alcohol use disorders, and psychiatric comorbidity among the LGB participants from the states that banned same-sex marriage. Specifically, in these states, generalized anxiety disorder increased 248.2% among LGB participants. From the same national sample it was found that living in a state that does not include protection for sexual orientation in hate crime laws and discrimination policies predicted a stronger relationship between identifying as LGB and diminished psychological well-being, specifically generalized anxiety disorder, post-traumatic stress disorder, and dysthymia (Hatzenbuehler, Keyes, & Hasin, 2009). Additionally, Riggle, B, Rostosky, and Horne (2010) reported that a sample of 2,511 LGB adults perceived more favorable messages from their environment, had higher levels of outness and social support, and lower sexual self-stigma in areas where sexual orientation was included in the non-discrimination policies. Thus, systematically neglecting to provide safety to known stigmatized groups, specifically sexual minorities, and denying the stigmatized rights that are afforded to others can have serious psychosocial consequences for sexual minorities.

Experiences with other lifetime or daily discrimination are also related to decrements in psychological well-being. Mays and Cochran (2001) found sexual minorities experience significantly more perceived discrimination than heterosexuals. Additionally, this discrimination was associated with more challenges in life, such as job loss due to discrimination. Overall, this discrimination was also related to more psychiatric disorders. Other research has linked

discrimination with substance use disorders. In a national sample of 577 LGB participants, McCabe, Bostwick, Hughes, West, and Boyd (2010) found increased substance use disorders among those LGB participants who had experienced higher levels of discrimination. Additionally, Huebner and colleagues (2004) found that among gay and bisexual men, instances of harassment, discrimination, and violence were significantly related to lower self-esteem and suicidal ideation. These more personal experiences of discrimination continue to be associated with poor psychosocial outcomes.

Research consistently reveals negative psychosocial correlates associated with sexual stigma and when negative experiences of prejudice and discrimination are turned toward the self, detrimental effects can increase for LGB individuals. Indeed, Meyer (1995) described internalized homophobia, as a predictor of feelings of demoralization, guilt, inhibited sexual behaviors, and suicidal ideation. Lewis, Derlega, Griffin, and Krowinski (2003) found that among a sample of 204 lesbians and gay men, internalized homophobia along with stigma consciousness, openness, and gay related stress significantly predicted depressive symptoms. These findings have held constant even in meta-analytic methodology. Newcomb and Mustanski (2010) found in an analysis of 31 sources that depressive symptoms had a small to moderate significant correlation with internalized homophobia. Further, Lewis, Derlega, Clarke, and Kuang (2006) found that among the lesbians, internalized self-stigma was significantly correlated with stigma consciousness, negative mood, lesbian related stress, intrusive thoughts, and even physical symptoms. Additionally, they deal with these negative implications while experiencing diminished resources, such as social support. Szymanski and Chung (2001) report that among the 157 lesbian and bisexual women participants, internalized homophobia was significantly and negatively related to overall social support and satisfaction of social support as

well as positively related to depression. Finally, self-concept has been diminished as a consequence of accepting the negative societal beliefs about one's group; Herek, Gillis, and Cogan (2009) found that higher self-stigma was related to greater psychological distress and lower well-being, and this relationship was mediated by decreased global self-esteem.

Frameworks for understanding the consequences of sexual stigma. Sexual stigma has many negative implications related to psychological well-being as described above. Below, I discuss frameworks researchers have developed to understand this relationship. While research supports a direct link between experiencing stigma and these outcomes, stigma can also affect well-being indirectly. Theoretical models posit that social and emotional coping as well as deteriorated self-concept and other internalized stigma processes function to lower over-all well-being in the face of stigma. Three models that have outlined this process are described below, most notably the minority stress theory.

Those with a stigmatized identity must regularly deal with the negative impact of being stigmatized (e.g., Herek, 2007) which often leads to decreases in psychological well-being (Quinn & Chaudoir, 2009). There is a considerable amount of research identifying this link between the experience of sexual stigma and negative outcomes, such as depression and decreased psychological well-being, as described above. Minority stress theory (Meyer, 2003; Meyer, 2013) puts forth a framework that outlines how a stigmatized group experiences stigma in a way that leads to psychological distress. This theory takes into account general stress experiences that are common among those in the general population and suggests that in addition, minorities must deal with added stress due to their minority status. In general, this is the chronic stress related to minority status, such as discrimination, lack of resources, and anti-gay

epithets, which contributes to diminished psychological well-being. These internal processes, along with general and minority stress lead to decreased psychological well-being outcomes.

Minority stress theory further outlines how stigma affects psychological well-being. Simply having a minority status will put one at risk for minority stress. However, when the individual identifies with this status (e.g., lesbian, gay, bisexual) and experiences minority stress, internal processing of the stress occurs in such a way that can lead to expectations of rejection, feeling the need to hide one's identity, and accepting the negative stereotypes to be true about oneself (i.e., internalized homophobia). Thus, minority stress works indirectly through these processes to affect psychological well-being. LGB individuals may believe the negative stereotypes and thus think negatively of their self. As LGB individuals experience and become more aware of prejudice and discrimination, they may start to reasonably expect to be rejected on the basis of being lesbian, gay, or bisexual due to personally experiencing rejection or knowing of others' rejection based on sexual minority status. Finally, LGB individuals must also be concerned with and regulate who knows of their minority identity. So, concealment of minority identity may take place if there is a threat to resources, including social support and access to jobs. The current study focused on factors that can be changed through intervention/social action; thus, concealment/outness was not included in the current model, but was tested as a covariate. It is not ethical to blindly encourage one to "come out" without considering the risk for physical/emotional violence and financial burdens.

Additional influences that may intervene between sexual minority stress and processes to compromised psychological well-being outcomes are characteristics of the minority identity, coping, and social support. Characteristics of minority identity include how prominent the identity is to one's self-definition, valence (i.e., how the individual evaluates their self), and how

integrated the LGB identity is with other aspects of identity. Aspects of minority identity were not included in the current study that is focused on change because, like outness, there are other factors that must be considered when targeting an aspect of identity for change. For instance, if an individual accepts the negative stereotypes associated with being LGB, then attempting to strengthen the centrality of that identity without changing their attitudes toward sexual orientation could have negative effects such as internalized heterosexism. Meyer (2003) explains how the link between minority stress/internal processes and psychological well-being outcomes can be influenced by coping strategies and social support. He notes that coping and social strategies can operate on both the individual and group level. Thus, individuals may have their own style of coping and social support network and also participate in group coping and social support where resources are shared with all members.

Hatzenbuehler (2009) built on the minority stress framework by reviewing the literature and putting forth a psychological mediation framework that represents three categories of mechanisms that mediate the relationship between sexual stigma and psychological well-being. According to this model, when an individual experiences stigma, there is a potential to consequently experience psychopathology, mediated by coping/emotion regulation (e.g., rumination), social and interpersonal behaviors (e.g., social isolation), and cognitive processes (e.g., hopelessness).

Supported by empirical research, Hatzenbuehler’s (2009) theoretical model integrated minority stress processes with the psychological mediation framework to more fully understand decreased psychological well-being among sexual minorities. In the model, processes of coping/emotion regulation, social factors, and cognitive processes were grouped together to represent general psychological processes as a mediator of distal stigma experiences and

psychological well-being outcomes. While the minority stress model included coping and social support, they were represented as moderating the relationship between minority stress and outcomes. By contrast, Hatzenbuehler placed these processes as being influenced by the very distal minority stress that the three coping strategies are supposed to buffer. Additionally, group specific processes (which at an earlier point, Meyer (2003) labeled as proximal minority stressors, such as expectations of rejection and concealment) are represented as mediators. Finally, the model also includes potential moderators that may influence this meditational process including demographics, developmental influences, and identity characteristics; however, these factors have largely been unexplored.

Frost (2011) put forth a theoretical model similar to the minority stress model and psychological mediation, with the addition of meaning making and physical health outcomes. According to Frost, stigmatized individuals may act in ways to promote change in the social structures that make stigma possible. Thus, they are able to use their experience of stigma to make meaningful contributions to society and their own lives. Frost suggested that meaning making moderates, or influences, the relationship between stigma and well-being. Accordingly, meaning making may serve as a protective factor against the harmful effects of stigma.

Frameworks for understanding sexual stigma and psychological well-being. The models, theoretical contributions, and research for understanding how stigma affects psychological well-being thus far have primarily been consistent with the disease model traditionally adopted in psychological research by outlining the process through which a stigmatized individual gets to a state of impaired psychological functioning (e.g., Hatzenbuehler, 2009; Meyer, 1995; Meyer, 2003, Newcomb & Mustanski, 2010). Although this avenue of research is vital in understanding and treating those that suffer from experiences of stigma,

looking toward factors that help maintain psychological well-being among stigmatized groups, such as LGB individuals, may provide unique insight into how individuals can avoid negative outcomes entirely (Shih, 2004). Protective factors may not simply be the reverse of the mechanisms leading to decreases in psychological well-being (e.g., low or high social support), but also constructs that are unique to the stigmatized group, and result in positive outcomes (e.g., inclusion in the LGBT community; Frost & Meyer, 2012).

The notion that stigma can lead to relatively positive outcomes is not new. Crocker and Major (1989) suggested that some stigmas can result in increased self-esteem; specifically they note three self-protective properties of stigma. Crocker and Major point to several studies that suggest attributing rejection to the stigma rather than personal inadequacies can lead to a more positive self-concept. Additionally, when a stigmatized individual makes in-group social comparisons rather than including the advantaged group in their social comparisons the outcomes on self-esteem may be more favorable. This is likely due to avoiding comparisons with advantaged others. Finally, those who are stigmatized may devalue the domains in which their group has performed poorly and place more importance on favorable group characteristics. The latter two concepts presented by Crocker and Major may be found more readily when there is solidarity among those in the stigmatized group. For example, racial minorities due to the visibility of their identity may be more likely to connect with similar others; whereas, sexual minorities due to their concealable identity may find it more difficult to connect with like-others and develop cohesive group characteristics (Crocker & Major, 1989; Pachankis, 2007). In addition to the protection of self-esteem through group identification and connection, multiple identities can serve to guard against stigma (Shih, 2004). That is, if one identity is threatened (e.g., race) the individual can focus on another identity (e.g., religion) to find solace.

The protective factors mentioned above stem from the experience of stigma and not independent resilience factors. In the first of its kind, Kwon (2013) proposed a theoretical framework of resilience in LGB individuals. Kwon suggested that social support, emotional openness, hope and optimism are indirectly linked to psychological health through lower reactivity to prejudice. Additionally, social support is directly linked to psychological well-being. Taking the first factor in Kwon's model, social support, he posits that for sexual minorities increased social support can lead to increased psychological well-being by providing positive role models or connection with like-others in the LGB community. Additionally, social support is linked to fewer negative reactions to prejudice, such as emotional distress, particularly when their sexual orientation is affirmed. The second factor in Kwon's model, emotional openness, is the ability and willingness to process emotions, particularly negative ones, in an accepting and insightful manner. Openness may lead to fewer negative reactions to prejudice and in turn greater psychological well-being. The third and final factor in Kwon's model, hope and optimism, involve positive attitudes about the future. Theoretically, hope and optimism would lead to fewer negative reactions to prejudice and in turn greater psychological well-being.

In sum, most current theoretical models outline how stigmatized individuals, including LGB, get to a state of impaired psychological well-being. While there are suggested protective mechanisms for stigma, these may work better in some stigmatized groups than others (Crocker & Major, 1989). Furthermore, there is only one such theoretical model identifying the process that protects psychological well-being among sexual minorities specifically (Kwon, 2013). There is a large body of research supporting the link between sexual stigma and decreased psychological well-being, however little is known about what protective factors of psychological well-being exist among LGB individuals in the context of stigma. The current study is an

investigation into what factors best promote psychological well-being in LGB individuals in the context of stigma to inform intervention and social change. The following section is a review of potential protective factors that are evidenced in the literature. Specifically I looked for factors that promoted psychological well-being or lessened the negative psychological outcomes.

Protective Factors

Mastery. Mastery is the degree of perceived control an individual has over opportunities and events throughout life (Pearlin & Schooler, 1978). This perspective of control allows for an individual to believe that problem solving solutions can be enacted by the individual in response to the environment. Research has shown mastery to be an effective coping strategy to manage life stressors (i.e., Felsten & Wilcox, 1992; Korte, Cappeliez, Bohlmeijer, & Westerhof, 2012). Thus, regaining or retaining this perceived control in a stigmatizing environment may be beneficial in the context of sexual minority stigma.

Mastery has been shown to influence outcomes such as quality of life and depressive symptoms. Chung, Pan, & Hsiung (2009) found in an outpatient sample of patients suffering from depression, mastery directly predicted quality of life and symptoms of depression. However, Chung and collogues also found in this cross-sectional data that mastery mediated the relationship between stigma and quality of life. Conversely, Rueda and colleagues (2012) found a moderating effect of mastery on the relationship between HIV stigma and depressive symptoms. Specifically, those with greater levels of mastery did not experience greater levels of depressive symptoms at higher levels of stigma, yet those lower in mastery did experience greater levels of depressive symptoms with higher levels of stigma. Additionally, in a sample of HIV positive participants, mastery moderated the relationship between stressors and health-related quality of life (Gibson et al., 2011). Thus, mastery may be a factor leading to

psychological well-being among sexual minorities when looking at sexual stigma in the framework of minority stress.

While the concept of mastery is a well-researched topic, few studies have explored mastery in the context of sexual stigma. In a study comparing heterosexual men and women to gay men and lesbian women, Spencer and Patrick (2009) found that sexual orientation predicted both self-esteem and depressive symptoms. Specifically, lesbian women and gay men had lower self-esteem and more depressive symptoms than their heterosexual counterparts. Additionally, personal mastery uniquely contributed to the variance in depression symptoms and self-esteem even when controlling for sexual orientation. The results indicated that those with higher personal mastery had greater psychological well-being. These findings suggest that personal mastery may indeed be an important resource for sexual minorities to draw upon to mitigate the decrements in psychological well-being.

In another study measuring perceived stigma in a sample of gay men, mastery was found to be a significant factor predicting psychological well-being (Wight, LeBlanc, de Vries, & Detels, 2012). Specifically, mastery partially mediated the relationship between perceived stigma and positive affect in this study. That is, mastery partially explained positive affect when stigma was accounted for. This is further evidence for mastery as a protective factor for psychological well-being in the context of sexual minority stigma and thus is explored as such in the current study.

Problem-solving coping. Problem-solving coping refers to responding to stress in a constructive way (Carver, Scheier, & Weintraub, 1989). Specifically, this coping style involves the manipulation of the person-environment relationship in an attempt to reduce stress (Carver et al., 1989; Folkman & Lazarus, 1980). Problem-solving coping strategies have been linked to

perceiving the stressor as changeable (Folkman & Lazarus, 1980). This may be an important aspect to consider when looking to problem-solving coping among sexual minorities. It may be difficult for sexual minorities to perceive the situation as changeable when the stressor likely stems from attitudes of others and policies. Although sexual minorities may not have control over all aspects of their life (i.e., being discriminated against) problem solving skills may help them navigate situations in the best possible way.

Talley & Bettencourt (2011) found that among lesbian women and gay men when perceived stigma was high, high levels of problem solving coping were associated with less depressive symptoms regardless of level of outness, but this relationship was stronger when individuals were less out about their sexual orientation. However, problem solving coping did not influence depressive symptoms when perceived stigma was low. These findings indicate that problem-solving coping may protect against psychological distress particularly in times of high perceived stigma because it allows the individual to respond to the stressor in a constructive way.

Cognitive Flexibility. Cognitive flexibility refers to how rigid or adaptive an individual is when considering possible responses to the environment, particularly when there is change (Dennis & Vander Wal, 2010; Martin & Anderson, 1998; Martin & Rubin, 1995). For example, if an individual has the ability to become aware of multiple options for responding to the environment, that individual is high in cognitive flexibility. Those with greater cognitive flexibility also have a willingness to consider and respond to these various options (Martin & Anderson, 1998; Martin & Rubin, 1995). Additionally, cognitive flexibility includes self-efficacy to be flexible in these responses (Martin & Anderson, 1998; Martin & Rubin, 1995).

Cognitive flexibility has also been shown to have a positive relationship with psychological well-being indicators. As noted above, sexual minorities may experience

decrements in psychological health in the form of anxiety and depression as a result of experiencing stigma, yet cognitive flexibility may help mitigate those negative outcomes. For instance, Lee and Orsillo (2014) found that cognitive flexibility was negatively related with anxiety symptoms. Participants endorsing generalized anxiety disorder symptoms scored lower on the Cognitive Flexibility Scale (CFS) than those who did not endorse such anxiety symptoms. Also, in a clinical sample of older adults who were experiencing both depression and anxiety, cognitive flexibility was shown to predict cognitive restructuring (a key component of CBT) following treatment as well as less emotional distress (Johnco, Wuthrich, & Rapee, 2014).

Cognitive flexibility has been studied in the context of events similar to events sexual minorities may experience (i.e., interpersonal victimization and social rejection). While studies have not explored cognitive flexibility among sexual minorities in the context of interpersonal victimization, it has been studied in a sample of women experiencing interpersonal victimization and found that cognitive flexibility predicted depression symptoms and PTSD symptomology (Palm & Follette, 2011). More specifically, those higher in cognitive flexibility self-reported less symptoms of depression and PTSD compared to those with lower cognitive flexibility. Additionally, social rejection has been shown in neuroimaging studies to cause physical pain which may also be regulated by cognitive flexibility (Kross, Berman, Mischel, Smith, & Wager, 2011). In a longitudinal study cognitive flexibility at pre-test predicted the presence and severity of post-operative pain at 6 and 12 months (Attal et al., 2014). Specifically, those with higher cognitive flexibility before surgery experienced less pain after surgery.

Research examining the role of cognitive flexibility in the face of sexual orientation stigma is limited. In a study of bisexual men and women, Brewster, Moradi, DeBlaere, and Velez (2013) found that cognitive flexibility moderated the relationship between the experience of

bisexual stigma and psychological well-being. Specifically, at both low and high levels of stigma, high cognitive flexibility (but not low) was associated with greater psychological well-being, as noted by a composite score of satisfaction with life and self-esteem. However, cognitive flexibility did not moderate the relationship between stigma and psychological distress. Thus, cognitive flexibility may be a protective factor deserving of further attention and is included in this study.

Structural factors. It is common for sexual minorities in the U. S. to experience social rejection and situations in which they are not afforded the same rights and privileges as heterosexuals. For instance, even though the Supreme Court ruled in favor of marriage equality granting same-sex couples the right to legally marry and for that marriage to be recognized by all states, until the ruling on June 26, 2015 several states denied same-sex couples the right to marry. In addition, some states have yet to include sexual orientation in discrimination (e.g., employment and housing) and hate crime laws. Thus, in areas that have laws against violence and discrimination toward sexual minorities, equality in legal and social domains may also serve as a protective factor for psychological well-being whereas structural discrimination is a risk factor.

In order to examine the role of structural stigma in the lives of sexual minorities, some studies compare groups of heterosexual and sexual minority individuals living in different locations that vary in social climate. For example, in one study of cultural/structural factors of stigma, Shapiro, Peterson, and Stewart (2009), found in a sample of lesbian and heterosexual mothers from the U. S. and Canada, legal and social context moderated the relationship between sexual orientation and depressive symptoms. Specifically, lesbian mothers in Canada reported significantly fewer depressive symptoms than U.S. mothers, while no difference was found

between U.S. and Canadian heterosexual mothers. This study provides support for the importance of structural stigma, as Canada has more legal equality and less social condemnation for sexual minorities than the U.S.

Other studies have examined structural stigma in large surveys of the U.S. population. Hatzenbuehler, McLaughlin, Keyes, and Hasin (2010) found in a longitudinal study of a nationally representative sample (N = 34,653) that in states that voted to ban same-sex marriage psychological disorders significantly increased among LGB individuals in the year following the ban, as compared to LGB individuals in states that did not vote to ban same-sex marriage. Specifically, there was an increase in mood disorders, generalized anxiety disorders, alcohol use disorders, and psychiatric comorbidity among the lesbian, gay, and bisexual participants from the states that banned same-sex marriage. For example, in these states, generalized anxiety disorder increased 248.2% among LGB individuals. Additionally, Hatzenbuehler, Keyes, and Hasin (2009) found that LGB individuals who lived in a state with no protections for sexual minorities in hate crime laws and discrimination policies were more likely to experience diminished psychological well-being, specifically generalized anxiety disorder, post-traumatic stress disorder, and dysthymia.

Importantly, the significance of legal structural factors extends to those in legally recognized relationships. Riggle, Rostosky, and Horne (2010) found that legal recognition of same-sex relationships benefits lesbian, gay, and bisexual individuals beyond that of a committed relationship. Specifically, internalized homophobia, depressive symptoms, and levels of stress were lower while meaning in life was higher among lesbian, gay, and bisexual participants in a legally recognized relationship compared to those who were in a committed relationship. This

suggests that legal recognition of same-sex marriage could serve as a protective factor for LGB individuals when they partake in such a relationship.

Most recently, Hatzenbuehler et al.'s (2014) research with a nationally representative, longitudinal sample highlights the importance of structural factors in health outcomes of sexual minorities. The General Social Survey was used to assess the relationship between structural stigma and mortality rates among LGB individuals. Structural stigma was measured as heterosexual attitudes toward homosexuality and mortality rates were gathered from the National Death Index. Using a hazard model they found that in high prejudice areas sexual minorities' life expectancy is shortened by 12 years on average compared to their sexual minority counter parts in low prejudice areas. Specifically, there were more deaths related to suicide, homicide/violence, and cardiovascular diseases among sexual minorities in high prejudice areas. Thus, structural and cultural factors are included in the current study.

Social support. Decades worth of research support the role of social support in promoting greater psychological well-being (see Sarason, Sarason, & Gurung, 2001, for a review of literature). Perceived social support is the belief that others value you and are willing attempt to assist you in times of need (Sarason, Sarason, & Pierce, 1990). Below I review the research on several different types of perceived support including general, family, sexuality specific, family of choice, and internet.

