ABSTRACT

Title of Thesis: HETEROSEXIST HARASSMENT AND
                                                    SOCIAL COGNITIVE VARIABLES AS
                                                    PREDICTORS OF SEXUAL MINORITY
                                                    COLLEGE STUDENTS' ACADEMIC
                                                    SATISFACTION AND PERSISTENCE
                                                    INTENTIONS

                                                    Taylor Robin Morris, Master of Arts, 2017

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                                                    Education, and Special Education

        Sexual minorities face experiences of heterosexist harassment in the college

environment, which may contribute to decreased academic well-being. Thus, the present

study investigated whether social cognitive variables and heterosexist harassment predict

sexual minority college students' academic satisfaction and intentions to persist. The

sample consisted of 731 undergraduate students who completed an online survey. Social

cognitive variables were hypothesized to predict academic satisfaction, as specified by

the social cognitive model of academic satisfaction, with heterosexist harassment

operating as a barrier. Results suggested that the social cognitive model provided good fit

to the data. Heterosexist harassment was found to be associated indirectly with academic

satisfaction via perceptions of lower environmental support and it was found to

negatively predict intentions to persist. Implications of the results are that heterosexism

may play a role in sexual minority students' academic development and that social

cognitive career theory may offer a useful framework for interventions.

HETEROSEXIST HARASSMENT AND SOCIAL COGNITIVE VARIABLES AS
PREDICTORS OF SEXUAL MINORITY COLLEGE STUDENTS' ACADEMIC
SATISFACTION AND PERSISTENCE INTENTIONS

by

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Dedication

I dedicate this thesis to my amazing mother, Robin Rice. I wouldn't have ever gotten the opportunity to write this thesis without your steadfast support and radical acceptance. Thank you, from the bottom of my heart, for giving me the chance to live out your motto, "Be who you are."

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Chapter 1: Introduction

Sexual minorities, broadly defined as those who have a sexual orientation other than heterosexual, face unique challenges as college students (Rankin, Weber, Blumenfeld, & Frazer, 2010). Many face concurrent sexual identity and career development struggles (Hetherington, 1991; Schmidt & Nilsson, 2006), unwelcoming campus climates (Brown & Gortmaker, 2009), and institutional prejudice (Rankin et al., 2010). These stressors may contribute to a difficult college experience, as evidenced by the responses to a recent national survey of lesbian, gay, bisexual, and transgender (LGBT) college students. Sixty-eight percent of participants reported hearing a derogatory remark due to their sexual orientation and 30% reported feeling uncomfortable with their campus's climate toward LGBT people (Rankin et al., 2010). A decreased quality of education and attrition may result from these stressors, as 30% of students in the above survey reported seriously considering leaving their institution due to sexuality related issues.

College attrition can have considerable social and economic consequences. For example, failing to complete a college education is associated with a higher poverty rate (Baum, Ma, & Payea, 2013). However, the higher education literature has largely neglected to explore factors that contribute to college retention in sexual minority populations. Leaders in higher education suggest the reason is that institutions refuse to survey students' sexual identity, making it nearly impossible to track the academic outcomes of sexual minority students (Windmeyer, Humphrey, & Barker, 2013). Given

the economic and occupational benefits of a college education for sexual minorities, substantive investigations into this topic are warranted.

Social Cognitive Career Theory and the Academic Well-Being of Sexual Minority Students

A potentially fruitful framework for exploring sexual minority students' academic well-being is social cognitive career theory (SCCT). This theory integrates conceptually related constructs from multiple career development theories to predict various outcomes (Lent, Brown & Hackett, 1994). Developed for both academic and vocational contexts, SCCT was primarily derived from social cognitive theory, which "emphasizes the role of self-referent thinking in guiding human motivation and behavior" (Lent et al., 1994). The social cognitive model of domain satisfaction, which is one of five SCCT models, is useful for understanding the development of academic well-being because it considers social cognitive constructs that are believed to contribute to both eudemonic well-being and hedonic well-being in the context of a given life domain (Lent, 2004).

Lent et al. (2005) applied this model to educational settings, where a measure of academic satisfaction indicated students' academic well-being (henceforth referred to as the academic well-being model; Figure 1). This model included five classes of predictors, including (a) personality traits and affective dispositions, the intrapersonal variables that predispose one toward pleasant or unpleasant emotions; (b) academic self-efficacy, the confidence in one's ability to successfully cope with academic difficulties and to meet academic milestones; (c) academic goal progress, the amount of progress currently being made towards academic milestones; (d) academic outcome expectations, such as the beliefs people have about the outcomes of pursuing a college degree; and (e)

environmental supports, the contextual factors that influence people's ability to pursue their academic goals or to build their self-efficacy. Lent et al. (2005) also proposed a number of indirect paths among the variables that are linked to academic satisfaction. These relationships coalesce to predict that those with more favorable affective traits and greater levels of environmental support, self-efficacy, and positive outcome expectations are more likely to make progress at their goals and to feel satisfied with their academic lives.
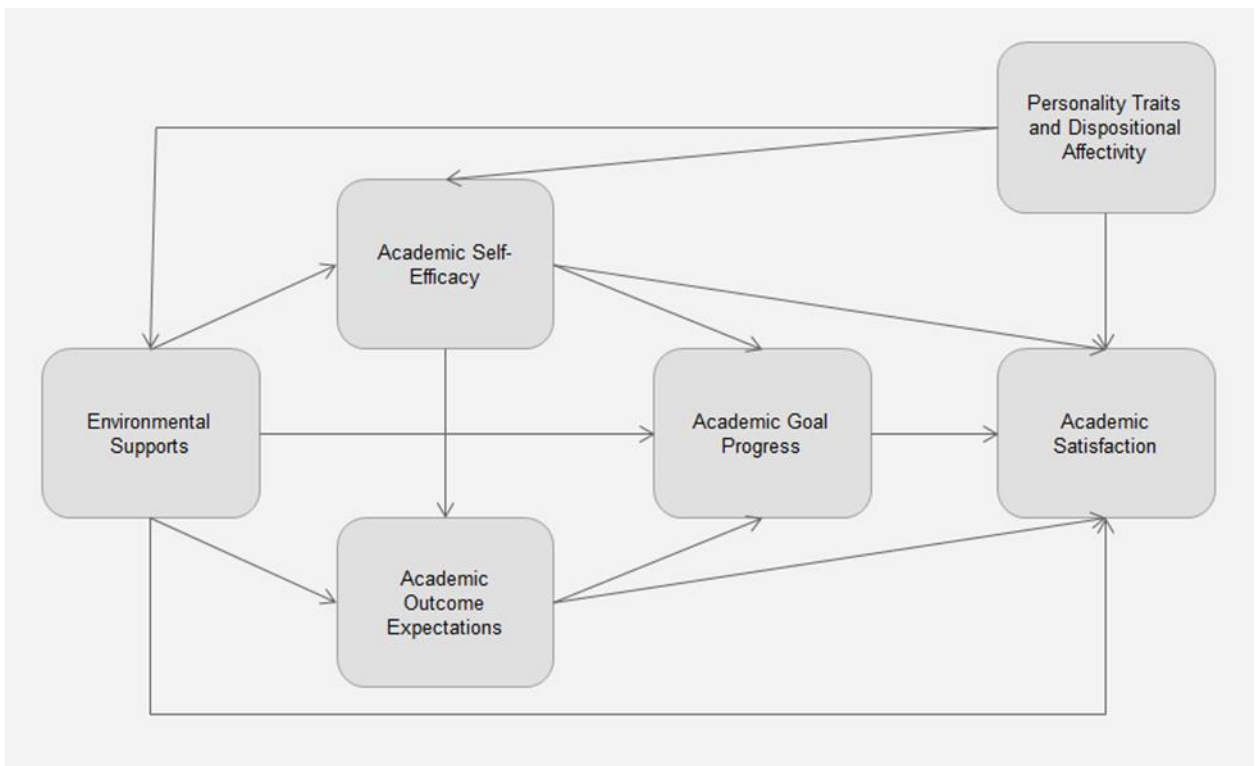

Figure 1. A diagram of the social cognitive model of domain satisfaction as it is applied to academic well-being.