General social support. General perceived social support is linked with many psychological well-being outcomes. For instance, Beals, Peplau, and Gable (2009) found among 81 gay and lesbian participants that perceived social support was related to higher satisfaction with life, positive affect, and self-esteem and that perceived social support explained why more outness is associated with greater satisfaction with life and self-esteem. Among 210 bisexual

college students, Sheets and Mohr (2009) found that higher levels of general social support were related to lower depression and higher life satisfaction. Similar to previous studies, Sivadon, Matthews, and David (2014) found that among 135 adult sexual minorities, social support was negatively correlated with depression, perceived stress, and anxiety.

Importantly, social support has been found to be related to psychological well-being even in the context of stigma. For example, among 1,381 lesbian and bisexual women participants, those high in psychosocial resources, social support and spirituality, reported lower substance abuse and less mental health problems in the context of sexual minority stigma (Lehavot & Simoni, 2011). In a study examining 2 components of social support, Ramirez-Valles, Dirkes, and Barrett (2014) found among 182 gay and bisexual men that having more emotional support sources was related to better self-reported health, whereas more instrumental support was related to fewer depressive symptoms. There is even evidence to support social support as a protective factor for suicide and suicidal ideation which Matarazzo et al. (2014) found in a review of the literature among the general LGBT population and military and veterans who identify as LGBT. In a study comparing heterosexual men and women to gay men and lesbian women, Spencer and Patrick (2009) found that sexual orientation predicted both self-esteem and depressive symptoms. Specifically, lesbian women and gay men had lower self-esteem and more depressive symptoms than their heterosexual counterparts. Additionally, social support uniquely contributed to the variance in depression symptoms and self-esteem even when controlling for sexual orientation. The results indicated that those with more social support had greater psychological well-being.

Among older LGB individuals as well social support is important for psychological well-being. In a national sample of 2,560 older (50 years of age and older) LGB participants, physical

and mental health quality of life were positively related to social support and social network size (Fredriksen-Goldsen, Kim, Shiu, Goldsen, & Emlet, 2015). Examining the complex role of social support, Wight and colleagues (2012) found that in a study of older (ages 44-75) gay men, emotional support did not moderate the relationship between gay related stress and positive affect. However, social support did partially mediate the relationship between perceived stigma and positive affect in this study. While this type of mediation does not indicate that social support is a protective factor independent of stigma influences, this does point to the importance of social support in the context of stigma and well-being. Because increased social support is related to psychological health, targeting social support in interventions could change its relationship with stigma making it an independent protective factor post-intervention. Thus, social support was analyzed as a potential protective factor in this dissertation.

Family and friend support. Support from family has been shown in a few studies to be influential in psychological well-being among LGB participants. Among sexual minority girls, a lack of family support is related to more depressive symptoms, more likely to engage in heavier drinking and drug use. Among 210 bisexual college students, Sheets and Mohr (2009) found that higher levels of support from family and friends were associated with lower levels of binegativity and depression and higher levels of life satisfaction. In the context of stressful events, Goldberg and Smith (2011) found in a sample of 90 lesbian and gay couples adopting children that higher family support was related to lower depressive and anxious symptoms. Additionally, higher friend support was related to lower anxiety symptoms at time of adoption. Additionally, using a biomarker to assess differential outcomes of support, Burton, Bonanno, and Hatzenbuehler (2014) found that among 70 LGB young adults, participants were more likely to receive support from non-family members. However, lower cortisol reactivity to stressful events

was associated with parental support. Although research supports the positive impact family support can have, unfortunately, it is not always available.

A few studies highlight this need deficit among sexual minority participants. In a study of 2,446 older adults aged 57-85, sexual minorities were less likely to have children than heterosexual peers. Sexual minorities had fewer close relatives and they did not have more friends than their heterosexual peers (Brown & Grossman, 2014). Domínguez-Fuentes, Hombrados-Mendieta, and GarcÍa-Leiva (2012) report that in a sample of 220 gay men from Spain, participants were more likely to receive support from friends than family, but are largely unsatisfied with this support. Frequency and satisfaction with support from both family and friends were related to life satisfaction. Pearson and Wilkinson (2013) report that among 13,140 adolescents, sexual minority adolescents report feeling less close to parents than their heterosexual peers. These discrepancies in findings may highlight the need for a more nuanced approach to examining the role of social support rather than a broad assessment of general support. Additionally, the support offered by family may differ from the support offered by friends in the context of sexual minority status. When present, family support can have a positive impact on psychological health; thus I included this support as a moderator in the relationship between stigma and psychological well-being in the model.

Sexuality specific support. Support can also be specifically accepting and validating of sexual orientation. Beals and Peplau (2005) found that sexuality specific social support is linked to greater well-being over time. Among a sample of 245 LGBT adults Ryan, Russell, Huebner, Diaz, and Sanchez (2010) found that higher levels of family acceptance is associated with higher levels of self-esteem, social support, and health and lower levels of depression, substance abuse, and suicidal ideation. Further, among 245 LGBT young adults, sexuality specific support from

family was associated with more favorable life situation, LGBT esteem, and self-esteem (Snapp, Watson, Russell, Diaz, & Ryan, 2015). This association remained when other support sources, friend and community, were included. Unfortunately the only scale to date is intended specifically for use with sexual minority youth.

Families of choice and internet support. Although prior research has found support for the positive role of social support in the lives of LGB individuals, it may not always be available. It is important to also consider that among LGB individuals, social support may work in more nuanced ways than is typically measured by general social support scales. The journey of navigating a stigmatized identity can lead to the development of alternative social support networks such as families of choice and support through internet venues (Carpineto, Kubicek, Weiss, Iverson, & Kipke, 2008; Dewaele, Cox, Van den Berghe, & Vincke, 2011; Gabrielson, Holston, & Dyck, 2014). In fact, Croghan, Moone, and Olson (2014) found that among 495 sexual and gender minority adults, 75.6% of respondents reported having close others that they considered family even though they were not biologically related.

Sexual minorities may also seek out support online. Research has shown that stigmatized identity groups and support groups report more social support from online sources than others (Howard, 2014). However, stigma groups are less likely to receive offline social support. In the context of peer and sexual victimization, among 5,542 adolescent participants, LGBT youth were more likely to have friends online than their heterosexual counterparts. Additionally, among the LGBT youth the online friends were valued above in person friends. More research needs to investigate the influence on psychological well-being outcomes of sexual minorities receiving support online.

Given the breadth of information available from previous research and the nuances identified in social support outcomes on psychological well-being and behaviors, this study includes assessments of support from several aspects of the participants' lives. Support from family, friends, families of choice, and internet support were assessed and analyzed separately to determine the specific contributions of each, given these sources of support develop from different situational factors and events in the participants' lives. I consider support from family and friends as moderators in the relationship between stigma of sexual orientation and health outcomes because these relationships are more likely to develop independent of sexual orientation and the stigma that surrounds it. I considered support from families of choice and online sources as mediators in the relationship between stigma of sexual orientation and health outcomes because these relationships are more likely to develop as a result of sexual orientation and the stigma that surrounds it.

Self-compassion. Self-compassion is a mindful approach to understanding oneself and one's reactions, being self-kind when confronting perceived personal failures, and understanding that others have also experienced these things (Neff, 2003a). The construct has been conceptualized as having three sub-components: self-kindness, recognition of a common humanity, and mindfulness. Self-kindness can be thought of as sympathy or kindness toward the self even in times of suffering or feeling inadequate. A recognition of common humanity is understanding that others have common suffering and recognizing the external factors that contribute to the outcomes of situations. Mindfulness is the act of taking a nonjudgmental and objective view of the situation.

Self-compassion may lessen stigma's negative psychological effects. Allen and Leary (2010) identify self-compassion as an effective and healthy coping strategy. Prior research has

linked self-compassion to increased well-being and positive psychological functioning. Specifically, in a cross-sectional study, a sample of 391 undergraduates, those higher in self-compassion were lower in depression and anxiety scores and had increased scores of life satisfaction (Neff, 2003b). Additionally, self-compassion has been linked to higher levels of agreeableness, curiosity, conscientiousness, extraversion, happiness, optimism, personal initiative, positive affect, and wisdom and lower levels of negative affect and neuroticism in a sample of 177 undergraduates surveyed using a correlational design (Neff, Rude, & Kirkpatrick, 2007). There is evidence that those high in self-compassion respond more favorably to negative events. For example, Neff, Hsieh, and Dejitterat (2005) found that in a sample of 110 undergraduates taking a difficult course (i.e. engineering), those high in self-compassion tended to have higher self-confidence, see failure as a learning opportunity, and exhibited a positive coping strategy, positive reinterpretation/growth and acceptance when faced with perceived academic failure following an exam. In a review of the previous literature, Allen and Leary (2010) noted that when faced with negative events, those high in self-compassion may employ more positive coping strategies(i.e., positive cognitive restructuring) and avoid more damaging strategies(i.e., avoidance or futile problem-solving approaches).

To date, there are few published studies showing the benefits that self-compassion has for sexual minorities. In a study of 265 sexual minorities, Liao, Kashubeck-West, Weng, and Deitz, (2015) found that the link between perceived discrimination and psychological distress was explained by lower self-compassion. That is, perceived discrimination led to lower self-compassion which in turn led to greater psychological distress. Further, Jennings and Tan (2014) found in a cross-sectional study among 68 gay men that self-compassion was a significant predictor of satisfaction with life. Additionally, unpublished preliminary data analysis by the

author has revealed that higher self-compassion predicts lower levels of anxiety among sexual minorities. This preliminary analysis suggests that self-compassion may be a protective factor of psychological well-being for sexual minorities in the context of stigma. Specifically, in a cross-sectional study of 440 participants I found self-compassion to significantly predict anxiety levels of participants who identified as sexual minority ($b = -.327$, $se = 1.911$, $p < .01$; unpublished data). I conducted a follow-up study for my Master's thesis that experimentally tested the effects on perceived stigma, fear of rejection and mood among sexual minorities when self-compassion was induced via a writing intervention (Chandler, 2013). This study did not produce significant results. However, there was a marginally significant difference for 'hurt feelings' between the self-compassion condition and the writing control and true control conditions. Additionally, there was a marginally significant difference for anxiety between the self-compassion condition and the writing control condition. That is, the self-compassion induction shows a trend of minimizing hurt feelings and anxiety in the context of a stigma relevant event among sexual minorities. The lack of true significant findings could evidence that the self-compassion induction used is inadequate to deal with the ingrained experiences of living with a stigmatizing characteristic. A short induction of only a few minutes may not allow the stigmatized participant to fully tap into those negative attitudes acquired over a lifetime, but the findings show trends that are likely to strengthen with methods that better harness self-compassion among sexual minorities. Thus, self-compassion was tested as a protective factor for psychological well-being in the current study.

Hope. Hope is considered by those who study positive psychology to allow for effective coping in difficult times (Kwon, 2013) rather than maladaptive coping. According to Snyder and colleagues (1991), hope is a combination of a perception of effective determination that is goal

directed and a plan of how to attain those goals. Hope has been linked to positive psychological well-being outcomes. However, the study of hope among LGB participants has been limited.

Evidence for the positive role of hope can be found in clinical and non-clinical samples. Considering non-clinical samples, studies tend to focus on college student participants. For example, in a college student sample of 378, cross sectional data revealed that higher scores of hope related to more optimism and well-being and less psychological distress even when controlling for personal growth initiative (Shorey, Little, Snyder, Kluck, & Robitschek, 2007). In a similar study, Irving, Snyder, and Crowson (1998) had 115 college women who scored either high or low on hope (indicated by a screener) list ways they could control risk for cancer and how they could detect it, how they could control the course of the cancer, and control the impact cancer has on your daily life. Dispositional hope predicted more hope related coping responses (e.g., listing more ways to control risk and likelihood they would perform this behavior) even when controlling for GPA, cancer knowledge and experience, and affect.

Additionally, hope-focused interventions have results that support hope as factor increasing well-being in clinical samples. Howell, Jacobson, and Larsen (2015) conducted two studies incorporating a hope-focused counseling intervention with a sample of 10 and a sample of 24 adult chronic pain clients. Among other positive outcomes, both studies showed post-intervention improvement in well-being, with the second study resulting in increased hope on a more comprehensive measure than the first. Even among those with serious mental illness hope has shown to play an important role in functioning. In a cross-sectional study of individuals with serious mental illness, hope partially mediated the relationship between self-esteem and quality of life, whereas internalized stigma led to reductions in self-esteem (Mashiach-Eizenberg, Hasson-Ohayon, Yanos, Lysaker, & Roe, 2013).

Particularly relevant for the current study, hope has been studied, albeit in a limited way, in the context of stigma. Specifically, in a sample of 354 adults who stutter, hope has been shown to be related to lower self-stigma scores (Boyle, 2015). In the only study to date assessing the role of hope among LGB participants, Kwon and Hugelshofer (2010) assessed 65 LGB workers at two time-points, 30 days apart. Hope at Time 1 predicted the change in life satisfaction between Time 1 and Time 2 such that those with higher hope scores had increased life satisfaction at Time 2. Hope also moderated the relationship between workplace climate and life satisfaction. Specifically, when workplace climate is hostile, those with higher hope scores have a significantly higher life satisfaction rating than those with lower hope scores. Thus, hope was assessed in the current study as a protective factor of psychological well-being.

Community connectedness. Community connectedness is a sense of belonging to and relying on community for support (Sarason, 1974). Community connectedness is defined here as membership and participation in a community/group that is mutually beneficial to the individual and the community (Frost & Meyer, 2009). McMillan and Chavis (1986) proposed four theoretical components of community connectedness including membership, influence, fulfillment of needs, and shared emotional connection. Specifically for LGB individuals, community connectedness can mean the availability of similar others for comparisons, resources specific for LGB individuals, and social support specific to experiences regarding non-heterosexuality (Frost & Meyer, 2009).

Identifying with a group allows the members to make more realistic self-evaluations using within group social comparisons instead of relying on comparisons with advantaged others (Crocker & Major, 1989). Consequently, this can lead to higher levels of self-esteem. However, Crocker and Major suggest that this is a function of interacting within the group and those with

concealable stigmas who are not "out" may not benefit from this type of protection due to a lack of connection with similar others. Thus theoretically, sexual minorities who are more connected to the LGB community should experience more favorable psychological well-being outcomes, particularly self-esteem. Indeed, Frost and Myer (2009) found that the more one was connected to the LGB community, the less internalized homophobia they experienced. Additionally, they found that community connectedness was positively related to outness. Likewise, Morris, Waldo, and Rothblum (2001) found that awareness of a larger LGB community affects how comfortable one is about being out.

Yet, there are many complexities when considering community connectedness among LGB individuals. While community connectedness may provide much needed resources, it may also make members more visible targets for prejudice, discrimination, and harassment (Meyer, 2003). Additionally, certain individuals, such as LGB of color and those bisexually identified, may not be as connected to the community due to stigma from within the community. This is especially problematic to the extent that connection can play a positive role in the lives of LGB individuals. There are criticisms of LGB groups consisting of and supporting mostly white gay men and lesbian women. Thus, some groups within the LGB community are at risk for a lack of community connectedness. For example, in a study of 613 lesbian, gay, and bisexual adults, bisexuals reported lower levels of community connection than lesbian and gay participants (Balsam & Mohr, 2007). Similarly, Kertzner, Meyer, Frost, and Stirratt (2009), found in a sample of 396 lesbian, gay, and bisexual participants that bisexuality was linked to decreased social well-being and was mediated by community connectedness. Such that among the bisexual participants there was a lack of community connectedness that explained decreased social well-being. Additionally, Barrett and Pollack (2005) found in the Urban Men's Health Study that

working class men are also less likely to be involved in the gay community. Lastly, racism and whitewashing of gayness within the LGB community may ostracize lesbian, gay, and bisexual people of color. However, there is no empirical study to date that looks specifically at differences in the community connectedness of people of color.

There can be other unexpected negative outcomes associated with more community connectedness, evidencing more complexity. For instance, within a subsample of coupled participants community connectedness was positively related to relationship strain (Frost & Meyer, 2009). In addition, research has shown that being more connected to the LGB community is associated with heavier drinking. Baiocco, D'Alessio, and Laghi (2010) found that among 202 lesbian women and gay men ages 18-24 heavy and binge drinkers were more connected to the LGB community than social drinkers. Thus, community connectedness was assessed in the current study and consideration was given to possible differences of subgroups.

Meaning making. Meaning making has been defined as resolving discrepancies that arise between global beliefs and situational appraisals of meaning by either changing global beliefs or by changing the appraised meaning of the situation (Park & Folkman, 1997; Proulx & Inzlicht, 2012). Theoretical contributions in the literature address meaning making in the context of stressful life events and conditions (Park, 2005). It is suggested that meaning making in this context is a transactional process that ends in the resolution of global meaning and situational appraisals when an initial discrepancy exists. For instance, if an individual's global beliefs include fairness, justice, and common humanity and they experience a situation of stigma (e.g., kicked out of parent's home because they are gay), the stigmatizing situation is incongruent with global beliefs. Meaning making occurs when this discrepancy leads to reappraisal of the situation. On one hand, the reappraisal could result in individuals believing they are inherently

‘bad’ (i.e., internalized stigma) or deserved the stigmatizing event (e.g., getting kicked out of parents’ home for being gay). On the other hand, the reappraisal could result in changed global beliefs. In this latter instance, the changed beliefs can then manifest into a desire to alter future situations to be aligned with global beliefs, such as activism to prevent other young adults from experiencing stigmatizing events.

There is evidence to support the meaning making model and that meaning making is associated with positive outcomes in the context of stressful events. Specific pathways of the meaning making process have been supported in research on coping with loss (Park, 2008), PTSD (Park, Mills, & Edmondson, 2012), and trauma (Park & Gutierrez, 2013). Additionally, in longitudinal as well as cross-sectional studies meaning making is associated with better psychological adjustment following cancer (Park, Edmondson, Fenster, & Blank, 2008). The meaning making model has been tested in the contexts of coping with loss, PTSD, and trauma, but not in the context of stigma.

Other research indicates that meaning making may serve as a protective factor against the harmful effects of stigma. Specifically, Meyer, Ouellette, Haile, and McFarlane (2011) report that some participants appreciate their stigma because it brought out positive personal qualities and allowed them to see the world through their stigma; thus, giving them a unique perspective. For example, one of their participants stated that anti-LGB attitudes made her “feel responsible for changing other perceptions about gay and lesbian people… I am out on purpose, like it is a very political move…I am a, an ambassador for my people…” (p. 210).Therefore, meaning making may be a protective mechanism for sexual minorities. Previous qualitative work has started uncovering this theme among sexual minorities; however, to assess the protective properties of meaning making, I explored this concept quantitatively.

Emotional Openness. Emotional processing, also referred to as emotional openness, is an adaptive coping strategy of acknowledging and understanding emotional reactions and the legitimacy of such reactions (Stanton, Kirk, Cameron, & Danoff-Burg, 2000). Emotional openness is sometimes studied experimentally by methods that prompt reflection of what an LG identity means for individuals such as gay-related expressive writing inductions and tracking verbal disclosures of sexual orientation (Beals et al., 2009). Indeed, the construction of a narrative has been linked to emotional processing and understanding of the event (Pennebaker & Seagal, 1999).

Swanbon, Boyce, and Greenberg (2008) randomly assigned 62 gay men to either an expressive writing task or to a control task group. Those in the expressive writing condition experienced a decrease in somatic symptoms and gay-related avoidance at follow-ups as compared to the control. Among 84 lesbian and gay participants Beals et al. (2009) found that disclosure of sexual orientation lead to greater satisfaction with life which was mediated by emotional processing on days disclosure was an option. Such that disclosure led to more emotional processing and in turn greater satisfaction with life. There was also marginally significant support for this role of emotional processing in the relationship between disclosure and affect. However, emotional processing was not related to well-being at a 2-month follow-up. Further, Pachankis and Goldfried (2010) conducted a study of 77 gay male college student participants randomly assigned to write about gay-related topic or neutral topic. Those in the gay-related writing group experienced greater positive affect on the following days. Those who wrote about gay-related stress were significantly more open with their sexual orientation at a 3-month follow-up than the control group. Additionally, level of social support was more impactful for those not writing about gay-related stress such that when social support was low, depression

was higher. Thus, emotional processing was tested as a protective factor for psychological well-being in the current study. Although the studies conducted with lesbians and gay men have used an experimental design of expressive writing, I tested this in a validated self-report questionnaire.

The Present Study

To date, the majority of research on understanding LGB psychological well-being has focused on explaining how negative outcomes or how decrements in psychological well-being evolve. Increasingly investigators are looking toward protective factors that explain how sexual minorities maintain psychological well-being in the face of stigma, sometimes referred to as resilience. Although researchers are beginning to recognize resilience as an inherent part of the minority stress model and related models (e.g., Meyer, 2015), no study has examined multiple potential protective factors simultaneously in an effort to understand which ones may be more predictive of maintaining psychological well-being. Thus, the current study adds to the existing literature because it is the most comprehensive study, to date, on both established and emerging mechanisms that promote psychological well-being among lesbians, gays, and bisexuals. Based on the evidence in the literature, I proposed a model by which to understand the relationships of protective factors in the link between stigma and psychological well-being (Figure 1). Instead of testing the model directly, this dissertation focused on determining which factors are most important to the psychological well-being of LGB individuals. Such determination may provide a starting point that is most effective in addressing LGB psychological well-being. Exploratory analyses of the predictor variables (i.e., protective factors) was conducted to determine the relative influence of each variable in explaining psychological well-being.