Since this research aims to inform interventions that improve sexual minority students' retention, it will include a focus on intentions to persist at one's university. The

academic well-being model is suitable because it has been shown to predict intentions to persist. For example, in two meta-analyses, academic self-efficacy was found to have a moderate correlation with college persistence (Brown et al., 2008; Robbins, Lauver, Le, Davis, & Langley, 2004). Additionally, several studies have found that self-efficacy, outcome expectations, and academic satisfaction predict engineering students' intentions to persist in their major (Lent et al., 2013; Lent et al., 2015). The academic well-being model has been employed within a wide range of cross-sectional and longitudinal studies. For example, evidence of good model-data fit was found in the initial model test (Lent et al., 2005), though support was not found in this study for one of the hypothesized pathways, outcome expectations to academic satisfaction. Similar results were found in longitudinal studies. For example, environmental supports predicted subsequent academic goal progress and academic satisfaction in American college students (Singley, Lent, & Sheu, 2010). Additionally, self-efficacy predicted later goal progress in a study of Portuguese college students (Lent, Taveira, & Lobo, 2012).

Adding a Culture-Specific Predictor to SCCT: Heterosexist Harassment

An additional strength of the academic well-being model is that it can be modified to account for variables that may be relevant for a particular population. For example, Hui, Lent, and Miller (2013) included acculturation and enculturation as relevant variables for Asian American students. They found that both acculturation and enculturation were associated with greater environmental support, suggesting that both may have protective functions for that population. Ezeofor and Lent (2014) applied uniquely relevant variables for college students who are African immigrants or are the children of African immigrants. They included collective self-construal, relational self-

construal, and personal self-construal, constructs uniquely relevant because of Africans' strong personal and collectivist emphasis on higher education (Ezeofor & Lent, 2014). They found that relational self-construal correlated with increased environmental supports and that personal self-construal correlated with increased self-efficacy and outcome expectations. However, none of the cultural-specific variables directly predicted academic satisfaction.

Although the academic well-being model may be useful for modeling sexual minority students' academic well-being, its explanatory value may be enhanced by identifying and incorporating constructs that capture unique cultural/contextual experiences of this population. Initial evidence suggests that heterosexist harassment, defined as the "insensitive verbal and symbolic behaviors that convey animosity toward non-heterosexuality," may contribute to poor academic well-being (Silverschanz, Cortina, Konik & Magley, 2008). Silverschanz and colleagues (2008) found that both witnessing and experiencing heterosexist harassment were associated with more academic disengagement. Woodford and Kulick (2015) replicated these results in their study of campus climate. Further, Woodford, Chonody, Kulick, Brennan, and Renn (2015) found that heterosexist microaggressions – defined as the everyday brief, low-intensity events that convey negative messages about sexual minority individuals (Sue, 2010) – were associated with academic developmental challenges (e.g., feeling as though one cannot keep up with class assignments).

From this evidence, heterosexist harassment may be an appropriate variable to incorporate into the academic well-being model for sexual minority students. Other variables, such as familial support, may also be relevant, but for the purposes of

parsimony, heterosexist harassment will be the only additional variable. Heterosexist

harassment may fit into the model as an "environmental barrier," because it has

consistently correlated with negative academic outcomes. Though environmental barriers

were not proposed in Lent's (2004) academic well-being model, they have been included

in other social cognitive research (Lent et al., 2003). Thus, heterosexist harassment may

serve as a complement to the model, producing a negative path to environmental

supports. That is, greater exposure to such harassment may diminish one's sense of

campus support. However, it is possible that heterosexist harassment may also directly

predict academic satisfaction over and above the social cognitive predictors because

harassment may color one's overall feelings about the academic domain. Thus, following

the lead of relevant prior studies (e.g., Ezeofor & Lent, 2014; Hui, Lent & Miller, 2013),

the current study will examine paths from heterosexist harassment both to environmental

supports and academic satisfaction. Figure 2 offers a visual representation of this model.
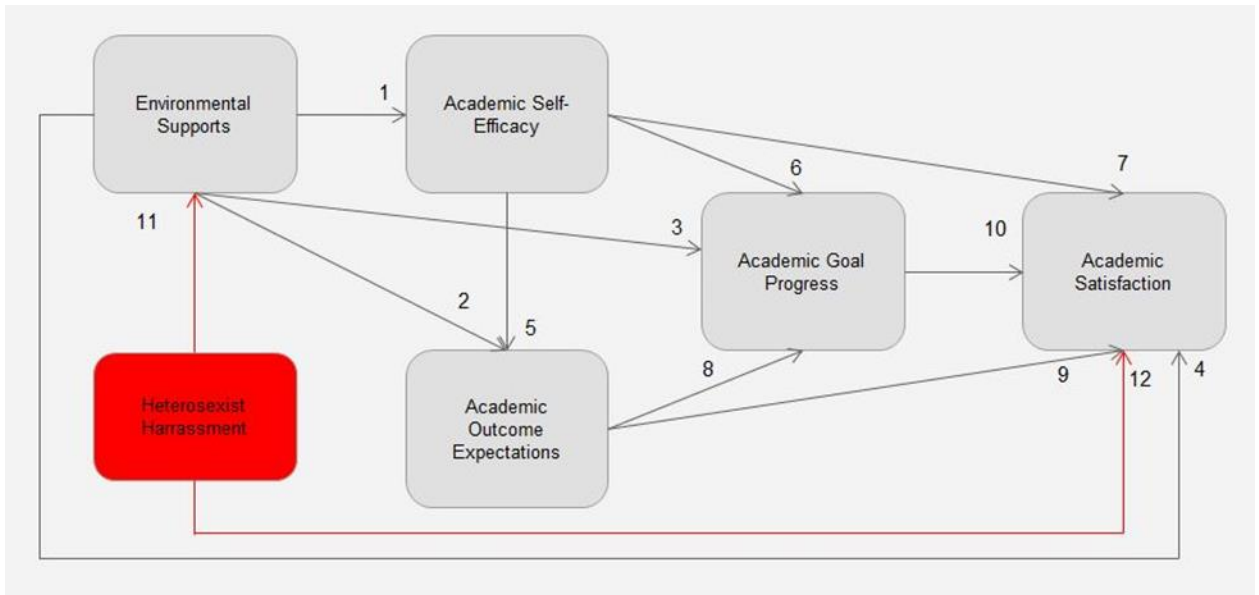
Figure 2. A diagram of the social cognitive model of academic satisfaction that incorporates heterosexist harassment as a unique environmental barrier.

Although heterosexist harassment has not yet been studied in conjunction with social cognitive constructs in college samples, its relevance to academic satisfaction and other academic outcomes is suggested by inquiry in higher education. For example, higher education researcher George Kuh postulated, in the foreword to Rankin et al.'s (2010) work, that sexual minority students may respond to an unwelcoming campus climate in ways similar to other marginalized populations (Carini, Kuh, & Klein, 2006; Kuh, 2003). Specifically, he, along with other researchers, have postulated that sexual minority students who face harassment may be less able to focus on academic pursuits or the co-curricular activities that help students develop academically (Luccozi, 1998). This hypothesis is consistent with findings that have linked harassment to academic disengagement (Silverschanz et al., 2008; Woodford & Kulick, 2015). Further, he maintained that those who experience heterosexist stressors may not have as much

support, may feel discouraged and disappointed in themselves, and may become dissatisfied with the college experience (i.e., diminished academic satisfaction). Kuh postulated that these challenges may contribute to eventual departure from the college environment (Rankin et al., 2010). Further, research regarding sexual minorities' experiences of heterosexist harassment in the workplace suggests that heterosexist harassment predicts decreased job satisfaction and an increased desire to leave the workplace (Waldo, 1999; Ragins & Conwell, 2001; Velez, Moradi & Brewster, 2013). Thus, from a theoretical perspective, heterosexist harassment may be positioned in the academic well-being model as a barrier, or impediment, to the development of environmental supports.

Because heterosexist harassment may negatively impact the quality of sexual minority students' academic life (Silverschanz et al., 2008, Woodford & Kulick, 2015; Woodford et al., 2015), it is important to better understand how sexual minority students develop academic well-being in the face of heterosexist stressors. This study will examine whether, in sexual minority college students, (a) social cognitive variables predict academic satisfaction, (b) whether and how heterosexist harassment may predict academic satisfaction, and (c) whether the social cognitive variables and heterosexist harassment jointly predict intentions to persist in college. More specific hypotheses, based on SCCT and its research base, are as follows.