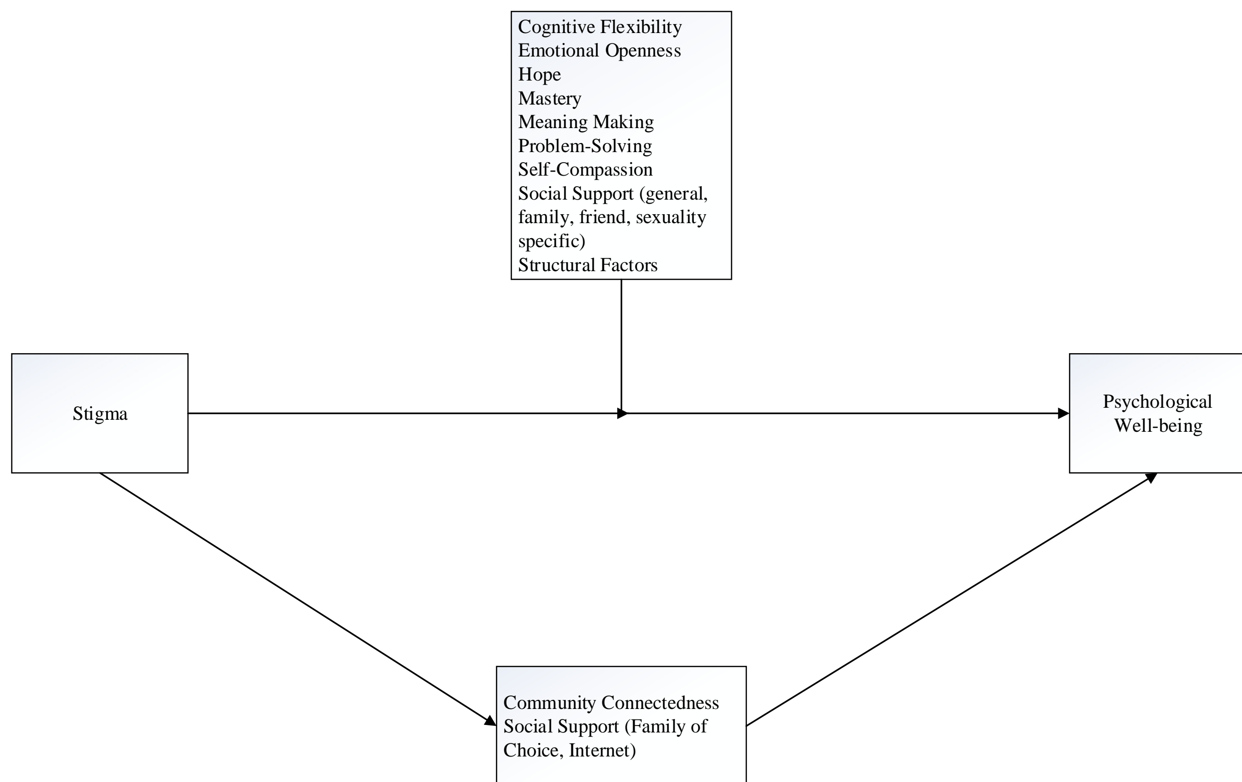


Figure 1
Framework of protective factors of psychological well-being among lesbians, gays, and bisexuals based on evidence in the literature

CHAPTER 2

METHOD

Participants

Participants were adults who self-identified as sexual minority were recruited to participate online via a broad recruitment strategy (described below). While the internet is a vast resource of potential participants from around the world, this dissertation only includes participants from the United States due to potential cultural differences that could confound study results. Due to the written online nature of the survey, the participants must also have had access to the internet and able to read English. There were a total of 261 respondents to the study; however, 91 were removed because they did not meet participant criteria ($n = 3$), were duplicates ($n = 7$), did not answer the attention check questions correctly ($n = 3$), or did not complete the outcome variables of the study ($n = 78$). The sample consisted of a total of 170 participants ranging in age from 18 to 66 ($M = 29.86$; $SD = 10.26$). The majority of the sample was female (61.8%), white (77.1%), had some college education or degree (91.1%), were employed full-time (47.1%), identified as low-middle income (30.6%) or middle income (31.8%), and lived in a suburban area (47.6%). Participants largely self-identified as either bisexual (41.8%) or homosexual (39.4%) (See Table 1 for complete demographic characteristics). The comprehensive recruitment method resulted in a large portion of participants from Amazon Mechanical Turk ($n = 98$; 57.6%) and emails sent to LGBT organizations ($n = 39$; 22.9%). Other participants were recruited from Facebook ($n = 18$; 10.6%), Twitter ($n = 7$; 4.1%), Internet Forums ($n = 6$; 3.5%), and Reddit ($n = 2$; 1.2%) (See Table 2 for demographics by recruitment strategy).

Table 1.
Demographic Characteristics of Participants Self-Identifying as Sexual Minority

Variable	*N*	**%**
Sex		
Female	105	61.8%
Male	58	34.1%
Trans	5	2.9%
Prefer Not To Answer	2	1.2%
Sexual Orientation		
Bisexual	71	41.8%
Homosexual/gay/lesbian	67	39.4%
Pansexual	14	8.2%
Asexual	12	7.1%
Queer	6	3.5%
Race		
White	131	77.1%
Hispanic	19	11.2%
Black	9	5.3%
Multiracial	5	2.9%
Asian American	4	2.4%
Native American	2	1.2%
Education (Highest grade completed)		
Grade 11	1	0.6%
Grade 12	11	6.5%
GED High School Equivalent	2	1.2%
Some College	64	37.6%
Bachelor’s Degree	61	35.9%
Master’s Degree	25	14.7%
Doctorate Degree	5	2.9%
Prefer Not To Answer	1	0.6%
Employment		
Unemployed	23	13.5%
Employed full-time	80	47.1%
Employed part-time	30	17.6%
Student	34	20%
Prefer Not To Answer	3	1.8%
Income		
Low Income	41	24.1%
Low-middle Income	52	30.6%
Middle Income	54	31.8%
Upper-middle Income	12	7.1%
Upper Income	7	4.1%
Prefer Not To Answer	4	2.4%
Urban/Rural		
Urban	64	37.6%
Suburban	81	47.6%
Rural	24	14.1%
Prefer Not To Answer	1	.6%

Table 2.

Demographic Characteristics by Recruitment Strategy

Variable	*MTurk*	*Email*	*Facebook*	*Twitter*	*Forums*	*Reddit*
N	98	39	18	7	6	2
Sex (n)						
Female	62	18	16	6	2	1
Male	35	17	2	0	4	0
Trans	1	3	0	1	0	0
Sexual Orientation *(n)*						
Bisexual	53	5	8	3	1	1
Homosexual	29	23	7	3	5	0
Other orientations	16	11	3	1	0	1
Race *(n)*						
White	67	36	18	5	3	2
Hispanic	15	2	0	2	0	0
Black	8	0	0	0	1	0
Multiracial	4	0	0	0	1	0
Asian American	2	1	0	0	1	0
Native American	2	0	0	0	0	0
Age [*M(SD)*]	28.6(7.2)	29.7(13.9)	34.2(12.5)	35.9(16.6)	32(8.1)	26.5(6.4)

Procedure

Due to the stigmatizing nature of minority sexual orientation, this research study was conducted online via SurveyMonkey to encourage participation by those who perceive stigma. I used a variety of online resources to reach and recruit the target population, including contacting 581 LGBT organizations nation-wide, online forums, Facebook, Tumblr, Twitter, Reddit, and Amazon Mechanical Turk (MTurk). In order to minimize the possibility of analyzing participants more than once, a participant tracking code was used. Participants were prompted to create a tracking code using the first two letters of the participant's mother's maiden name, two digits of birth month, and first two letters of the city of birth. This combination is not identifying and is unlikely to be duplicated by chance. I took a multifaceted approach to participant recruitment such that some outlets for distribution of the survey are membership or community based, such as LGBT organizations, while others are not and are available through outlets regardless of membership to LGBT organizations or community groups, such as Twitter and Tumblr.

Email. An extensive email list has been created and maintained over the past five years of organizations nationwide that support the LGBT community and their allies. I emailed the 581 LGBT organizations on the list a flyer for the study and asked if them to distribute the flyer and survey to their members. The distribution process at that level will vary among different organizations. For instance, one organization might forward my email to a listserv while others might post the details of the study to a Facebook page or a physical or online bulletin board. The email and flyer gave brief information on the study as well as a QR code associated with the study and a link to the web address to participate in the study.

Forums. Forums were used because these online outlets allow for individuals to network and socialize with like others without having to "come out" (McDermott, Roen, & Piela, 2013).

In this way the internet can be somewhat private (McDermott et al., 2013). To identify forums to be used in recruitment I searched the internet with various combinations of relevant search terms. The search terms used in this process were: “lgbt”, “gay”, “lesbian”, “bisexual”, and “queer” all combined with the search term “forum”. Forums with sexually explicit content were not considered. This search resulted in 11 forums that were contacted to ensure posting research opportunities is appropriate and welcome. I made an account and posted the study flyer to these forums once they are approved by the forum moderator.

Facebook. Following the methods used by Yuan, Bare, Johnson, and Saberi (2014) for recruitment via Facebook Fan Page, I created a Facebook Fan Page specifically for this study. In order to generate interest in the page and study I posted news articles, study announcements, survey dissemination requests, memes, and sexual minority-related resources as suggested by Yaun and colleagues (2014). Additionally, I used hashtags, in moderation, as described in the Tumblr section below to draw more attention to the study. Continuing to follow the methods of Yuan and colleagues (2014), study information was listed under the “About” section of the page as well as information on investigators to build rapport and credibility. Finally, other relevant fan pages were “liked” to help spread awareness of the study (Yuan et al., 2014).

Tumblr. Tumblr is an online blogging platform. I created and maintained a Tumblr blog related to the study for recruitment. Advertisement of the study on the blog mimicked the advertisements used on Facebook described above. Following the methods of Yuan and colleagues (2014), study information was listed under the “About” section of the blog as well as information on investigators to build rapport and credibility. Continuing to follow the methodology of Yuan et al. (2014), other blogs with relevant content were “followed” to help build an audience and facilitate recruitment. Hashtags were also used to help draw online

attention to the study. A search for "lgbt" was conducted in Tumblr and the other hashtags used in the top 200 related posts were recorded. Those that were relevant to LGBT topics were retained resulting in a total of 589 hashtags that were narrowed down to 5 specific hashtags that were directly relevant to the study and were used in moderation for each post.

Twitter. Twitter has been found to be a cost-effective recruitment tool that can also facilitate recruitment of hard-to-reach populations (O'Connor, Jackson, Goldsmith, & Skirton, 2014). Posts on Twitter are limited to 140 characters (Mollett, Moran, and Dunleavy, 2011), based on this limitation, advertisement of the study on the Twitter account mimicked a short version of the advertisements used on Facebook described above. This study was advertised on Twitter using tweets, retweets, and hashtags. I created a Twitter account that was used to advertise the current study. To establish a presence on Twitter I "followed" user accounts that are relevant to the research topic. These were identified by searching the results of key search terms (e.g., LGBT, bisexual, lesbian) and suggested "who to follow" recommendations. This is one method of gaining followers (Mollett et al., 2011; O'Connor et al., 2014) necessary to retweet the information about the survey to potential participants. Tweets were posted to my timeline with a link to the study and/or flyer. I used hashtags in moderation as suggested by Mollett and colleagues (2011) and as described in the Tumblr section above to draw more attention to the study.

Reddit. Reddit is a website for registered members to post text, images, and links to share with other members who can vote on the postings. Reddit has increasingly become an online venue for recruitment of participants as evidenced by subreddits focused on research participation such as /r/samplesize and /r/HITsWorthTurkingFor. I advertised on reddit by posting to relevant subreddits. Subreddits are narrowed topics that people visit and post in

concerning the topic of the subreddit. To find relevant subreddits to post in to advertise the current study, I searched "LGBT" in Reddit. This suggested subreddits which may contain the term that was searched. These were logged and those that were appropriate for the study were subsequently entered into the Reddit "search" box to identify another set of relevant subreddits. These were logged and searched as well. This procedure was repeated until the subreddit suggestions stopped producing new subreddits that had not already been logged and searched. This search resulted in a total of 16 subreddits appropriate for advertising the study.

MTurk. MTurk (www.mturk.com) is an online system with an international participant pool. MTurk provides a platform for participants to anonymously complete tasks and services for a small monetary compensation. Participants register with MTurk and are assigned an identification code. The participants are only known by this code to study requesters (researchers), providing anonymity for participants. The study requester pays MTurk for the completion of surveys. In turn MTurk pays participants for surveys completed based on identification code. For the purpose of this study, a qualifier was used to limit participation to individuals in the United States. MTurk users answered a set of brief qualification questions to ensure that only sexual minorities participated in the survey. Once these questions were submitted, those who identified as a sexual minority were taken to the full study survey. MTurk users completed the survey titled "Understanding Sexual Minority Experiences" through the online survey software SurveyMonkey and created a unique participant code which they entered into MTurk to ensure they completed the survey only one time. After completing the online survey, participants were compensated $1, which is the suggested rate for MTurk tasks lasting an hour (Buhrmester et al., 2011). Attention check questions (ACQ) were inserted throughout the

survey as an established strategy to ensure that participants were not bots or simply clicking through the survey in order to receive payment (Peer, Vosqerau, Acquisti, 2014).

Measures

Demographics. Participants were asked about their demographic information including education, income, employment, relationship status, sex, race/ethnicity, and age. Additionally, participants were asked about sexual orientation. To assess potential issues of structural stigma, participants were asked for their zip code. Outness (α = .88), centrality (α = .90), and valence (α = .83) were assessed as possible covariates. See Table 3 for descriptives on all measures.

Protective Factors.

Mastery**.** The Pearlin Mastery Scale (Pearlin & Schooler, 1978; Appendix B) was used to assess perceived control over daily and life events. It measures the extent to which the individual believes that they have the control to problem solve and change their environment. The scale consists of 7 items (e.g., “I have little control over the things that happen to me.”) with responses on a 4-point Likert scale. Decades of prior research has found this scale to be valid and reliable (Gibson et al., 2011; Infurna, Gerstorf, & Zarit, 2013) supported by current study analysis of an alpha of .88. Items that are worded to reflect a lack of control were reverse coded. A mean score was then calculated for a total mastery score with higher scores indicating a greater degree of mastery.

Problem-solving coping**.** Three subscales, active coping, planning, and suppression of competing activities, of the COPE Scale (Carver et al., 1989; Appendix C) were used to assess problem solving coping. The active coping subscale assesses the respondent’s use of taking direct action on a stressor or its effects (e.g., “I do what has to be done, one step at a time.”) and is similar to problem-focused coping. The planning subscale assess the cognitive effort the

respondent puts forth to develop a strategy to handle a problem (e.g., “I think about how I might best handle the problem.”). The suppression of competing activities subscale measures the extent to which the respondent can work through the problem without distraction (e.g., “I keep myself from getting distracted by other thoughts or activities.”). All subscales consist of four items each and are measured on a 4-point Likert scale (1 - I usually don't do this at all, 2 - I usually do this a little bit, 3 - I usually do this a medium amount, 4 - I usually do this a lot). These subscales have previously been assessed together to determine the extent of problem solving coping (Szymanski & Owens, 2008). Analysis revealed a total scale alpha of .88. A mean score was calculated for problem-solving coping with higher scores indicating a greater degree of problem-solving coping.

***Cognitive flexibility*.** Cognitive flexibility was assessed by two independent scales. The Cognitive Flexibility Inventory (CFI; Appendix D) is designed to assess behaviors related to cognitive flexibility whereas the Cognitive Flexibility Scale (CFS; Appendix E) is designed to assess attitudes as well as behaviors in a social context. While the CFS has consistently been shown to be reliable, two measures were chosen due to the expectation of openness in communication in the CFS. Two items in the CFS assess open communication, and given the nature of this sample, may confound the assessment of cognitive flexibility. It is expected that individuals identifying as a sexual minority will have different levels of outness where this open communication may or may not be appropriate. Thus, a second, newer measure of cognitive flexibility, the CFI, was included.

The Cognitive Flexibility Inventory (Dennis & Vander Wal, 2010) is constructed to be clinically relevant and reflect behaviors that indicate cognitive flexibility. It measures the degree of rigidity or flexibility in the individual’s ability to perceive control (subscale: control) in

difficult situations as well as perceiving multiple explanations and solutions (subscale: alternatives). The scale consists of 20 items (e.g., control: “I am capable of overcoming the difficulties in life that I face.”; alternatives: “I consider multiple options before responding to difficult situations.”) with responses on a 7-point Likert scale (strongly disagree – strongly agree). Current analysis found this scale to be highly reliable with an alpha of .92 consistent with prior research (Dennis & Vander Wal, 2010; Johnco, Wuthrich, & Rapee, 2014) . Items that are reversed in wording were reverse coded. A mean score was then calculated for a cognitive flexibility score. Higher scores indicate greater cognitive flexibility.

The Cognitive Flexibility Scale (CFS; Martin & Rubin, 1995) focusses on interpersonal interaction and assesses three components of cognitive flexibility. These components include the willingness and ability to see multiple options in a situation and willingness to respond in novel ways when appropriate as well as self-efficacy in being able to respond flexibly and appropriately. The scale consists of 12 items (e.g., “I can find workable solutions to seemingly unsolvable problems.”) on a 6-point Likert scale (strongly disagree to strongly agree). Current analysis found this scale to be reliable with an alpha of .85 consistent with prior research (Martin & Anderson, 1998). Items that are reversed in wording were reverse coded. A sum score was then calculated for a cognitive flexibility score. Higher scores on this scale reflect greater cognitive flexibility.

***Structural factors*.** While there is no established scale to assess structural factors, I put together a series of items based on the state of residence of the participant and coded each using a 1 to indicate protection and 0 for no protection. Specifically, structural stigma was determined based on sexual orientation laws of the state in which the participant resided at the time of the study (using participant zip code). I coded four laws: hate crime laws, employment

discrimination laws, state employment discrimination, and housing discrimination laws, all of which serve to protect sexual minorities. States received a score from 0 to 4. States that had no protection laws received a score of 0, representing the lowest score on structural protective factors. States with one protection law received a score of 1. States with two protection laws received a score of 2. States with three protection laws received a score of 3. States with four protection laws received a score of 4, indicating the highest score for structural protection. Analysis revealed an alpha of .81, indicating these items were reliable and have minimal error. A sum score was then calculated for a structural stigma score, with higher scores indicating greater structural protection.

Social support. Social support was assessed using the Multidimensional Scale of Perceived Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988; Appendix F). This scale consists of 11 items assessing perceived support from family, friends, and someone special (e.g., "There is a special person who is around when I am in need."). Responses are scored on a 7-point Likert scale (1 – very strongly disagree to 7 – very strongly agree). Analysis revealed an alpha of .90, consistent with prior research which found this scale to be reliable with alphas of .88 (Zimet et al., 1988). Scores were calculated by computing the mean of all items. Higher scores indicate greater perceived social support.

Self-compassion. The Self-Compassion Scale (SCS; Neff, 2003b Appendix G) was used to assess self-compassion in the current study. Overall, self-compassion is the extent that an individual exhibits self-kindness, a recognition of a common humanity, and mindfulness. The scale consists of six subscales: self-kindness (e.g. " I'm kind to myself when I'm experiencing suffering"); self-judgment (e.g. "I'm intolerant and impatient towards those aspects of my personality I don't like"); common humanity (e.g. " I try to see my failings as part of the human

condition"; isolation (e.g. "When I'm really struggling, I tend to feel like other people must be having an easier time of it"); mindfulness (e.g. " When something painful happens I try to take a balanced view of the situation"); over-identified (e.g. " When I fail at something important to me I become consumed by feelings of inadequacy"). Analysis revealed high reliability with an alpha of .94, which is consistent with prior research with an alpha of .92 (Neff, 2003b). Subscales were calculated by taking the mean of each subscale. Total self-compassion scores were calculated by reverse scoring the self-judgment, isolation, and over-identification subscales and calculating the mean.

***Hope*.** The Hope Scale (Snyder et al., 1991; Appendix H) was used to assess participants' tendency to be hopeful. This scale consists of 4 items that make up the goal-directed determination subscale (e.g., "I energetically pursue my goals."), 4 items that make up the pathways subscale (e.g., "I can think of many ways to get out of a jam."), and 4 distracter items. These 12 items are scored on a 4-point Likert scale (1 = definitely false to 4 = definitely true). Analysis revealed the scale to be reliable at a .88 alpha, consistent with prior research with alphas of .84 (Snyder et al., 1991). Overall scores were calculated by computing the mean of all items. Higher scores indicate a greater sense of hope for the future.

Community connectedness. The Connectedness to the LGBT Community Scale (Frost & Meyer, 2012; Appendix I) was used to assess participants' feelings of connectedness to local and online LGBT communities. It measures the extent to which the participant feels close to and favorable toward the local LGBT community, as well as whether the community is helpful in political and other LGBT related problem-solving. This scale consists of eight items (e.g., "You are proud of the local LGBT community.") and was adapted from its original version, which specified NYC's LGBT community, to reflect local communities in general. Reliability analysis

revealed consistency with prior research (alpha of .81; Frost & Meyer, 2012) with an alpha of .91. Scores were calculated by computing the mean of all items. Higher scores indicate greater connectedness to the community.

***Meaning making*.** The meaning-making scale (van den Heuvel, Demerouti, Schreurs, Bakker, & Schaufeli, 2009; Appendix J) was used to assess the extent to which participants engage in the psychological process of making meaning. This scale consists of 7 items (e.g., "I actively take the time to reflect on events that happen in my life.") scored on a 6-point Likert scale (1-strongly disagree to 6 – strongly agree). Reliability analysis revealed an alpha of .83, consistent with prior research with alphas of .78 (van den Heuvel et al., 2009). The reversed item was reverse coded and a total mean score was calculated. Higher scores indicate greater meaning making habits.

***Emotional openness*.** The emotional processing subscale of the Emotional Approach Coping Scale (Stanton et al., 2000 Appendix K) was used to assess the participant's habits of processing their emotions. This subscale consists of 4 items scored on a 4-point Likert scale (1 - I usually don't do this at all, 2 - I usually do this a little bit, 3 - I usually do this a medium amount, 4 - I usually do this a lot). Reliability analysis revealed an alpha of .89, which is higher than prior research findings with alphas of .72 (Stanton et al., 2000). Scores were calculated by computing the mean of all items. Higher scores indicate greater emotional processing.

Outcome Measures

In order to maintain consistency with prior research, the outcome measures of satisfaction with life and depression were chosen based on their frequency of use in the studies described above. Additionally, anxiety measures are routinely used in studies of sexual minorities testing the minority stress model (Meyer, 2013) and the psychological mediation framework (Hatzenbuehler, 2009; Hatzenbuehler et al., 2009). More specifically, theory has pointed to

social anxiety as significant in the lives of sexual minorities due to the social aspect of experiencing stigma (Meyer, 2013). Several studies support social anxiety as a concern for sexual minorities (e.g., Burns, Kamen, Lehman, & Beach, 2012; Pachankis & Bernstein, 2012; Pachankis & Goldfried, 2006). Accordingly, social anxiety was measured as a second measure of negative psychological well-being. Finally, quality of life was chosen as a second positive measure of psychological well-being, given that it is used in the studies described above, albeit less frequently than satisfaction with life, and there is currently little evidence regarding positive psychological health among sexual minorities.

***Quality of life*.** The World Health Organization Quality of Life Bref scale (WHOQOL-BREF; The WHOQOL Group, 1998; Appendix L) was used to assess global quality of life. This scale was design to consider several aspects of life that contribute to overall well-being including physical health, psychological health, social relationships, and the environment. This scale consists of 26 questions on a 5-point Likert scale. Analysis revealed high reliability of the total scale with an alpha of .93. Total scores were determined by calculating the mean of all the subscales.

Satisfaction with life. The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; Appendix M) was used as an additional measure of positive psychological well-being. This is a 5 item scales that assesses overall satisfaction with life (e.g., “In most ways, my life is close to ideal”). Participants rate each item on a 7-point Likert scale (1 – strongly disagree to 7 – strongly agree). Analysis revealed high reliability with an alpha of .93 which is consistent with prior research which has found this scale to be reliable with an alpha of .89 (Brewster et al., 2013). Scores were calculated by computing the mean of all items. Higher scores indicate greater satisfaction with life.

Depression. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; Appendix N) were used to assess depressive symptoms among participants. This is a 20 item scale on a 4-point Likert scale (rarely or none of the time to almost all of the time). Analysis revealed high reliability with an alpha of .94 which is higher than prior research with an alpha of .89 (Shapiro et al., 2009). Scores were calculated by computing the sum of all items. Higher scores indicate more depressive symptoms.

***Social Anxiety*.** The Liebowitz Social Anxiety Scale-Self Report (LSAS-SR; Fresco et al., 2001; Appendix O) was used to assess social anxiety. This is a 24 item scale with 2 parts for each item. The first part of each question assesses the fear (0 - never to 3 - severe) that participants have in the situation and the second part assess how often they would avoid (0-never to 3-usually) that situation. This scale has four subscales including social, performance, fear, and avoidance. All subscales have previously shown this scale to be reliable with alphas of .89, .84, .91, and .92 respectively (Wadsworth & Hayes-Skelton, 2015). Current study analysis revealed high reliability with an alpha of .97. Scores were calculated by computing the sum of all items. Higher scores indicate greater social anxiety.

Table 3

Descriptives of Main Study Measures

Measure	***N***	***Min***	***Max***	***M***	***SD***
Quality of Life	170	1.54	4.81	3.55	.67
Satisfaction with Life	170	1	7	4.22	1.61
Depressive Symptoms	169	0	58	20.51	14.09
Social Anxiety	167	0	129	51.73	32.53
Outness	170	1	7	3.65	1.82
Centrality	170	1	7	4.62	1.44
Valence	170	1.67	7	5.51	1.06
Structural Factor	155	0	4	2.05	1.52
Mastery	170	1	4	2.76	.68
Cognitive Flexibility	170	2.42	6	4.49	.73
Social Support	170	1.83	7	5.20	1.19
Family of Choice	106	2.5	7	6.10	.84
Internet Support	170	0	7	4.72	1.73
Self-Compassion	170	1.08	4.76	2.74	.77
Hope	170	0	4	2.95	.69
Community Connectedness	170	0	4	2.63	.91
Connectedness – Internet	170	0	4	2.70	.97
Meaning Making	170	1.43	6	4.32	.98
Emotional Openness	170	.75	4	2.78	.77
Problem-Solving	170	1.5	4	2.96	.57

CHAPTER 3

PLANNED ANALYSES

A preliminary analysis was conducted on the cognitive flexibility scales to determine which should be retained for the subsequent analyses. Bivariate correlations were conducted among the CFI, CFS, outness, and outcome variables for comparison. Next, prior to main study analyses, I conducted bivariate correlations to test for potential covariates to include in main study analyses. Covariates and predictor variables significantly related to outcome variables were retained in subsequent analysis. Main study analyses of boosted regression trees (with all covariates and protective factors) were conducted separately for each outcome variable to determine the relative influence of each predictor variable. Finally, I conducted OLS regression analysis separately for each outcome variable in order to compare results to those of boosted regression. OLS regression also included assessment of collinearity diagnostics.

CHAPTER 4

RESULTS

Correlations

Cognitive flexibility scales. A preliminary analysis revealed the CFS and CFI have similar relationships to outness and outcome variables (see Table 4 for complete results). A bivariate correlation shows a strong relationship between CFS and CFI (r = .82, p < .001). Based on the review of literature it was expected that CFS would have a stronger relationship with outness than CFI; however, neither CFS nor CFI were related to outness (r = .11, p = .17; r = .09, p = .27; respectively). CFS consistently shows stronger correlations to quality of life (r = .52, p < .001), satisfaction with life (r = .48, p < .001), depressive symptoms (r = -.54, p < .001), and social anxiety (r = -.49, p < .001). Thus, CFS was retained for subsequent analyses as the measure for cognitive flexibility.

Table 4
Bivariate Correlations of CFI and CFS

Measure	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. CFS	--	.82***	.11	.52***	.48***	-.54***	-.49***
2. CFI		--	.09	.43***	.36***	-.46***	-.45***
3. Outness			--	.29***	.18*	-.16*	-.3***
4. Quality of Life				--	.78***	-.75***	-.59***
5. Satisfaction with Life					--	-.62***	-.38***
6. Depression						--	.56***
7. Social Anxiety							--

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

Community Connectedness. Due to concerns that certain subgroups within the LGBT community would not be as connected based on identity characteristics as described above, bivariate correlations with community connectedness were run for sex, sexual orientation, race, and age. Community connectedness was not correlated with identity characteristics tested.

Covariate testing. Bivariate correlations were conducted for the potential covariates of sex, race, sexual orientation, age, outness, valence, and centrality (see Table 5 for complete results). All outcome variables were significantly related to outness. Outness was retained for the remainder of subsequent analyses. Valence was significantly related to both quality of life and depression and was retained for all subsequent analyses involving both outcome variables. Sexual orientation ("other" category) was uniquely related to depression and was retained for all subsequent analyses of depression. Social anxiety was unique in that the additional covariates of

both sex and age were significantly related to social anxiety. Sex and age were retained for all subsequent analyses with the outcome variable social anxiety.

Table 5

Bivariate Correlation of Covariates

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Quality of Life	--	.78***	-.75***	-.57***	-.06	.01	.01	.07	-.10	.07	.29***	.09	.25**
2.Satisfaction with Life		--	-.62***	-.38***	.08	.02	.11	-.06	-.06	-.02	.18*	.06	.15
3.Depression			--	.56***	.08	.05	-.06	-.09	.18*	-.16*	-.16*	-.02	-.26**
4.Social Anxiety				--	.25**	-.01	.06	-.14	.10	-.24**	-.30**	-.01	-.10
5.Sex (female)					--	.1	.14	-.2*	.07	-.23**	-.06	-.03	.13
6.Race (white)						--	-.11	.07	.05	.08	.13	.08	.08
7.Bisexual							--	-.68***	-.41***	-.08	-.34***	-.13	-.11
8.Homosexual								--	-.39***	.24**	.43***	.14	.16*
9.Other Orientation									--	-.2*	-.11	-.01	-.06
10.Age										--	.04	.18*	.14
11. Outness											--	.19*	.26**
12.Centrality												--	.40***
13.Valence													--

Note: $^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$

Preliminary bivariate correlations of protective factors. Prior to testing main study analyses, bivariate correlations were conducted for protective factors and outcome variables (see Table 6 for complete results). Only those variables that are significantly correlated with the outcome variables were retained for subsequent analyses. Results indicate that for all outcome variables (quality of life, satisfaction with life, depressive symptoms, and social anxiety) the following protective factors are significantly correlated and were used in the remainder of study analyses: mastery, cognitive flexibility, social support, family of choice, self-compassion, hope, meaning making, emotional openness, and problem solving. Additionally, quality of life, satisfaction with life, and depressive symptoms were significantly related to community connectedness. Anxiety was the only outcome variable not related to community connectedness. Structural factors, internet social support, and community connectedness on the internet were not significantly related to outcome variables and were dropped from further analyses.

Bivariate correlations did not indicate a high level of collinearity (> .80; Field, 2009; Grimm & Yarnold, 2010) among the predictor variables. However, the $r > .80$ cutoff may fail to reveal less blatant instances of collinearity (Field, 2009; Grimm & Yarnold, 2010). There were numerous bivariate relationships at a moderate level of collinearity (e.g., mastery & hope; mastery & cognitive flexibility; hope & cognitive flexibility). In order to be statistically conservative, boosted regression trees were used. This was followed by a cross validation of OLS regression including multicollinearity diagnostics.

Table 6

Bivariate Correlation of Main Study Variables

	14	15	16	17	18	19	20	21	22	23	24	25	26
1.Quality of Life	-.01	.71***	.52***	.46***	.44***	.06	.59***	.66***	.30***	.09	.53***	.41***	.42***
2.Satisfaction with Life	.06	.57***	.48***	.51***	.37***	.08	.53***	.65***	.30***	.08	.50***	.48***	.38***
3.Depression	-.02	-.64***	-.54***	-.39***	-.30**	-.08	-.62***	-.59***	-.19*	-.12	-.52***	-.41***	-.32***
4.Anxiety	.01	-.46***	-.49***	-.23**	-.29**	-.02	-.49***	-.43***	-.05	-.01	-.31***	-.27***	-.35***
14. Structural Factor	--	-.01	.05	.15	.23*	-.1	-.08	.04	.1	.01	.07	-.01	-.11
15.Mastery		--	.67***	.35***	.35***	.01	.5***	.61***	.21**	.08	.47***	.31***	.35***
16.Cognitive Flexibility			--	.39***	.48***	.07	.47***	.66***	.13	.10	.62***	.39***	.46***
17.Social Support				--	.57***	.29***	.26**	.39***	.28***	.17*	.35***	.32***	.26**
18.Family of Choice					--	.09	.14	.16***	.25*	.15	.35***	.27**	.36***
19.Internet Support						--	.08	.05	.07	.47**	.16*	.18*	.09
20.Self-Compassion							--	.47***	.31***	.23**	.59***	.48***	.28***
21.Hope								--	.22**	.14	.57***	.44***	.49***
22.Community Connected									--	.38**	.24**	.25**	.07
23. Connected-Internet										--	.24**	.28***	.05
24.Meaning Making											--	.6***	.42***
25.Emotional Openness												--	.32***
26.Problem-solving													--

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

Main Study Analyses of Protective Factors and Psychological Well-being

Boosted regression trees (BRT) were used to test the main research questions of this dissertation. BRT combine features from statistical and machine learning approaches which are applied to model building (Elith, Leathwick, & Hastie, 2008). Whereas ordinary least squares (OLS) regression result in a single model, the BRT "grow" several simple trees using the adaptive approach of machine learning and combines them for prediction using the dominant patterns (Elith, Leathwick, & Hastie, 2008). Additionally, BRT are robust against multicollinearity because they do not control for, or hold constant, the other variables in the model and allow for non-linear relationships, unlike OLS regression (Dormann et al., 2013; Leathwick, Elith, Chadderton, Rowe & Hastie, 2008). Additionally, BRT are robust to outliers and missing data in the predictor variables unlike OLS regression. However, over-fitting is a concern with BRT (Elith, Leathwick, & Hastie, 2008).

Boosted regression trees. Relationships between psychological well-being and protective factors were analyzed using BRT. All models were fitted to allow interactions, using a tree complexity of 5 (allowing up to a 5-way interaction) and using a learning rate of .0005. The learning rate is relatively slow allowing for more nuance in the data to be detected. However, a disadvantage of this parameter is that over-fitting may occur and the data will be trained to fit noise, or error, in the data rather than true variance. To protect against over-fitting, cross-validation was used. A two-fold cross validation was used to determine the optimal number of trees for each model. This type of cross validation checks the trained data model against the original data. The optimal number of trees occurs when the trained data and the original data converge at peak performances of both. The results from point of convergence are then reported. R^2 was calculated for each model to assess the model fit.

***Quality of life*.** Mastery, cognitive flexibility, social support, family of choice, self-compassion, hope, community connectedness, meaning making, emotional openness, coping, outness and valence were entered as predictor variables for quality of life. The best iteration of training data to cross validation data occurs at 4757 (see Figure 2). This model explained 54.4% of the variance in quality of life scores (R^2 = .544). The protective factors with the most relative influence on quality of life are mastery (30.29%) and hope (28.15%). The relative influence of the remaining variables is as follows: self-compassion = 8.47%, social support = 6.28%, outness = 6.07%, family of choice = 5.17%, meaning making = 3.46%, community connectedness = 3.33%, coping = 2.71%, emotional openness = 2.1%, cognitive flexibility = 2.04%, valence = 1.91% (see Figure 3).

The plots (a - l) in figure 4 show each variable's relationship with quality of life. Each variable has a pair of plots. The first in each pair is a scatterplot of data points showing the relationship of protective factor variable scores to quality of life scores with a super imposed local regression smoother to help identify patterns. The second plot in each pair shows the marginal effects of each protective factor on quality of life. This is in contrast to conditional effects that OLS regression generates. Since BRT never holds variables constant, these effects are assessed over all values of other protective factors. This is the advantage of BRT as it allows for the generation of importance values. The plots show similarities in functional form between the scatter plots and the BRT. However, the strength in similarities tends to be weaker in variables of lesser importance. For the variables of family of choice, meaning making, community connectedness, problem solving, emotional openness, cognitive flexibility, and valence the BRT did not closely imitate the scatterplots. Conversely, the marginal effects of variables with the most relative influence, mastery, hope, self-compassion, social support, and

outness, did adequately imitate the scatterplots. Additionally, mastery and hope appear to have nonlinear relationships with quality of life.