Primary Model Testing Hypotheses: Prediction of Academic Satisfaction

Hypothesis 1: Environmental support will be positively related to (a) academic self-efficacy (Path 1), (b) academic outcome expectations (Path 2), (c) academic goal progress (Path 3), and (d) academic satisfaction (Path 4).

Hypothesis 2: Academic self-efficacy will be positively related to (a) academic outcome

expectations (Path 5), (b) academic goal progress (Path 6), and (c) academic satisfaction

(Path 7).

Hypothesis 3: Academic outcome expectations will be positively related to (a) academic

goal progress (Path 8) and (b) academic satisfaction (Path 9).

Hypothesis 4: Academic goal progress will be positively related to academic satisfaction

(Path 10).

Hypothesis 5: Heterosexist harassment will be negatively related to (a) environmental

supports (Path 11) and (b) academic satisfaction (Path 12).

Hypothesis 6: Indirect relations from the social cognitive predictors and heterosexist

harassment to academic satisfaction, as specified by the proposed model (Figure 2), will

be significant.

Hypothesis 7: The proposed model, with the addition of heterosexist harassment (see

Figure 2), will produce good overall fit to the data.

Prediction of Persistence Intentions: Hypothesis and Research Question

While the main focus of the study involves testing the social cognitive model of

academic satisfaction, a secondary focus is to explore how variables in this model, with

the addition of heterosexist harassment, predict college persistence intentions.

Hypothesis 8: The social cognitive variables (academic self-efficacy, environmental

supports, academic goal progress, academic outcome expectations, and academic

satisfaction) will collectively explain significant variation in persistence intentions.

Research Question 1: Will heterosexist harassment account for unique predictive

variance, controlling for the social cognitive predictors?

Summary

From the literature reviewed, it appears that heterosexist harassment may have deleterious effects on the academic well-being of sexual minority college students, which may extend to eventual withdrawal from college (Sanlo, 2004; Rankin, 2010). Although little prior research has connected heterosexist harassment directly to academic satisfaction or retention within the academic domain, findings do indicate that sexual minority students are more likely than heterosexual students to consider leaving their university, to attribute decreased academic success to discrimination, and to fear that hostile environments will affect their grades (Oswalt & Wyatt, 2011; Rankin et al., 2010). Thus, it seems useful to examine the SCCT well-being model in relation to heterosexist harassment, academic satisfaction, and persistence intentions in sexual minority college students.

Chapter 2: Methods

Participants

The population of interest for this study was sexual minority college students, defined in this thesis as anyone, cisgender or transgender, who identified as lesbian, gay, bisexual, or queer. There were no age or gender restrictions. For participants to be eligible, they had to be at least 18 years old and to identify as both a current college student who attends college in the United States and a sexual minority group member. Participants were recruited through targeted social media advertisements, as described below.

The sampling plan had been to recruit at least 400 participants. This target was based on the following considerations: To test mediated relationships with small path α (i.e., the path from the predictor variable to the mediating variable) and medium path β (i.e., the path from the mediating variable to the outcome) relations, approximately 400 participants are needed to achieve .8 power (Fritz & MacKinnon, 2007). Expected effect sizes were based on prior research (Silverschanz et al., 2008; Woodford & Kulick, 2015; Lent et al., 2005). Of the 742 students who completed the entire survey, 11 were deemed ineligible and, therefore, removed from the data base for the following reasons: five did not identify as undergraduate college students, two had response patterns suggesting intentional misrepresentation, two were younger than 18 years old, one stated that they were attending college outside of the United States, and one person identified as being heterosexual. The final sample size was 731 sexual minority undergraduate students.