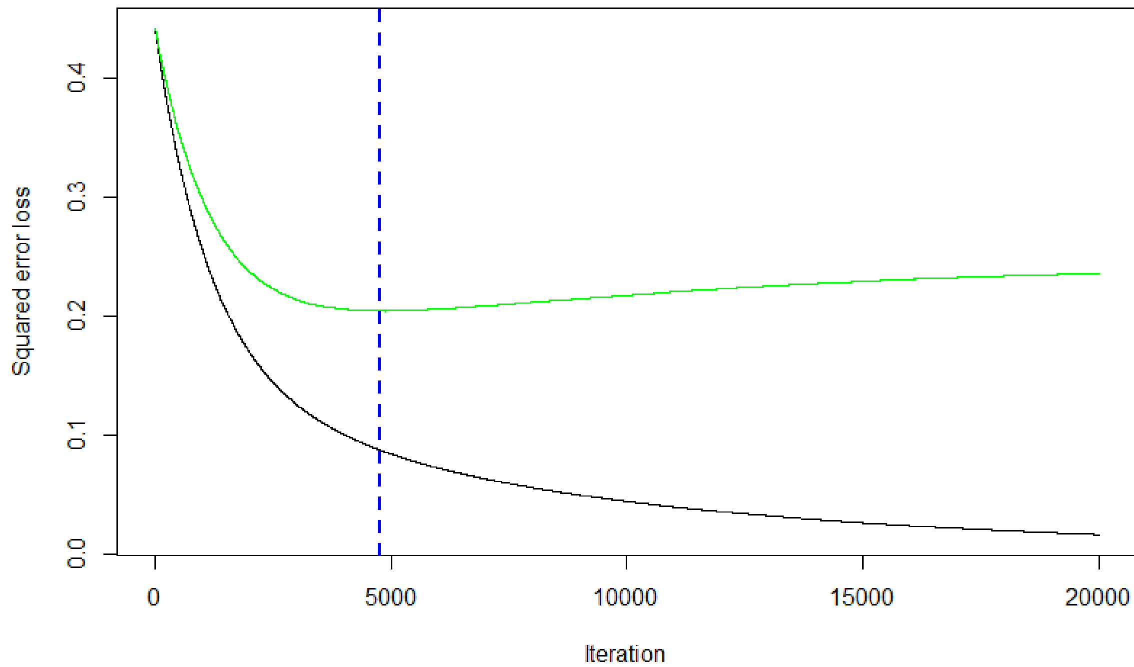


Figure 2
Quality of Life Boosted Regression Trees Best Iteration

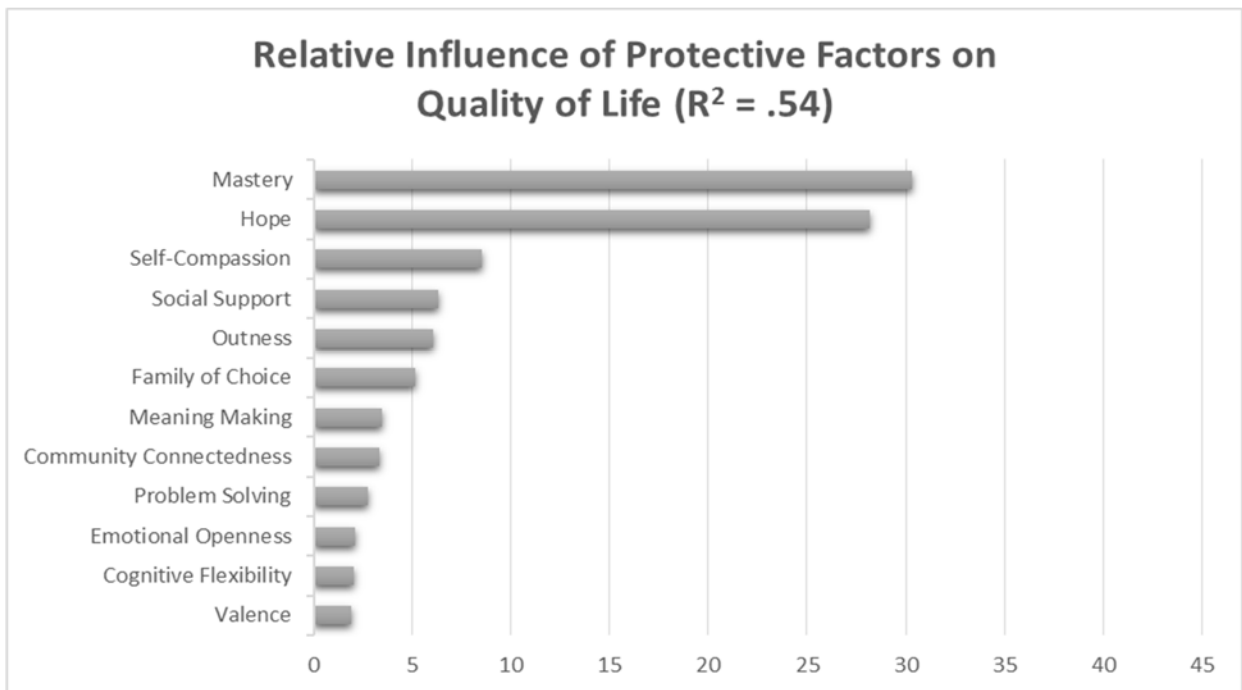


Figure 3
Relative Influence of Protective Factors on Quality of Life

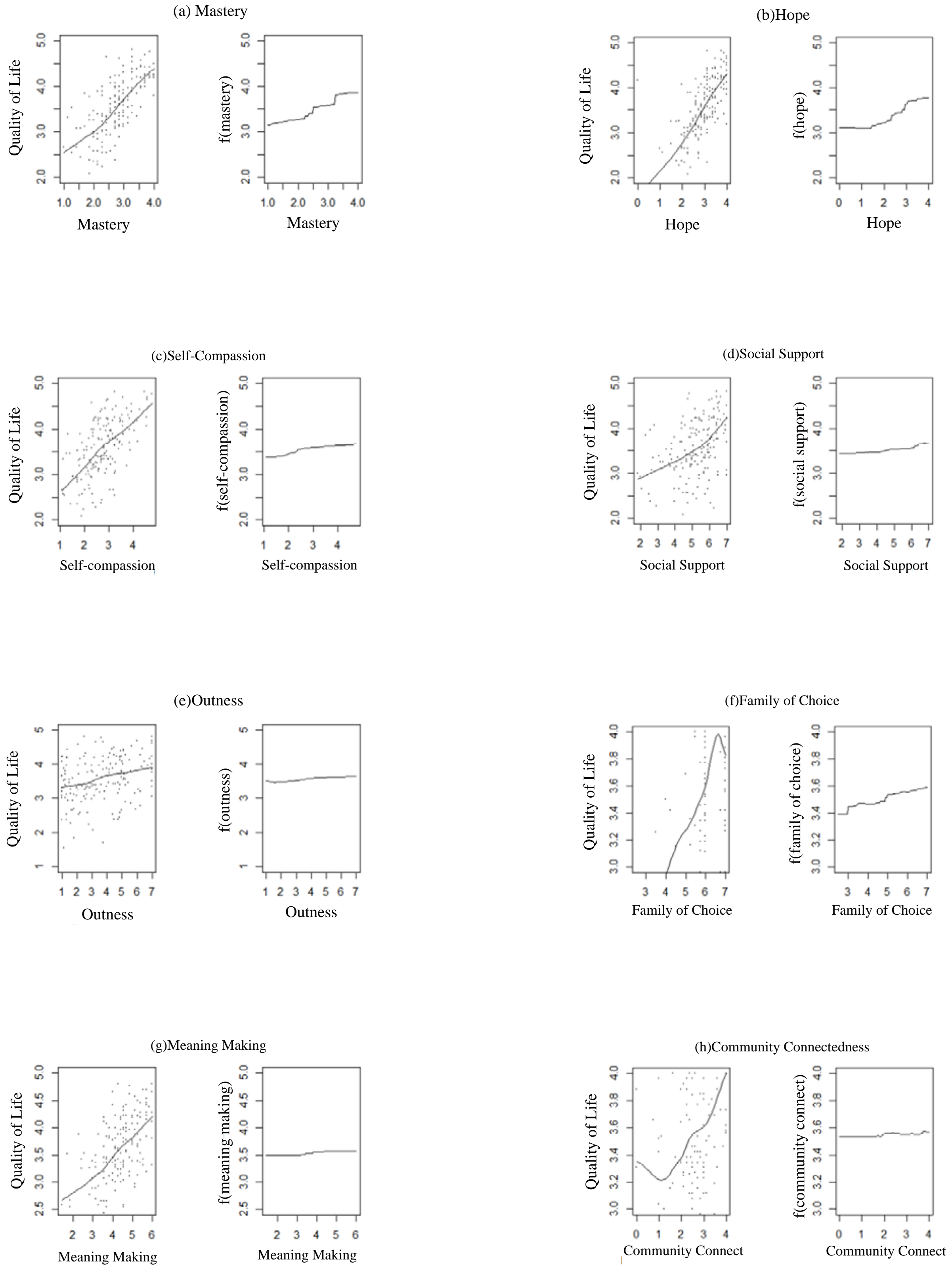


Figure 4

Scatter Plots and Marginal Effects of Protective Factors for Quality of Life

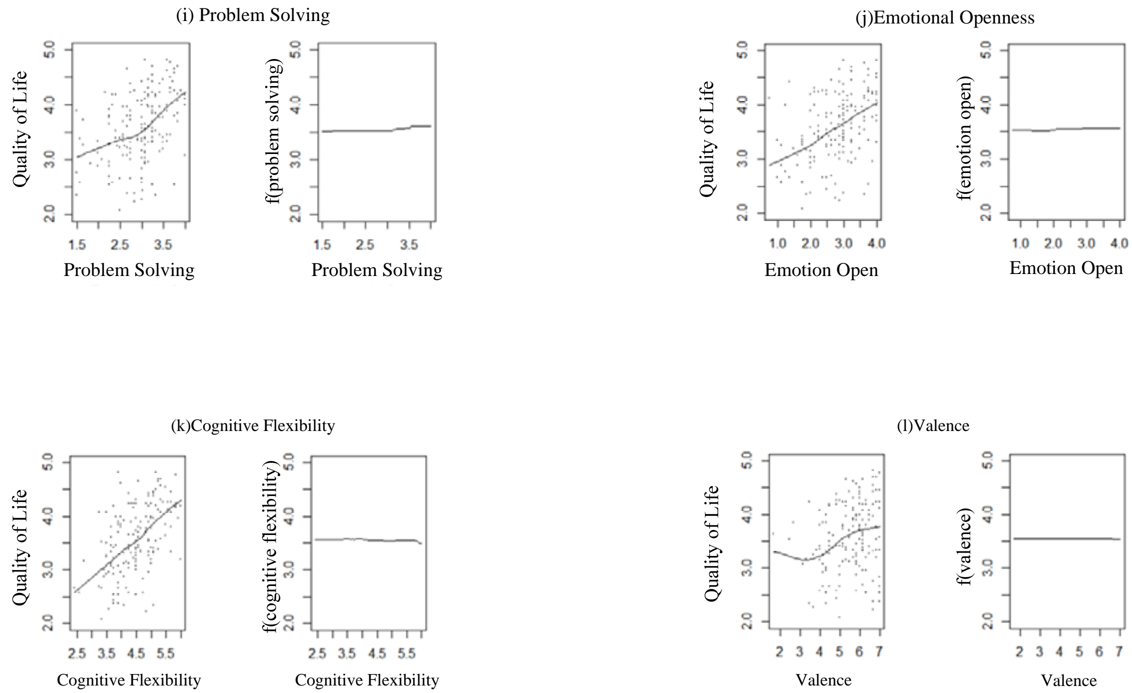


Figure 4 (continued)

Satisfaction with life. Mastery, cognitive flexibility, social support, family of choice, self-compassion, hope, community connectedness, meaning making, emotional openness, coping, and outness were entered as predictor variables for satisfaction with life. The best iteration of training data to cross validation data occurs at 5513 (see Figure 5). This model explained 48.4% of the variance in satisfaction with life scores ($R^2 = .484$). The protective factors with the most relative influence on satisfaction with life are hope (39.56%), social support (12.45%), and mastery (10.36%) (see Figure 6).

The plots (a - k) in figure 7 show each variable's relationship with satisfaction with life. Each variable has a pair of plots. The first in each pair is a scatterplot of data points showing the relationship of protective factor variable scores to satisfaction with life scores with a super imposed local regression smoother to help identify patterns. The second plot in each pair shows

the marginal effects (not conditional) of each protective factor on satisfaction with life. The plots show similarities in functional form between the scatter plots and the BRT. However, the strength in similarities tends to be weaker in variables of lesser importance. For the variables of self-compassion, meaning making, cognitive flexibility, family of choice, community connectedness, outness, and problem solving the BRT did not imitate the scatterplots closely or at all. Conversely, the marginal effects of variables with the most relative influence, hope, social support, mastery, and emotional openness, did adequately imitate the scatterplots. Additionally, hope, mastery, and emotional openness appear to have nonlinear relationships with satisfaction with life.

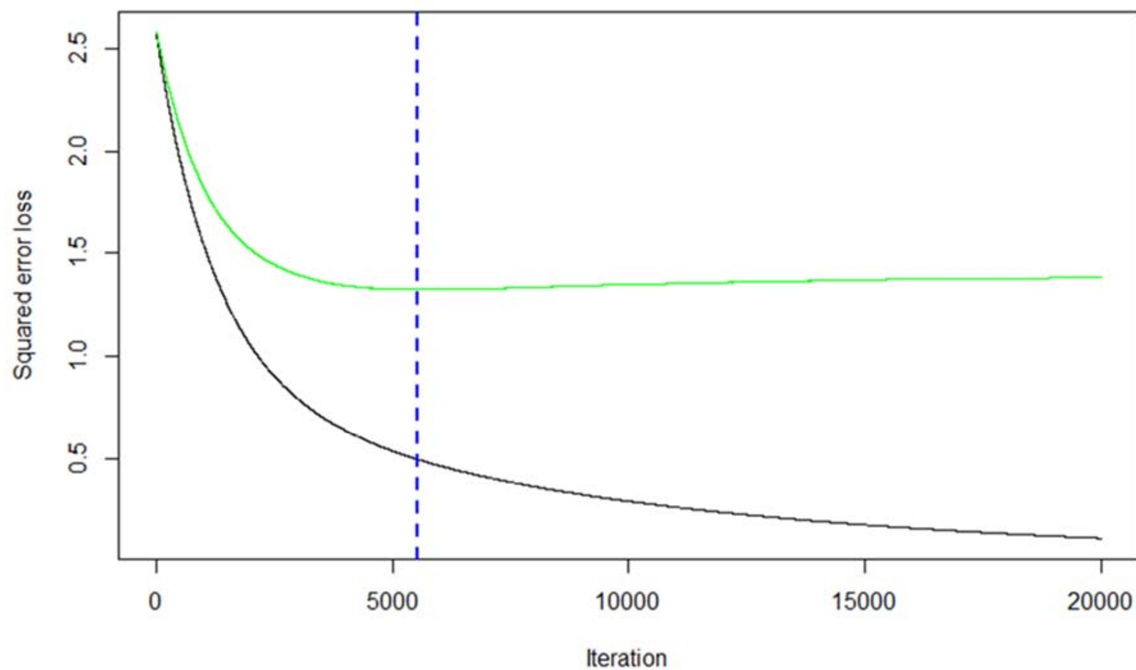


Figure 5
Satisfaction with Life Boosted Regression Trees Best Iteration

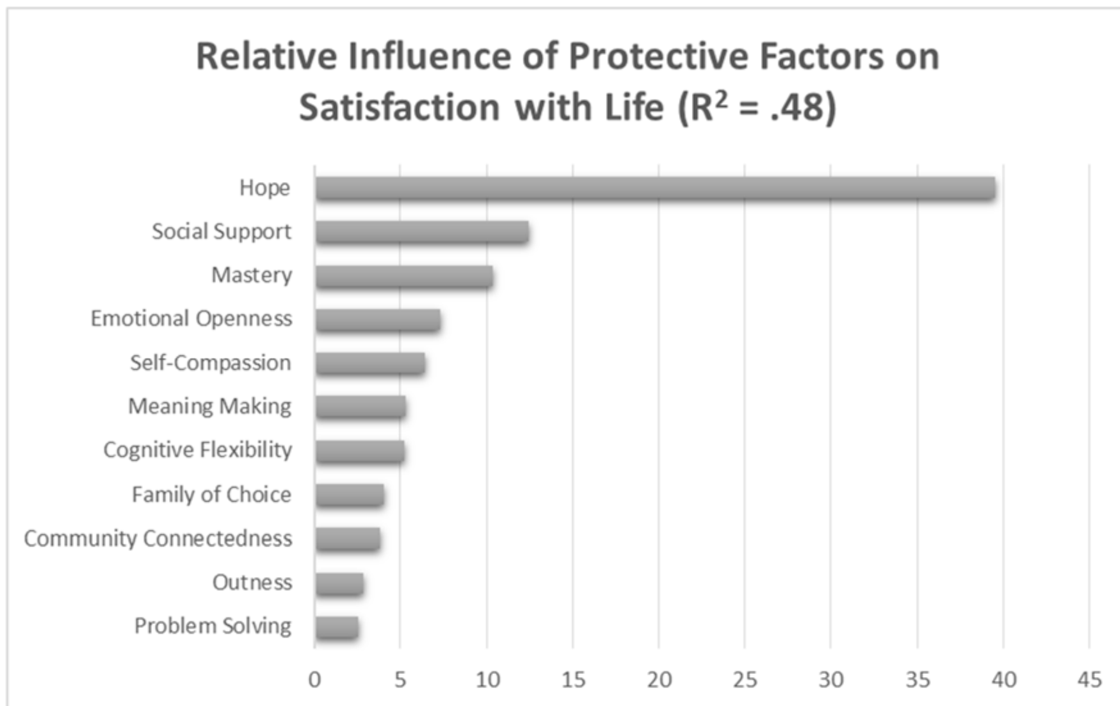


Figure 6
Relative Influence of Protective Factors on Satisfaction with Life

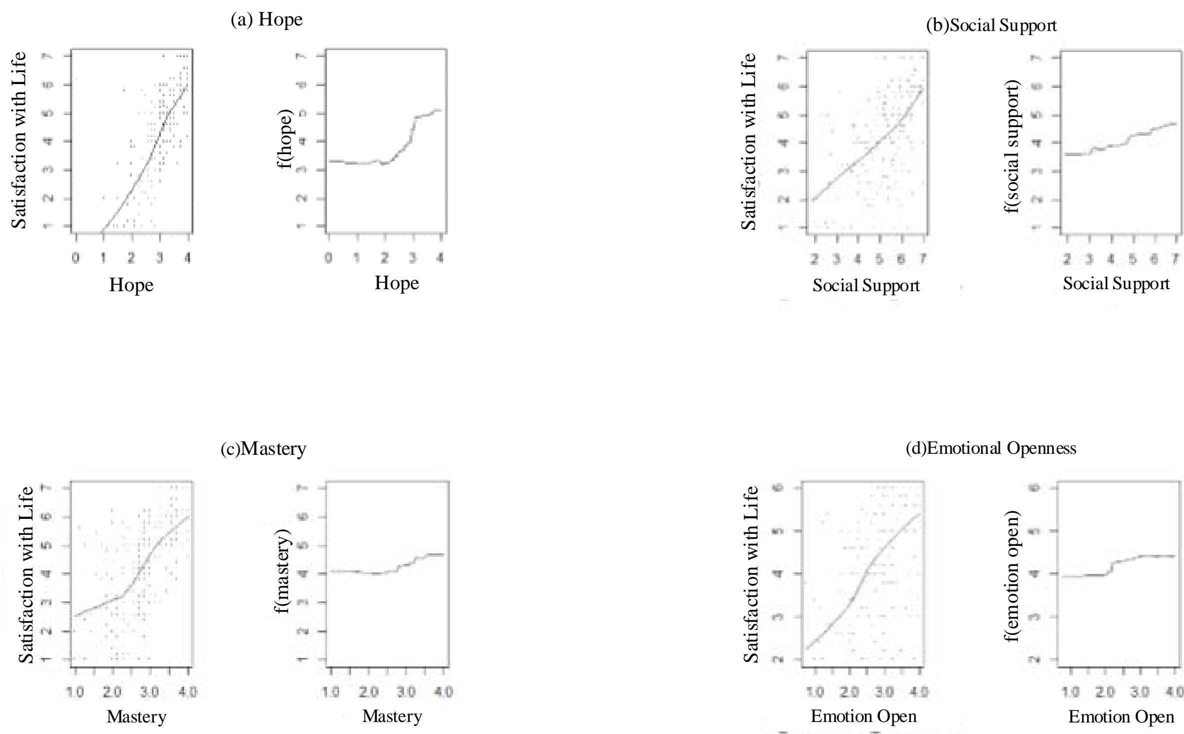
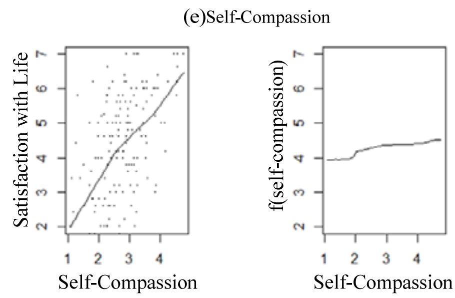
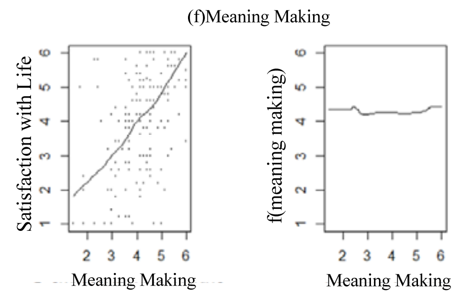
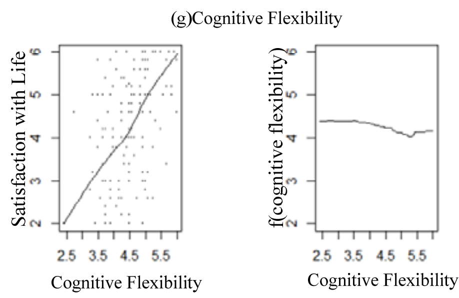
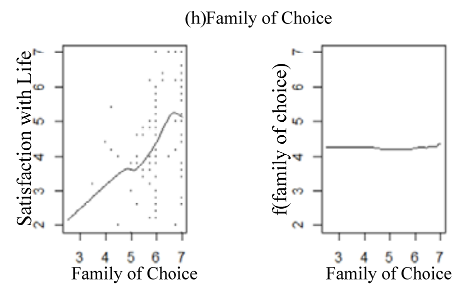


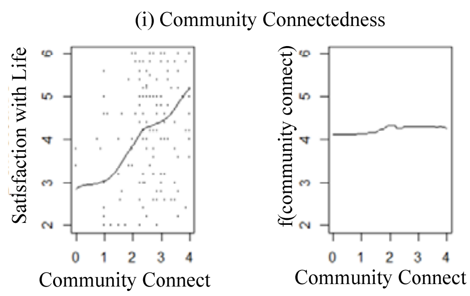
Figure 7
Scatter Plots and Marginal Effects of Protective Factors for Satisfaction with Life

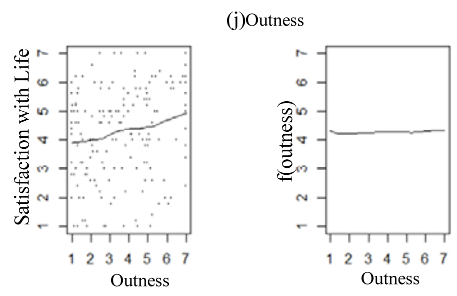












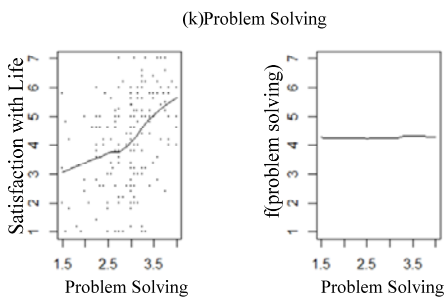


Figure 7 (continued)

***Depressive symptoms*.** Mastery, cognitive flexibility, social support, family of choice, self-compassion, hope, community connectedness, meaning making, emotional openness, coping, outness, valence, and sexual orientation were entered as predictor variables for depressive symptoms. The best iteration of training data to cross validation data occurs at 5657 (see Figure 8). This model explained 43.8% of the variance in depression scores ($R^2 = .438$). The protective factors with the most relative influence on depression were mastery (24.98%), self-compassion (17.7%), and hope (16.84%). The relative influence of the remaining variables is as follows: social support = 6.32%, meaning making = 5.37%, community connectedness = 4.93%, emotional openness = 3.74%, cognitive flexibility = 3.51%, coping = 3.4%, age = 3.4%, outness = 3.31%, valence = 2.9%, family of choice = 2.02%, other sexual orientations = 1.57% (see Figure 9).

The plots (a - n) in figure 10 show each variable's relationship with depression. Each variable has a pair of plots. The first in each pair is a scatterplot of data points showing the relationship of protective factor variable scores to depression scores with a super imposed local regression smoother to help identify patterns. The second plot in each pair shows the marginal effects (not conditional) of each protective factor on depression. The plots show similarities in functional form between the scatter plots and the BRT. However, similarities do not appear in variables of lesser importance. For the variables of meaning making, community connectedness, emotional openness, cognitive flexibility, problem solving, age, outness, valence, family of choice, and other orientations, the BRT did not imitate the scatterplots. Conversely, the marginal effects of variables with the most relative influence, mastery, self-compassion, hope, and social support, did adequately imitate the scatterplots. Additionally, these top factors appear to have nonlinear relationships with depression.

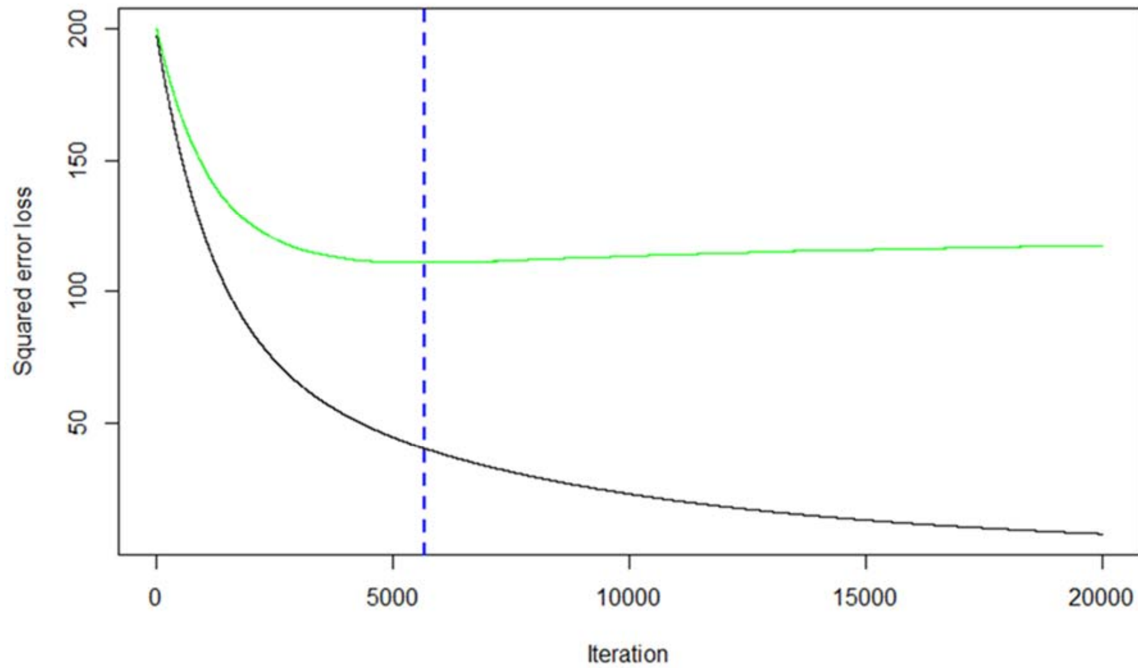


Figure 8
Depressive Symptoms Boosted Regression Best Iteration

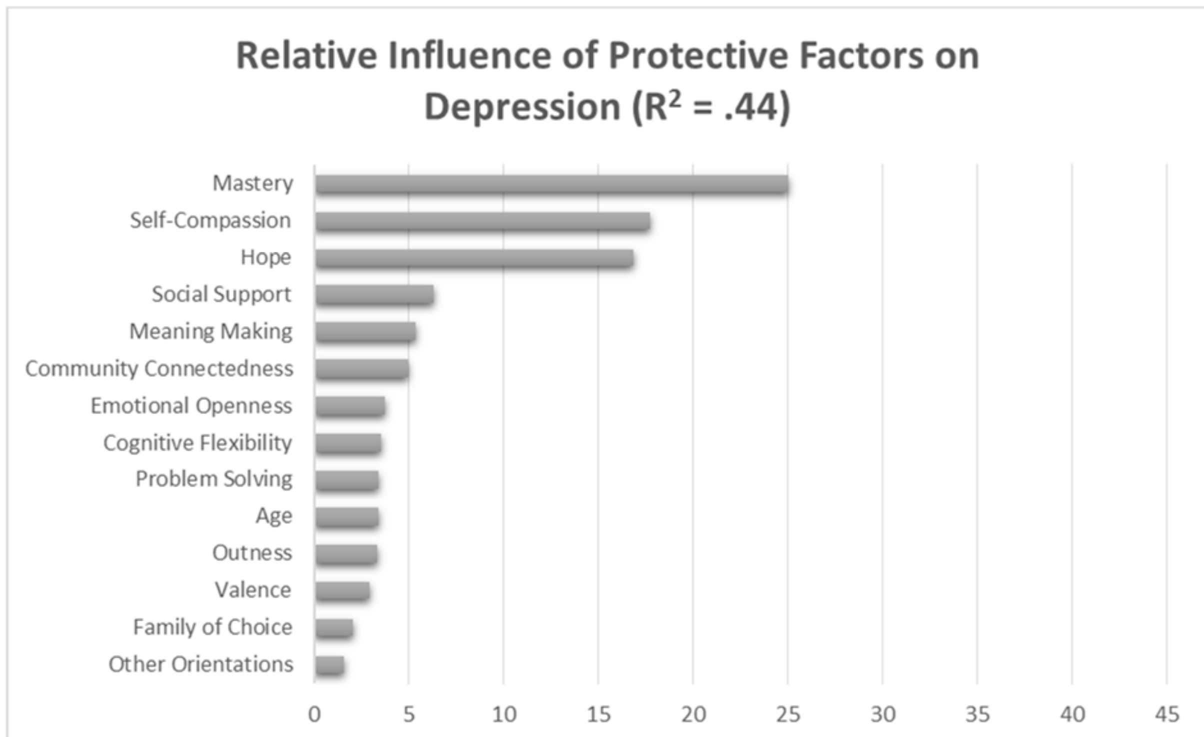


Figure 9
Relative Influence of Protective Factors on Depression

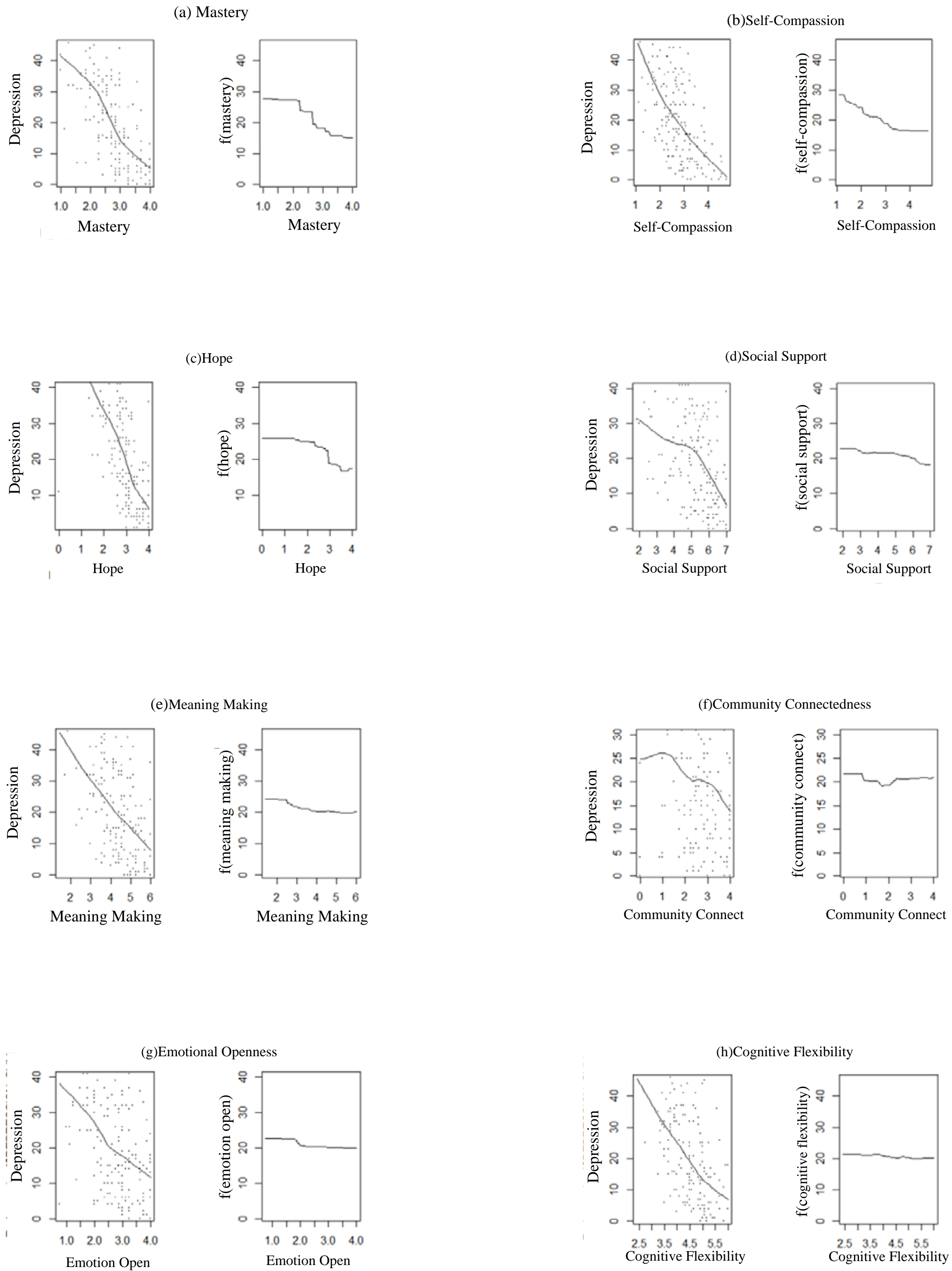


Figure 10

Scatter Plots and Marginal Effects of Protective Factors for Depression

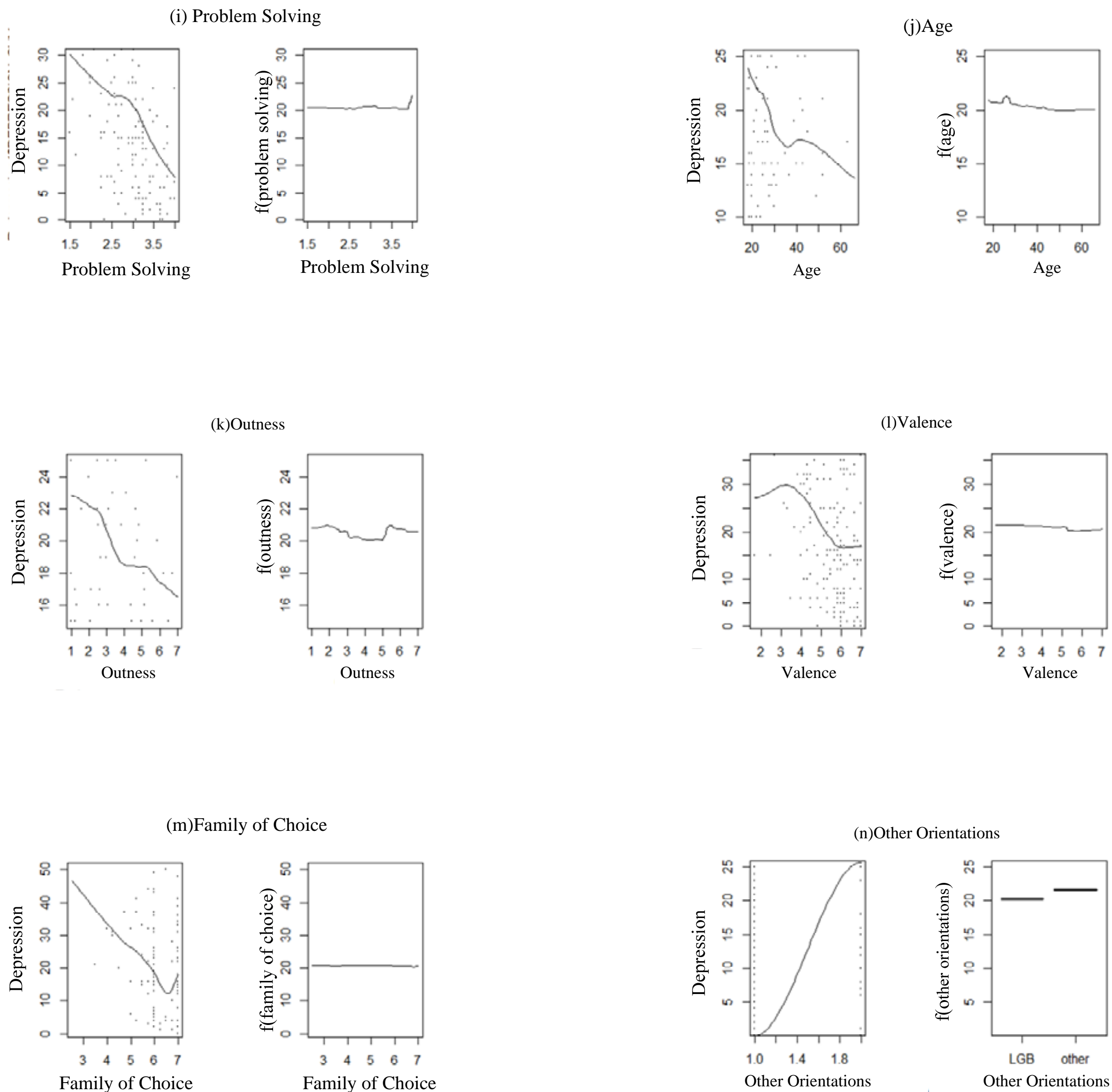


Figure 10 (continued)

Anxiety. Mastery, cognitive flexibility, social support, family of choice, self-compassion, hope, meaning making, emotional openness, coping, outness, sex, and age were entered as predictor variables for anxiety. The best iteration of training data to cross validation data occurs at 3690 (see Figure 11). This model explained 26.1% of the variance in anxiety scores (R^2 = *.261*). The protective factors with the most relative influence on anxiety were self-compassion (16.15%), cognitive flexibility (16.02%), and outness (11.77%). The relative influence of the

remaining variables is as follows: mastery = 9.6%, coping = 8.34%, family of choice = 8.15%, social support = 7.99%, age = 6.73%, hope = 6.64%, emotional openness = 3.14%, meaning making = 2.95%, sex = 2.54 (see Figure 12).

The plots (a - l) in figure 11 show each variable's relationship with anxiety. Each variable has a pair of plots. The first in each pair is a scatterplot of data points showing the relationship of protective factor variable scores to anxiety scores with a super imposed local regression smoother to help identify patterns. The second plot in each pair shows the marginal effects (not conditional) of each protective factor on anxiety. The plots show similarities in functional form between the scatter plots and the BRT. While the strength in similarities tends to be weaker in variables of lesser importance, there are only a few variables that show this weak or non-existent replication of the scatterplots. For the variables of family of choice, age, emotional openness, and meaning making, the BRT did not imitate the scatterplots at all. Conversely, the marginal effects of all other variables did adequately imitate the scatterplots. Additionally, self-compassion, cognitive flexibility, outness, problem solving, social support, and hope appear to have nonlinear relationships with anxiety.

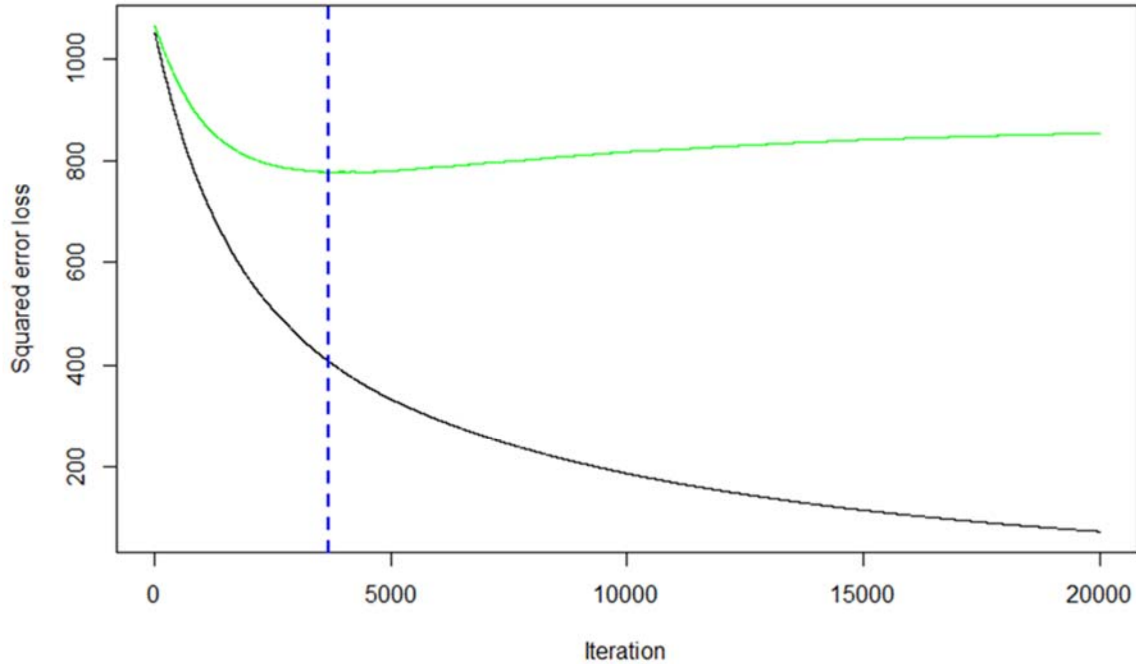


Figure 11
Anxiety Boosted Regression Best Iteration

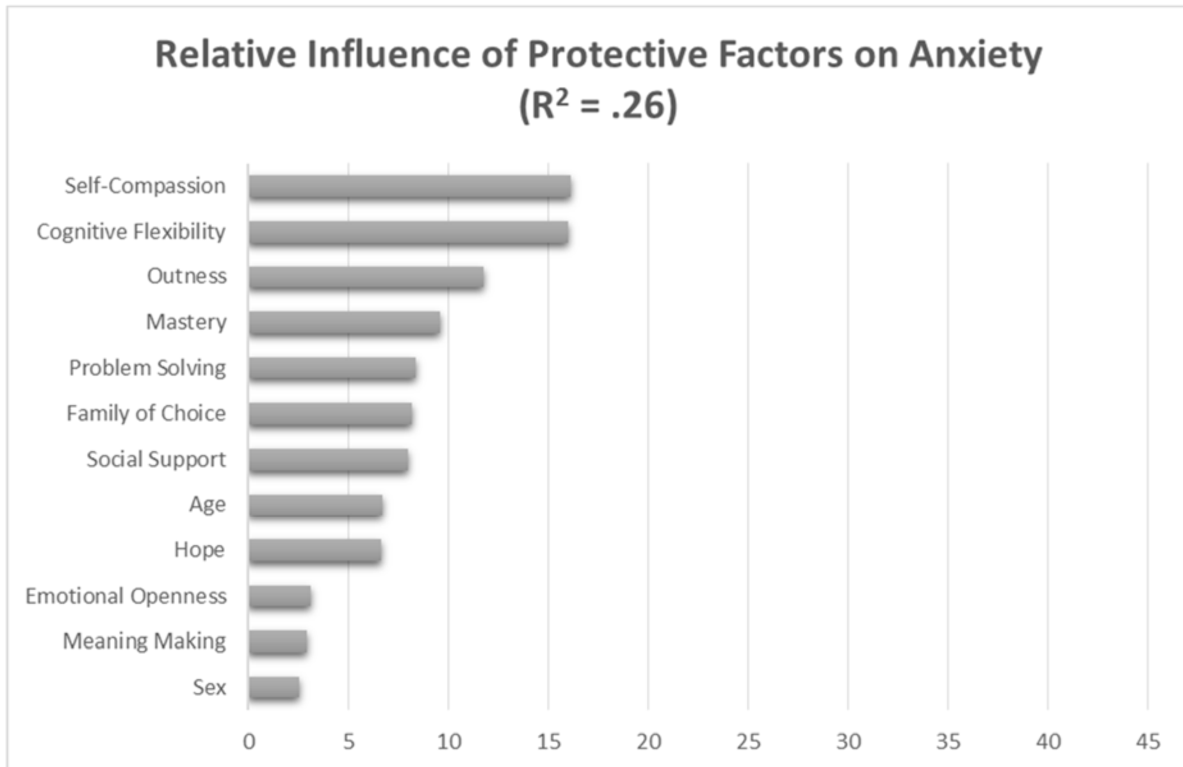


Figure 12
Relative Influence of Protective Factors on Anxiety

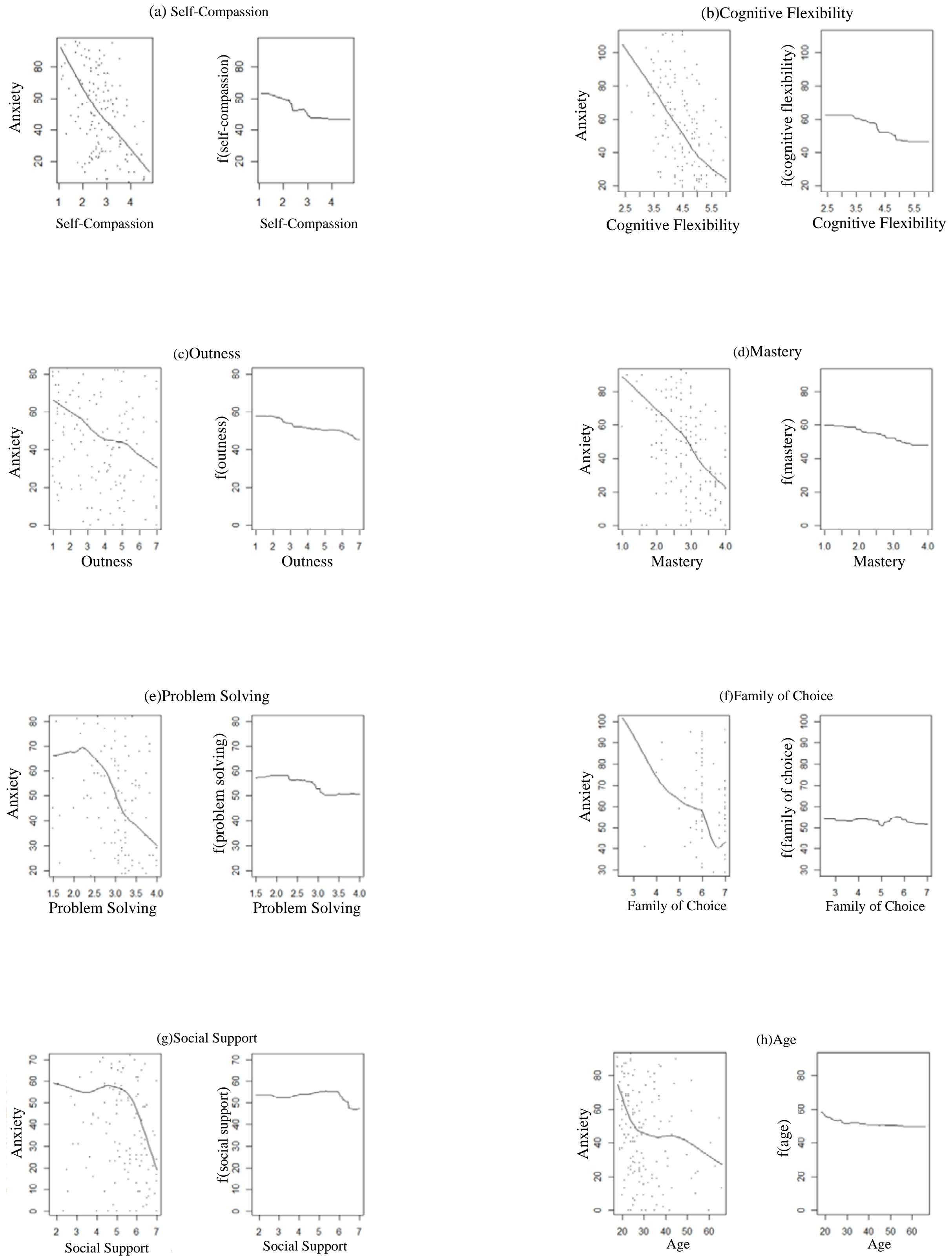


Figure 13

Scatter Plots and Marginal Effects of Protective Factors for Anxiety

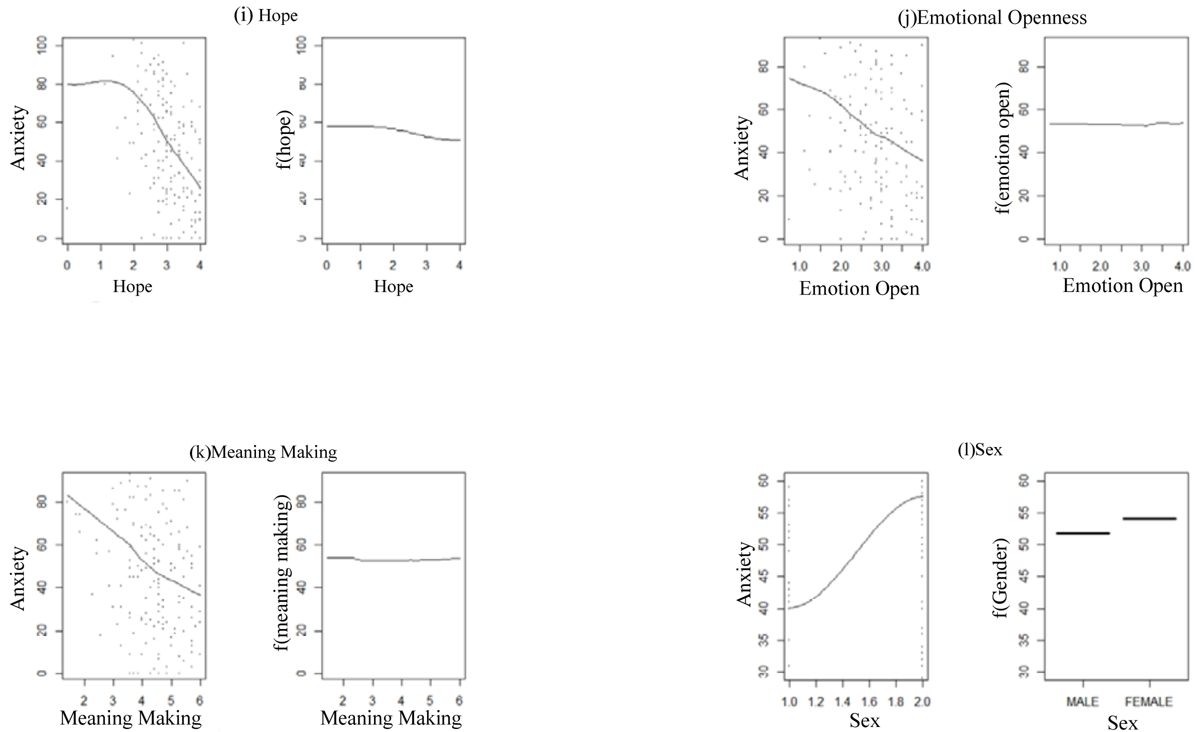


Figure 13 (continued)

Comparison to OLS Regression

OLS regression. Traditional OLS regression models were used to compare estimation results BRT results (Schonlau, 2005). This was used as a comparison analysis and not the main study analysis due to the sensitivity to multicollinearity that is characteristic in OLS regression (Field, 2009; Grimm & Yarnold, 2010). Thus, multicollinearity diagnostics of tolerance and variance inflation factors (VIF) were calculated for each OLS regression analysis. In line with Myers (1990) suggestion of identifying multicollinearity when tolerance values are below .10 and VIF values are above 10, no instances of multicollinearity were detected across all analyses. Additionally, OLS regression is limited to assessing linear relationships among variables. This may misrepresent the relationships of the variables to the outcomes given that the BRT revealed many variables to have non-linear relationships.