Respondents ranged in age from 18 – 30 ($M = 20.0$, $SD = 1.3$) and included 46.6% ($n = 341$) men, 45.1% ($n = 330$) women, and smaller percentages of transmen (2.3%, $n = 17$), transwomen (.4%, $n = 3$), non-binary/gender non-conforming individuals (4.9%, $n = 36$), and other identities (.5%, $n = 4$). Additionally, sexual orientation was split between 14.5% lesbian ($n = 106$), 38.9% gay ($n = 284$) 36.7% bisexual ($n = 268$) and 10.0% other orientations, such as pansexual, asexual, et cetera ($n = 73$). Students ranged in academic standing with 26.8% identifying as freshman ($n = 196$), 28.0% sophomore ($n = 205$), 23.3% junior ($n = 170$), 21.3% senior ($n = 156$), and .5% other ($n = 4$). Racial/ethnic make-up of the sample included 2.3% Black/African American ($n = 17$), 8.1% Hispanic American or Latina/o ($n = 59$), 73.6% White or European American ($n = 538$), 8.1% Asian/Pacific Islander American ($n = 59$), .4% Native American ($n = 3$), 6.0%

Multiracial ($n = 44$), and 1.5% other ($n = 11$). Finally, multiple geographic regions in the U.S. were represented, with approximately 12.7% of participants being from the Northeast ($n = 93$), 26.0% from the Mid-Atlantic ($n = 190$), 13.3% from the Southeast ($n = 97$), 23.5% from the Midwest ($n = 172$), 9.6% from the Southwest ($n = 70$), 10.4% from the West ($n = 76$), and 4.5% from the Northwest ($n = 33$). Demographic information is available in Table 1.

Measures

This study used the academic domain social cognitive measures of environmental supports, self-efficacy, outcome expectations, goal progress, and satisfaction developed by Lent et al. (2005). For each scale, scores were calculated by summing item responses and dividing by the number of items on the scale. Higher scores indicated positive perceptions (e.g., greater environmental support). These scales produced estimated internal consistency coefficients of .80 and above in the Lent et al. (2005) study and .84 and above in this study.

Academic self-efficacy. Academic self-efficacy was measured with 12 items developed by Lent et al. (2005) that tapped into self-efficacy for completing academic milestones (5 items; e.g., "excel in your intended major over the next semester") and coping with barriers or struggles related to academic success (7 items; e.g., "cope with a lack of support from professors or your advisor"). Although these two aspects of self-efficacy are conceptually distinct, they are highly interrelated and have thus often been modeled as a composite variable (Lent et al., 2005). Scores were calculated by adding all scores and dividing by 12. Responses were obtained along a 10-point scale, ranging from no confidence at all (0) to complete confidence (9). Lent et al.'s initial (2005) study

reported internal consistency estimates of .85 and above and estimated concurrent

validity via positive correlations with goal progress and academic satisfaction.

Additionally, discriminant validity was tested with an appropriately moderate correlation

with social self-efficacy, an analogous social cognitive construct for social well-being

(Lent et al., 2005). Test-retest reliability was estimated with a 15-week test-retest

correlation of .67 (Lent et al., 2012). The internal consistency estimate for the academic

self-efficacy measure was $\alpha = .89$ in the present sample. A copy of the academic self-

efficacy scale is available in Appendix C.

      Environmental supports. Environmental supports were measured with a 9-item

scale (Lent et al., 2005). This measure presents participants with a set of statements that

are representative of factors that may support academic progress (i.e. "[I] have access to a

'mentor' who could offer me advice and encouragement."). Participants responded by

indicating how much they agree with each statement, from 1 (strongly disagree) to 5

(strongly agree). Lent et al. (2005) found an internal consistency estimate of .81.

Concurrent validity of this measure was assessed through theory consistent correlations

with measures of academic satisfaction (Lent et al., 2005). Discriminant validity was

demonstrated by a significant negative correlation between this measure and a measure of

academic barriers (Lent et al., 2003). Temporal stability was estimated by an 8-week test-

retest correlation of .67 (Singley et al., 2010). The internal consistency estimate for the

environmental support measure was $\alpha = .84$ in the present sample. A copy of the

environmental supports scale is available in Appendix D.