Given that this study was designed for BRT, the family of choice variable created an obstacle for direct comparison of the BRT to the OLS regression. Participants were asked if they had a family of choice and if so they were then taken to the family of choice scale. This left 65 participants without a score for family of choice. While the BRT is robust against this type of missing data OLS regression is not. Consequently, the sample size for the following OLS regression is 65 participants smaller than that for the BRT. Several other approaches to this problem were considered. 1) Using the categorical variable of whether or not a participant has a family of choice would not be answering the same question because there are many reasons why one may or may not have a family of choice. 2) Removing the family of choice variable from the OLS regression would retain the sample size, but the comparison would still not be exact because of the removed variable. 3) Multiple imputation involves inputting "plausible estimates" where there is current missing data (Little, Jorgensen, Lang, & Moore, 2013). This was not used because there is no score to be obtained; thus, there is no plausible estimate to impute. Using multiple imputation implies that the participants theoretically have a score when that is not the case for families of choice.

Quality of life. The analysis regressed quality of life scores on the predictor variables (see Table 7). The results were significant ($F[12,93] = 19.87$, $p < .001$), and explained 71.9% of the variance in quality of life scores ($R^2 = .719$). Specifically, mastery ($\beta = .30$, $se = .09$, $p < .01$), cognitive flexibility ($\beta = -.26$, $se = .09$, $p < .01$), social support ($\beta = .11$, $se = .05$, $p < .05$), self-compassion ($\beta = .19$, $se = .07$, $p < .01$), and hope ($\beta = .42$, $se = .11$, $p < .001$) were the significant predictors in the model.

Satisfaction with life. The analysis regressed satisfaction with life scores on the predictor variables (see Table 7). The results were significant ($F[11,94] = 17.42$, $p < .001$), and explained

67% of the variance in satisfaction with life ($R^2 = .670$). Social support ($\beta = .44$, $se = .12$, $p < .001$) and hope ($\beta = 1.37$, $se = .27$, $p < .001$) were the only significant predictors in the model.

Table 7
Multiple Regression Analysis Summary for Psychological Well-Being and Protective Factors

	Quality of Life						Satisfaction with Life					
Variable	*B*	*se*	*β*	R^2	Tol	VIF	*B*	*se*	*β*	R^2	Tol	VIF
Model				.72						.67		
Outness	.03	.02	.09		.73	1.36	-.01	.06	-.01		.81	1.23
Valence	.01	.04	.02		.65	1.53	N/A	N/A	N/A		N/A	N/A
Mastery	.30**	.09	.30		.38	2.64	.12	.23	.05		.38	2.62
Cognitive Flexibility	-.27**	.09	-.30		.31	3.26	-.36	.22	-.18		.36	3.17
Social Support	.12*	.05	.17		.55	1.83	.44**	.12	.28		.56	1.77
Family of Choice	.12	.06	.15		.51	1.98	-.08	.15	-.04		.51	1.95
Self-Compassion	.2**	.07	.24		.43	2.32	.29	.17	.15		.43	2.31
Hope	.42***	.11	.43		.25	4.06	1.37***	.27	.61		.25	4.00
Community Connectedness	-.06	.04	-.9		.79	1.23	-.03	.10	-.02		.80	1.25
Meaning Making	-.01	.06	-.02		.33	3.04	-.13	.15	-.09		.33	3.01
Emotional Openness	.01	.07	.01		.45	2.22	.26	.16	.14		.47	2.14
Problem-solving	.07	.09	.06		.56	1.78	.13	.22	.05		.56	1.77

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

Depression. The analysis regressed depression scores on the predictor variables (see Table 8). The results were significant (F[14,91] = *13.03*, $p < .001$), and explained 66.7% of the variance in depression scores ($R^2 = .667$). Specifically, other sexual orientation ($\beta = .6.07$, $se = 2.28$, $p < .01$), mastery ($\beta = -5.9$, $se = 2.19$, $p < .01$), social support ($\beta = -2.9$, $se = 1.23$, $p < .05$), self-compassion ($\beta = -5.09$, $se = 1.71$, $p < .01$), hope ($\beta = -8.86$, $se = 2.67$, $p < .01$), community connectedness ($\beta = 2.67$, $se = 1.01$, $p < .01$), and coping ($\beta = 5.29$, $se = 2.17$, $p < .05$) were the significant predictors in the model.

Social Anxiety. The analysis regressed anxiety scores on the predictor variables (see Table 8). The results were significant (F[12,90] = 5.69, $p < .001$), and explained 43.1% of the variance in social anxiety scores ($R^2 = .431$). Self-compassion ($\beta = -10.81, se = 4.92, p < .05$) and meaning making ($\beta = 8.67, se = 4.32, p < .05$) were the significant predictors in the model.

Table 8

Multiple Regression Analysis Summary for Psychological Distress and Protective Factors

	Depressive Symptoms						Social Anxiety					
Variable	*B*	*se*	*β*	R^2	Tol	VIF	*B*	*se*	*β*	R^2	Tol	VIF
Model				.66						.66		
Sex (female)	N/A	N/A	N/A		N/A	N/A	3.15	6.31	.04		.85	1.18
Other Orientations	6.34**	2.26	.19		.84	1.19	N/A	N/A	N/A		N/A	N/A
Age	N/A	N/A	N/A		N/A	N/A	-.16	.31	-.05		.81	1.23
Outness	.68	.56	.09		.73	1.34	-1.58	1.56	-.09		.81	1.24
Valence	.04	1.03	>.01		.65	1.54	N/A	N/A	N/A		N/A	N/A
Mastery	-6**	2.19	-.27		.38	2.65	-11.56	6.39	-.24		.38	2.67
Cognitive Flexibility	2.44	2.12	.13		.31	3.27	-8.95	6.03	-.21		.33	3.02
Social Support	-2.73*	1.22	-.18		.55	1.84	-.86	3.54	-.03		.55	1.82
Family of Choice	-.77	1.49	-.04		.49	2.02	-2.55	4.37	-.07		.50	1.99
Self-Compassion	-5.42**	1.68	-.30		.42	2.37	-10.81*	4.92	-.27		.42	2.37
Hope	-8.43**	2.64	-.39		.24	4.16	-1.89	7.79	-.04		.24	4.21
Community Connectedness	2.68**	1.01	.18		.79	1.27	N/A	N/A	N/A		N/A	N/A
Meaning Making	-2.23	1.53	-.16		.32	3.17	8.67*	4.32	.27		.34	2.94
Emotional Openness	1.23	1.59	.07		.45	2.22	-2.33	4.62	-.06		.46	2.17
Problem-solving	5.1*	2.16	.19		.56	1.78	-6.49	6.44	-.11		.56	1.78

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

Statistical Summary

The three most influential protective factors for quality of life were mastery, hope, and self-compassion, which were all significant in the OLS regression. The three most influential protective factors for satisfaction with life were hope, social support, and mastery. Of these only hope and social support were significant in the OLS regression. The three most influential protective factors for depression were mastery, self-compassion, and hope, which were all significant in the OLS regression. The three most influential protective factors for social anxiety were self-compassion, cognitive flexibility, and outness. Of these, only self-compassion was significant in the OLS regression. Thus, hope and self-compassion are the most influential and consistent protective factors across three of the four outcome variables. Mastery is less consistent in two of the four outcome variables. Finally, social support is the last of the top four protective factors showing high relevance and significance in one of the four outcome variables.

CHAPTER 5

DISCUSSION

Most theoretical models on psychological well-being of sexual minorities to date explore the processes by which stigma leads to psychological distress (e.g., Frost, 2011; Hatzenbuehler, 2009; Meyer, 2003). This dissertation adds to the current literature by identifying a framework of protective factors that may allow individuals to reach and maintain a state of positive psychological well-being. Specifically, I established the relative influence of each protective factor in the framework using BRT for both positive and negative indicators of psychological well-being. Among the four outcome variables and between the BRT and OLS regressions (for comparisons), hope, self-compassion, mastery and social support were the most consistent factors associated with better psychological well-being and that might serve as protective factors among sexual minority participants. Although, the OLS regressions explained more of the variance in all outcome variables than the BRT, the BRT provided the relative influence of each protective factor while being robust against outliers, missing data in the predictor variables, and multicollinearity. Below, I discuss the four most influential protective factors of the BRT for each outcome variable that are also significant predictors in the OLS regressions in order to outline the conclusions drawn from this dissertation.

All models accounted for a large percent of variance in the outcome variables. This indicates that the assessed protective factors are explaining most of the differences in outcome scores. However, OLS regression consistently yielded greater R^2 values. This may have occurred for a number of reasons. For instance, the OLS regression was performed on a reduced sample size of an already small *N*. Additionally, the linear assumptions of OLS regression may yield a higher R^2 because this value is the correlation between observed and predicted values, squared,

which assumes a linear relationship. The presence of non-linear relationships revealed in BRT may bring down the value of R^2.

Hope

In the modest amount of work on protective factors for sexual minorities, Kwon (2013) has provided a theoretical framework of resilience highlighting hope as an important factor. In this framework, hope among sexual minorities leads to lower reactivity to prejudice and in turn increased psychological health. However, limited evidence exploring the link between hope and psychological well-being among sexual minorities currently exists. The present study's findings partially support the role of hope in Kwon's framework. Consistent with the framework of resilience, hope emerged as one of the top protective factors for psychological well-being among sexual minorities; although no causal relationship was identified. Specifically, hope was considered the "most influential" protective factor for satisfaction with life and the second and third most influential for quality of life and depression, respectively (as demonstrated by BRT). While acknowledging the limitations of cross-sectional data in assessing temporal relationships in the resilience framework, present study findings suggest that hope may be important in psychological well-being among sexual minorities. Indeed, Kwon and Hugelshofer (2010) found longitudinal evidence for hope scores at Time 1 predicting satisfaction with life scores at Time 2 among LGB participants in a context specific design. Additional longitudinal as well as experimental research is necessary to fully understand the influence of hope on psychological well-being among sexual minorities.

Self-Compassion

To date, there is not a framework for understanding the role of self-compassion as it relates to psychological well-being among sexual minorities or other stigmatized identities.

However, self-compassion is centered on how we treat ourselves during difficult times (Neff, 2003) and has been empirically linked with positive psychological functioning (Neff, Rude, & Kirkpatrick, 2007). Additionally, theoretical contributions suggest self-compassion is an effective coping strategy (Allen & Leary, 2010) and have linked anxiety with lower levels of self-compassion (Werner, Jazaieri, Goldin, Ziv, Heimberg, & Gross, 2012). The present study's findings support self-compassion as an important protective factor for psychological well-being in this sample of sexual minority participants; consistent with the theoretical suggestions, self-compassion emerged as one of the most influential protective factors. Specifically, self-compassion was the most influential protective factor for social anxiety and the second and third most influential for depression and quality of life, respectively. Self-compassion may be influential in psychological well-being because of the specific approach to difficult times that those high in self-compassion take. Specifically, they accept negative situations for what they are, do not over-identify with internal reactions to those events, and care for the self even in difficult times (Neff, 2004). While this cross-sectional data cannot reveal a causal relationship, studies have shown that self-compassion does predict outcome measures of psychological well-being in longitudinal studies and can even be induced for greater psychological well-being (Leary et al., 2007). Longitudinal research among sexual minorities, as well as experimental studies aiming to extend the inductions to sexual minorities, are needed.

Mastery

Like self-compassion, there currently is not a framework that highlights the role of mastery in the psychological well-being of sexual minorities or other stigmatized identities. However, maintaining a sense of control has positive effects on psychological well-being (i.e., Felsten & Wilcox, 1992; Korte, Cappeliez, Bohlmeijer, & Westerhof, 2012) which may be of

particular benefit for those who experience stigma due to the powerlessness that is inherent in those experiences. The present study's findings support mastery as an important factor in the psychological well-being of sexual minorities. Mastery is the most influential protective factor for both quality of life and depression; although, causal relationships were not established. Stigmatizing situations are typically marked by a loss of power; thus, maintaining perceived control, or mastery, over some aspect of a stigmatizing situation may be beneficial to psychological well-being. Due to the nature of this cross-sectional data and the cross-sectional data of previous research, longitudinal and experimental designs are needed to fully understand the relationship between mastery and psychological outcomes among sexual minorities.

Social Support

The theoretical framework of resilience in lesbian, gay, and bisexual individuals (Kwon 2013) suggests that social support is important for positive psychological outcomes, while minority stress framework posits that social support is important in the relationship between stigma and both positive and negative psychological outcomes for sexual minorities (Meyer, 2003). Similarly, the process model of social stigma and its consequences (Frost, 2011), and the psychological mediation framework (Hatzenbuehler, 2009), place social support as an important factor for negative psychological outcomes among sexual minorities. The present study's findings partially support the role of social support in the theoretical framework of resilience in lesbian, gay, and bisexual individuals. Although not indicative of causality, this study revealed social support to be one of the most important factors based on relative influence (i.e., social support was the second most influential protective factor for satisfaction with life). Thus, this study partially supports the role of social support as outlined in the minority stress framework. The minority stress framework posits social support may influence both positive and negative

outcomes of psychological well-being. However, no studies, including this one, have examined social support using a longitudinal approach which would uncover the relationship between social support and psychological well-being and what types of social support are most effective.

Perhaps surprisingly, internet support was not correlated with the outcome variables and support from families of choice was relatively low in influence on outcome variables (and not statistically significant in the OLS regression). These results from different sources of support taken together indicates that, compared to families of choice, general support from family, friends, and a special someone is more important and influential in the lives sexual minorities than other sources/forms. It may be that other sources/forms of social support may not fully compensate for the loss of expected support from family and friends. Some sexual minorities may expect that those in the traditional family unit should always be supportive and others may be only temporarily significant figures in their lives (Carpineto et al., 2008). Families of choice are sometimes the only options for sexual minorities whose traditional families are unsupportive or harmful in their responses. Thus, support from families of choice is still an important area of research that needs to be explored for a better understanding.

Implications for a Revised Framework

I began this paper by building an initial framework of protective factors based on evidence in the literature. Given the results of the overall analyses, I have revised the framework to reflect the most important and influential protective factors for further exploration and points of intervention for sexual minorities while retaining the initial suggested relationships (See Figure 14).

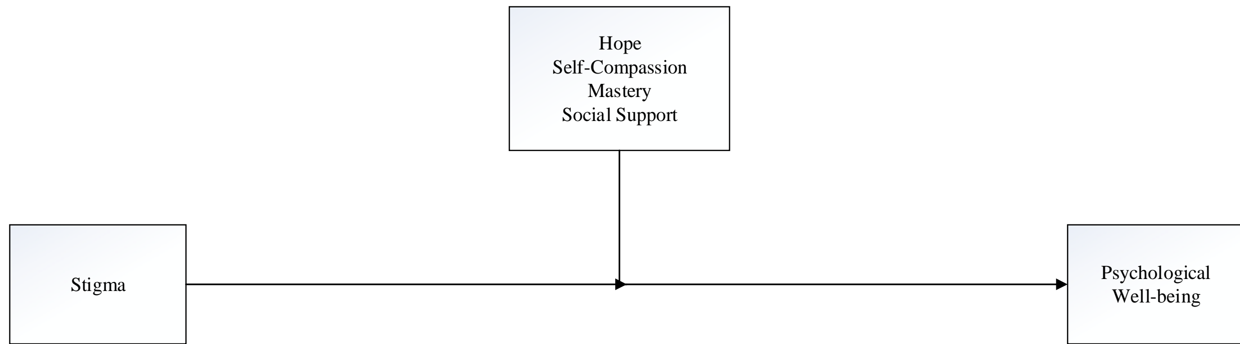


Figure 14
Revised evidence based framework of protective factors of psychological well-being among sexual minorities

Less Influential Protective Factors

The minority stress framework (Meyer, 2003), the psychological mediation framework (Hatzenbuehler, 2009), and the process model of stigma and its consequences (Frost, 2011) all posit that structural factors are related to psychological well-being of sexual minorities. Surprisingly, structural factors were not correlated with the outcome variables. This could be due to the way structural factors were measured. By measuring structural factors by state laws and policies, this may not fully capture structural factors that protect from stigma experiences. Additionally, by measuring the effect these laws and policies have on psychological well-being, there is some assumption that participants are aware of these laws and policies. An alternative approach to measuring structural factors is to assess the attitudes toward sexual minorities in the areas that are being studied. For example, Hatzenbuehler and colleagues (2014) used this approach and found that more stigmatizing attitudes of sexual minorities was related to earlier mortality of sexual minorities in those areas. It may be more difficult to assess protective factors that are structural in a scale than it is to measure the structural factors that are negative. Further

research should address the best ways to measure structural factors for a better understanding of the influences in the lives of sexual minorities.

The role of cognitive flexibility in psychological well-being was less straightforward. For instance, the BRT revealed that cognitive flexibility was the second most influential protective factor for the outcome of social anxiety. However, this was not supported in the OLS regression used for comparison. Future research should explore cognitive flexibility in relation to social anxiety outcomes to fully understand the nuances of the role of cognitive flexibility.

Neither community connectedness to the online LGBT community nor social support from online sources were significantly related to any of the outcome variables. Due to the online nature of the study, this is particularly unexpected. However, a large portion of the sample came from MTurk and Email contacts, neither of which necessarily indicate that the participant has a strong online presence. MTurk is not used to engage with others online, only to complete study tasks for pay. Additionally, the emails where sent to regional LGBT organizations and then distributed among the members. Therefore participants may be more connected to their local LGBT community to an online community, yet still had access to the study. On the other hand, community connectedness related to all outcome variable with the exception of social anxiety. Community connectedness had medium to low relative influence on quality of life, satisfaction with life, and depression. These results for community connectedness may indicate a need for enhanced structure of the community rather than an individual's participation in the community. For instance, Frost and Meyer (2012) address structural issues that may create barriers to participation within the community. They note that LGBT communities are often centered on concerns of white, gay males which may leave others less connected to the community. Studies

to explore the effectiveness of the community and whether resources that are needed are being provided by the community may be a logical next step in this line of research.

The process model of stigma and its consequences (Frost, 2011) posits that meaning making is influential in positive mental health outcomes for sexual minorities. However, the current study does not support meaning making as a top protective factor. Meaning making had medium relative influence on outcomes of quality of life, satisfaction with life, and depression and low relative influence on social anxiety. The exploration of meaning making for sexual minorities is still new and further development of theoretical groundwork and a scale that is sensitive to the nuances of meaning making for sexual minorities is needed.

The theoretical framework of resilience in lesbian, gay, and bisexual individuals (Kwon, 2013) posits that emotional openness is a key factor in positive psychological outcomes among sexual minorities. The findings of the present study did not support emotional openness as a key factor. The results of this study place emotional openness at a medium to low relative importance across all variables. In many studies emotional openness was studied by having participants engage in a writing exercise. There could be a discrepancy between the writing exercises and what the emotional openness scale is measuring. This is point of exploration for future research.

Finally, problem-solving coping had a medium relative influence on negative psychological well-being indicators of depression and social anxiety, and a low relative influence on the positive well-being indicators of quality of life and satisfaction with life. This indicates that problem-solving coping is more important for negative outcomes of psychological well-being than for the positive outcomes.

Comparing Influence for Outcomes

Findings indicate social anxiety may be unique in the relative influence of protective factors compared to the other indicators of psychological well-being. This is likely due to the specific focus on the social aspect of social anxiety that is absent in the other outcome variables. With the exception of self-compassion, influence of variables for social anxiety were ordered much differently than those for depression and positive outcome variables. Cognitive flexibility, outness, family of choice, and problem-solving all appear much higher on relative influence for social anxiety than they do for depression and the positive outcome variables. The nature of social anxiety may explain its uniqueness; anxiety symptoms often include a rigid style of thought process (Lee & Orsillo, 2014). Thus, it follows that cognitive flexibility would be important in outcomes. Additionally, issues surrounding outness have the potential to create anxiety concerning how other will respond (Meyer, 2013). Creating families of choice often involve an unaccepting social environment among members of traditional or biological families. Also, families of choice are sometimes not considered as permanent as traditional families. Therefore, it is unsurprising that families of choice are influential for anxiety outcomes. Future studies should focus on the outcome of social anxiety separately given the differences.

Implications

This study extends research on the protective factors that have been studied in LGB populations to date to other sexual minority identities. Specifically, respondents were able to choose from a comprehensive list of identities, reducing the occurrence of participants choosing the "other" option that was also available. Identities that were selected other than lesbian, gay, or bisexual were pansexual, asexual, and queer. Studies on sexual minorities often rely on the "other" option for these identities and exclude them from further analysis and focus on LGB.

Due to the low response rate of other identities, identities other than LGB were grouped into an "other orientations" group and then dummy coded to test for unique relationships to the outcome variables. Given the results from the biserial correlation and the OLS regression, those identifying as a sexual minority, but not LGB have increased depression. Additional research should address identities beyond lesbian, gay, and bisexual, particularly in reference to depression. This may be an increasing necessary measure to take, not only because their experiences and psychological well-being are important, but because the "other orientation" dummy coded variable was also negatively related to age. This may indicate a generational difference in identification such that more young people are identifying with orientation labels other than lesbian, gay, and bisexual.

This dissertation has identified four key target areas for intervention among sexual minorities to increase psychological well-being. Hope, self-compassion, mastery, and social support are the protective factors that future research should focus on and develop interventions for sexual minorities that can be disseminated within the community. While there are hope studies focusing on chronic and terminal illness, there should be development within the literature of the characteristics of hope among sexual minorities and subsequently the development of inductions and interventions. Similarly, self-help programs targeting mastery that deliver automated mastery messages that have increased mastery among participants (Zautra et al., 2012). Additionally, clinical interventions such as "saying is believing" have been shown to be effective among sexual minority participants (Pachankis, 2014) and should be a resource for treatment among sexual minorities. Future research should focus on creating short inductions and interventions for sexual minorities that can be shared in the community.

Results provided support for the continuation of research on self-compassion inductions and the adaptation of those inductions to be effective among sexual minorities. An experimental research design has successfully implemented an induction of a self-compassionate state among a college sample. However, this design has failed to replicate in a sample of sexual minority participants with the original writing instructions (Chandler, 2013) and with a set of instructions adapted to reflect the negative experiences that sexual minorities may experience (unpublished data by the author). Future research should focus on successfully adapting a self-compassion induction among sexual minorities.

Finally, social support emerged as one of the most influential protective factors. Unlike the other factors, social support relies on the social network of sexual minorities instead of resources that can be enhanced through the self. There are potentially two approaches that future research should take to address social support. The first is targeting those who may be part of a support network for sexual minorities. The second is disseminating information about social interactions to sexual minorities to help them better understand and react to social interactions that may be negative or vague. For instance, among lesbian and gay participants, self-stigma and fear of support rejection linked to increased indirect support seeking (which entails non-disclosure and hinting at a problem or need), which in turn explained unsupportive responses from friends and family, providing support for a paradox among gays and lesbians seeking support from their network (Williams, LaDuke, Hutsell, & Klik, in press). This paradox of support seeking suggests that when lesbians and gay men seek support in ways to avoid rejection, they are less likely to receive social support. Helping sexual minorities understand these patterns in interactions may help them successfully navigate difficult social situations.

Limitations and Future Directions

Findings from this dissertation should be interpreted with consideration to the limitations. First, sexual minorities are hard to reach in research studies (Matthews & Cramer, 2008; Meyer & Wilson, 2009). Hard-to-reach, or "hidden" populations have inherent challenges in recruitment of probability samples for researchers (Matthews & Lee, 2014; Sell & Petrulio, 1996; Sullivan & Losberg, 2003). Despite the comprehensive online methods for recruitment, there are limitations to this method. It is still difficult to reach all of the population even online because there are so many possibilities for distribution (e.g., various hashtags and sites). Additionally, this eliminates the opportunity for sexual minorities who do not have an online presence to participate. For instance, older sexual minorities may not have as strong of an online presence due to generational differences in networking. Even among the various recruitment methods the Facebook and Twitter strategies were capturing an older audience, yet had fewer participants than the MTurk and Email strategies. When relevant data are collected, large, national data sets may overcome some of these limitations. However, because of the lack of control over what information is gathered in these data sets, it may be difficult or impossible to find data sets that collect information on sexual orientation and relevant research questions.

Second, the cross-sectional nature of the data limits expanding interpretation to causal relationships. While the associations in this study that may outline sexual minority experiences may be meaningful in further establishing a theoretical and evidence base for advancing a framework of protective factors, they do not identify causal patterns and how these relationships evolve over time. Future research should approach these relationships longitudinally to assess causality.

Third, the sample is relatively homogenous consisting of a large proportion of participants that identify as white, female, and/or having at least some college education. This could be a result of recruiting a majority of the sample from MTurk, where there were higher rates of women participants. There were relatively low rates of participation from the social media recruitment strategies as compared with the MTurk and Email strategies. Future research should identify specific ways to engage with a diverse sample of the sexual minority community online by exploring the patterns of internet usage among more diverse populations of sexual minorities. Caution should be used when extrapolating these findings to more diverse populations. To address this limitation, future research may include national data sets as well as community based participatory research strategies. National data sets are recognized for their likelihood of collecting a probability sample. Additionally, a community based participatory research approach may reveal information from stakeholders to improve recruitment strategies that are unique to the community to include a more diverse sample. These strategies may be more likely to provide data on more diverse samples of sexual minorities.

Conclusion

This dissertation adds to the current literature on protective factors among sexual minorities shown to contribute to psychological well-being. While this review revealed ten protective factors supported by literature-based evidence: mastery, problem-solving coping, cognitive flexibility, structural factors, social support, self-compassion, hope, community connectedness, meaning making, and emotional openness, this dissertation study assessed the relative importance of those protective factors to psychological well-being, in order to gain a better understanding of the most influential factors for sexual minorities' psychological well-being. Hope, mastery, self-compassion, and social support were the most consistently influential

of the ten protective factors. Moreover, this study revealed that protective factors explained a large amount of variation in both positive and negative psychological well-being outcomes, highlighting the need for further exploration of these protective factors among sexual minorities. Therapies that target multiple aspects of these protective factors such as Acceptance and Commitment Therapy (Luoma, Hayes, & Walser, 2007) and interventions that target or promote these factors such as self-compassion exercises (Germer & Neff, 2015), and mastery messages delivered via phone recordings (Zautra et al., 2012) may be particularly beneficial to sexual minorities and warrant further research. Finally, the current study expanded this work on protective factors to include minority sexual orientation identities that have been previously excluded (e.g., queer, pansexual) from this line of research.

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APPENDICES

Appendix A

Perceived Stigma

The following are questions about feelings and emotions you have had about your sexual orientation. These feelings and emotions are natural and experienced by many individuals. Please indicate how much you agree with the statements using the following scale:

Definitely Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Definitely Agree
1	2	3	4	5

I have felt odd/abnormal because of my sexual orientation. ________

There have been times when I have felt ashamed because of my sexual orientation ________

I have never felt self-conscious when I am in public. ________

People have treated me different because of my sexual orientation. ________

I never have felt embarrassed because of my sexual orientation. ________

I feel others have looked down on me because of my sexual orientation. ________

I have found that people say negative or unkind things about me behind my back because of my sexual orientation. ________

I have been excluded from work, school, and/or family functions because of my sexual orientation. ________

Appendix B

Mastery
(Pearlin & Schooler, 1978)

1 – Strongly Disagree

2 – Disagree

3 – Agree

4 – Strongly Agree

How strongly do you agree or disagree that

1. I have little control over the things that happen to me. (R)
2. There is really no way I can solve some of the problems I have. (R)
3. There is little I can do to change many of the important things in my life. (R)
4. I often feel helpless in dealing with the problems of life. (R)
5. Sometimes I feel that I'm being pushed around in life. (R)
6. What happens to me in the future mostly depends on me.
7. I can do just about anything I really set my mind to do.

Appendix C

COPE Scales

(Carver et al., 1989)

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what *you* generally do and feel, when *you* experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you *usually* do when you are under a lot of stress.

1 - I usually don't do this at all
2 - I usually do this a little bit
3 - I usually do this a medium amount
4 - I usually do this a lot

<u>Active coping</u>
I take additional action to try to get rid of the problem.
I concentrate my efforts on doing something about it.
I do what has to be done, one step at a time.
I take direct action to get around the problem.

<u>Planning</u>
I try to come up with a strategy about what to do.
I make a plan of action.
I think hard about what steps to take.
I think about how I might best handle the problem.

<u>Suppression of competing activities</u>
I put aside other activities in order to concentrate on this.
I focus on dealing with this problem, and if necessary let other things slide a little.
I keep myself from getting distracted by other thoughts or activities.
I try hard to prevent other things from interfering with my efforts at dealing with this.

Appendix D

Cognitive Flexibility Inventory (CFI)

Please use the scale below to indicate the extent to which you agree or disagree with the following statements.

Strongly disagree - Disagree - Somewhat disagree -Neutral -Somewhat agree -Agree -Strongly agree
1 2 3 4 5 6 7

1. I am good at ''sizing up'' situations. (alternatives)
2. I have a hard time making decisions when faced with difficult situations. (control)
3. I consider multiple options before making a decision. (alternatives)
4. When I encounter difficult situations, I feel like I am losing control. (control)
5. I like to look at difficult situations from many different angles. (alternatives)
6. I seek additional information not immediately available before attributing causes to behavior. (alternatives)
7. When encountering difficult situations, I become so stressed that I can not think of a way to resolve the situation. (control)
8. I try to think about things from another person's point of view. (alternatives)
9. I find it troublesome that there are so many different ways to deal with difficult situations. (control)
10. I am good at putting myself in others' shoes. (alternatives)
11. When I encounter difficult situations, I just don't know what to do. (control)
12. It is important to look at difficult situations from many angles. (alternatives)
13. When in difficult situations, I consider multiple options before deciding how to behave. (alternatives)
14. I often look at a situation from different viewpoints. (alternatives)
15. I am capable of overcoming the difficulties in life that I face. (control)
16. I consider all the available facts and information when attributing causes to behavior. (alternatives)
17. I feel I have no power to change things in difficult situations. (control)
18. When I encounter difficult situations, I stop and try to think of several ways to resolve it. (alternatives)
19. I can think of more than one way to resolve a difficult situation I'm confronted with. (alternatives)
20. I consider multiple options before responding to difficult situations. (alternatives)

Appendix E

Cognitive Flexibility Scale (CFS)

Martin and Rubin (1995)

The following statements deal with your beliefs and feelings about your own behavior. Read each statement and respond by circling the number that best represents your agreement with each statement.

1 - Strongly Disagree
2 - Disagree
3 - Slightly Disagree
4 - Slightly Agree
5 - Agree
6 - Strongly Agree

1. I can communicate an idea in many different ways.
2. I avoid new and unusual situations. (R)
3. I feel like I never get to make decisions. (R)
4. I can find workable solutions to seemingly unsolvable problems.
5. I seldom have choices when deciding how to behave. (R)
6. I am willing to work at creative solutions to problems.
7. In any given situation, I am able to act appropriately.
8. My behavior is a result of conscious decisions that I make.
9. I have many possible ways of behaving in any given situation.
10. I have difficulty using my knowledge on a given topic in real life situations. (R)
11. I am willing to listen and consider alternatives for handling a problem.
12. I have the self-confidence necessary to try different ways of behaving.

Appendix F

The Multidimensional Scale of Perceived Social Support
Zimet, Dahlem, Zimet, & Farley (1988)

Very Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Very Strongly Agree
1	2	3	4	5	6	7

1. There is a special person who is around when I am in need.
2. There is a special person with who I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort for me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

Appendix G

Self-Compassion Scale
(Neff, 2003)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost Never				Almost Always
1	2	3	4	5

1. I'm disapproving and judgmental about my own flaws and inadequacies.
2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.
3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.
4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.
5. I try to be loving towards myself when I'm feeling emotional pain.
6. When I fail at something important to me I become consumed by feelings of inadequacy.
7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.
8. When times are really difficult, I tend to be tough on myself.
9. When something upsets me I try to keep my emotions in balance.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I'm intolerant and impatient towards those aspects of my personality I don't like.
12. When I'm going through a very hard time, I give myself the caring and tenderness I need.
13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
14. When something painful happens I try to take a balanced view of the situation.
15. I try to see my failings as part of the human condition.
16. When I see aspects of myself that I don't like, I get down on myself.
17. When I fail at something important to me I try to keep things in perspective.
18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.
19. I'm kind to myself when I'm experiencing suffering.
20. When something upsets me I get carried away with my feelings.
21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.
22. When I'm feeling down I try to approach my feelings with curiosity and openness.
23. I'm tolerant of my own flaws and inadequacies.
24. When something painful happens I tend to blow the incident out of proportion.
25. When I fail at something that's important to me, I tend to feel alone in my failure.
26. I try to be understanding and patient towards those aspects of my personality I don't like.

Appendix H

The Hope Scale

(Snyder, Harris, Anderson, Holleran, Irving, Sigmon, Yoshinobu, Gibb, Langelle, & Harney, 1991)

Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

1 – Definitely False

2 – Mostly False

3 – Mostly True

4 – Definitely True

1. I can think of many ways to get out of a jam. (pathways)
2. I energetically pursue my goals. (agency)
3. I feel tired most of the time. (filler)
4. There are lots of ways around any problem. (pathways)
5. I am easily downed in an argument. (filler)
6. I can think of many ways to get the things in life that are most important to me. (pathways)
7. I worry about my health. (filler)
8. Even when others get discouraged, I know I can find a way to solve the problem. (pathways)
9. My past experiences have prepared me well for my future. (agency)
10. I've been pretty successful in life. (agency)
11. I usually find myself worrying about something. (filler)
12. I meet the goals that I set for myself. (agency)

Appendix I

Connectedness to the LGBT Community Scale.
(Frost & Meyer, 2012)

Adapted for local LGBT community in general.
These are questions about the LGBT community in your area. By LGBT community, I don't mean any particular neighborhood or social group, but in general, groups of gay men, bisexual men and women, lesbians, and transgender individuals.

1	2	3	4
disagree strongly			agree strongly

1. You feel you're a part of the local LGBT community.
2. Participating in the local LGBT community is a positive thing for you.
3. You feel a bond with the local LGBT community.
4. You are proud of the local LGBT community.
5. It is important for you to be politically active in the local LGBT community.
6. If we work together, gay, bisexual and lesbian people can solve problems in the local LGBT community.
7. You really feel that any problems faced by the local LGBT community are also your own problems.
8. You feel a bond with other [same gender similar others] of the local LGBT community.

Adapted for online LGBT community in general.
These are questions about the LGBT community online. By LGBT community, I don't mean any particular social group, but in general, groups of gay men, bisexual men and women, lesbians, and transgender individuals.

1	2	3	4
agree strongly			disagree strongly

1. You feel you're a part of the online LGBT community.
2. Participating in the online LGBT community is a positive thing for you.
3. You feel a bond with the online LGBT community.
4. You are proud of the online LGBT community.
5. It is important for you to be politically active in the online LGBT community.
6. If we work together, gay, bisexual and lesbian people can solve problems in the online LGBT community.
7. You really feel that any problems faced by the online LGBT community are also your own problems.
8. You feel a bond with other [same gender similar others] of the online LGBT community.

Appendix J

Meaning-Making Scale
(van den Heuvel, et al., 2009)

1 – strongly disagree

2 – disagree

3 – slightly disagree

4 – slightly agree

5 – agree

6 – strongly disagree

1. I actively take the time to reflect on events that happen in my life.
2. I have an understanding of what makes my life meaningful.
3. I prefer not to think about the meaning of events that I encounter (r).
4. When difficult things happen, I am usually quick to see the meaning of why they happen to me.
5. Self-reflection helps me to make my life meaningful.
6. I actively focus on activities and events that I personally find valuable.
7. I feel my life is meaningful.

Appendix K

Emotional Openness
(Stanton et al., 2000)

Emotional Processing
I take time to figure out what I'm really feeling.
I delve into my feelings to get a thorough understanding of them.
I realize that my feelings are valid and important.
I acknowledge my emotions.

Emotional Expression
I let my feelings come out freely.
I take time to express my emotions.
I allow myself to express my emotions.
I feel free to express my emotions.
1 - I usually don’t do this at all
2 - I usually do this a little bit
3 - I usually do this a medium amount
4 - I usually do this a lot

Appendix L

The WHOQOL–BREF Questions 1998

1. How would you rate your quality of life?
2. How satisfied are you with your health?
3. To what extent do you feel that (physical) pain prevents you from doing what you need to do?
4. How much do you need any medical treatment to function in your daily life?
5. How much do you enjoy life?
6. To what extent do you feel your life to be meaningful?
7. How well are you able to concentrate?
8. How safe do you feel in your daily life?
9. How healthy is your physical environment?
10. Do you have enough energy for everyday life?
11. Are you able to accept your bodily appearance?
12. Have you enough money to meet your needs?
13. How available to you is the information that you need in your day-today life?
14. To what extent do you have the opportunity for leisure activities?
15. How well are you able to get around?
16. How satisfied are you with your sleep?
17. How satisfied are you with your ability to perform your daily living activities?
18. How satisfied are you with your capacity for work?
19. How satisfied are you with yourself?
20. How satisfied are you with your personal relationships?
21. How satisfied are you with your sex life?
22. How satisfied are you with the support you get from your friends?
23. How satisfied are you with the conditions of your living place?
24. How satisfied are you with your access to health services?
25. How satisfied are you with your transport?
26. How often do you have negative feelings such as blue mood, despair, anxiety

Appendix M

Satisfaction with Life Scale

http://internal.psychology.illinois.edu/~ediener/SWLS.html

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Disagree
- 1 - Strongly disagree

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

____ The conditions of my life are excellent.

____ I am satisfied with my life.

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

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

- 31 - 35 Extremely satisfied
- 26 - 30 Satisfied
- 21 - 25 Slightly satisfied
- 20 Neutral
- 15 - 19 Slightly dissatisfied
- 10 - 14 Dissatisfied

5 - 9 Extremely dissatisfied

Appendix N

Depressive Symptoms

Center for Epidemiologic Studies Depression Scale (CES-D)

Date: ____________________

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you've felt this way during the **past week**. Respond to all items.

Place a check mark (✓) in the appropriate column. **During the past week...**	**Rarely or none of the time (less than 1 day)**	**Some or a little of the time (1-2 days)**	**Occasionally or a moderate amount of time (3-4 days)**	**All of the time (5-7 days)**
1. I was bothered by things that usually don't bother me.				
2. I did not feel like eating; my appetite was poor.				
3. I felt that I could not shake off the blues even with help from my family.				
4. I felt that I was just as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt that everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				
18. I felt sad.				
19. I felt that people disliked me.				
20. I could not "get going."				

Source: Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*: 385-401.

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Scoring for Center for Epidemiologic Studies Depression Scale (CES-D)

Directions: Do not score if missing more than 4 responses. 1) For each item, look up your response and corresponding score (0-3). 2) Fill in the score for each item under the last column labeled "Score." 3) Calculate your Total Score by adding up all 20 scores.

During the past week...	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	All of the time (5-7 days)	Score
1. I was bothered by things that usually don't bother me.	0	1	2	3	
2. I did not feel like eating; my appetite was poor.	0	1	2	3	
3. I felt that I could not shake off the blues even with help from my family.	0	1	2	3	
4. I felt that I was just as good as other people.	3	2	1	0	
5. I had trouble keeping my mind on what I was doing.	0	1	2	3	
6. I felt depressed.	0	1	2	3	
7. I felt that everything I did was an effort.	0	1	2	3	
8. I felt hopeful about the future.	3	2	1	0	
9. I thought my life had been a failure.	0	1	2	3	
10. I felt fearful.	0	1	2	3	
11. My sleep was restless.	0	1	2	3	
12. I was happy.	3	2	1	0	
13. I talked less than usual.	0	1	2	3	
14. I felt lonely.	0	1	2	3	
15. People were unfriendly.	0	1	2	3	
16. I enjoyed life.	3	2	1	0	
17. I had crying spells.	0	1	2	3	
18. I felt sad.	0	1	2	3	
19. I felt that people disliked me.	0	1	2	3	
20. I could not "get going."	0	1	2	3	
				Total Score:	

Scoring Results: Total Score of 16 or higher is considered depressed.
If your score indicates depression, see a health care/mental health professional for further evaluation and treatment. Bring these test results to your appointment.

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Appendix O

Social Anxiety Scale

This measure assesses the way that social phobia plays a role in your life across a variety of situations. Read each situation carefully and answer two questions about that situation. The first question asks how anxious or fearful you feel in the situation. The second question asks how often you avoid the situation. If you come across a situation that you ordinarily do not experience, imagine "what if you were faced with that situation," and then, rate the degree to which you would fear this hypothetical situation and how often you would tend to avoid it. Please base your ratings on the way that the situations have affected you in the last week. Fill out the following scale with the most suitable answer provided below.

	Fear				Avoidance			
	None	Mild	Moderate	Severe	Never (0%)	Occasionally (1-33%)	Often (34-66%)	Usually (67-100%)
1. Telephoning in public.	○	○	○	○	○	○	○	○
2. Participating in small groups.	○	○	○	○	○	○	○	○
3. Eating in public places.	○	○	○	○	○	○	○	○
4. Drinking with others in public places.	○	○	○	○	○	○	○	○
5. Talking to people in authority.	○	○	○	○	○	○	○	○
6. Acting, performing or giving a talk in front of an audience.	○	○	○	○	○	○	○	○
7. Going to a party.	○	○	○	○	○	○	○	○
8. Working while being observed.	○	○	○	○	○	○	○	○
9. Writing while being observed.	○	○	○	○	○	○	○	○
10. Calling someone you don't know very well.	○	○	○	○	○	○	○	○
11. Talking with people you don't know very well.	○	○	○	○	○	○	○	○
12. Meeting strangers.	○	○	○	○	○	○	○	○
13. Urinating in a public bathroom.	○	○	○	○	○	○	○	○
14. Entering a room when others are already seated.	○	○	○	○	○	○	○	○
15. Being the center of attention.	○	○	○	○	○	○	○	○
16. Speaking up at a meeting.	○	○	○	○	○	○	○	○
17. Taking a test.	○	○	○	○	○	○	○	○
18. Expressing a disagreement or disapproval to people you don't know very well.	○	○	○	○	○	○	○	○
19. Looking at people you don't know very well in the eyes.	○	○	○	○	○	○	○	○
20. Giving a report to a group.	○	○	○	○	○	○	○	○
21. Trying to pick up someone.	○	○	○	○	○	○	○	○
22. Returning goods to a store.	○	○	○	○	○	○	○	○
23. Giving a party.	○	○	○	○	○	○	○	○
24. Resisting a high pressure salesperson.	○	○	○	○	○	○	○	○

Score my Answers

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