      Academic outcome expectations. Academic outcome expectations were

measured with a 10-item scale (Lent et al., 2005). These items present participants with

the statement, "Graduating with an undergraduate degree from [my university] will likely allow me to…" followed by a variety of positive outcomes (e.g., "receive a good job [or graduate school] offer"). Participants responded by indicating how much they agree with each statement, from 0 (strongly disagree) to 9 (strongly agree). Lent et al. (2005) estimated the internal consistency of this measure as .91. Validity was estimated via conceptually appropriate correlations with academic satisfaction and environmental supports (Ezeofor & Lent, 2014). Lent et al. (2015) reported a test-retest reliability coefficient of .60 over one academic semester and .51 over two semesters for a similar measure of outcome expectations. The internal consistency estimate was .89 for this scale in the present study. A copy of the outcome expectations scale is available in Appendix E.

Academic goal progress. Academic goal progress was measured using a 7-item scale (Lent et al., 2005). The items ask participants to indicate how much progress they are making toward a variety of academic goals relevant to undergraduate college students (e.g., "achieving / maintaining high grades in all of your courses"). Participants responded by indicating how well they feel they are making progress, from 1 (no progress at all) to 5 (excellent progress). In Lent et al.'s (2005) study, they found that the internal consistency of scores on this measure was .86. Singley et al. (2010) reported a test-retest reliability coefficient of .62 over an eight-week interval. The internal consistency estimate was .91 for this scale in the present study. A copy of the goal progress scale is available in Appendix F.

Academic satisfaction. Academic satisfaction was measured with a 7-item scale (Lent et al., 2005). The items asked participants how much they feel satisfied with several

aspects of their academic experience (e.g., "For the most part, I am enjoying my coursework"). Participants responded by indicating how much they agree with the statements, from 1 (strongly disagree) to 5 (strongly agree). Lent et al. (2005) reported an internal consistency estimate of .87. A test-retest reliability correlation of .69 was reported over an eight-week interval (Singley et al., 2010). The internal consistency estimate was .89 for this scale in the present study. A copy of the academic satisfaction scale is available in Appendix G.

Intended persistence. Students' intention to remain at their college was measured using a modified version of a 3-item engineering persistence scale developed by Lent et al. (2005), which was based on a scale originally developed by Lent et al. (2003). In the original scale, participants were asked to indicate their level of agreement with each statement (e.g., "I plan to remain enrolled in an engineering major over the next semester") along a 5-point scale, ranging from strongly disagree (1) to strongly agree (5). Summed item responses were divided by 3. For the current study, the phrase "in an engineering major" was replaced with "at my college/university". The Lent et al. (2005) study did not report internal consistency scores, but the original scale from Lent et al. (2003) yielded an internal consistency reliability estimate of .93 and has been found to strongly predict actual future persistence in engineering (Lent et al., 2003). The internal consistency estimate was .78 for this scale in the present study. A copy of the intended persistence scale is available in Appendix J.

Heterosexist harassment. Heterosexist harassment was measured with a modified version of the Workplace Heterosexist Experiences Questionnaire (WHEQ; Waldo, 1999). The WHEQ is a self-report measure consisting of 22 items assessing

sexual minorities' experiences of heterosexist harassment. In the original version, participants are presented with the item stem, "DURING THE PAST 24 MONTHS in YOUR WORKPLACE, have you ever been in a situation where any of your COWORKERS OR SUPERVISORS…" along with a response scale ranging from *never* (0) to *most of the time* (4). An example item would be, "...left you out of social events because of your sexual orientation?" This measure was scored by adding the sum of the scores for each of the 22 items and taking the average. None of the items were reverse scored. Internal consistency for the WHEQ was estimated to be .93 in the development study's sample of 287 LGB persons. The WHEQ has yielded theoretically appropriate bivariate relationships with perceptions of job stress and organizational tolerance for heterosexism. It was also found to predict job dissatisfaction and psychological distress (Waldo, 1999).

For the purpose of the present study (i.e., measuring heterosexism on a college campus vs. work environment), the WHEQ's response stem was modified to reflect university based perpetrators of heterosexism (i.e. professors/staff/students in place of supervisors/co-workers) and individual items were modified to reflect a university environment (e.g. "at your classroom" instead of "in your office"). The internal consistency estimate was .87 for the modified WHEQ scale in the present study. A copy of the WHEQ and the modified version are available in Appendix H and me respectively.

Psychological distress and life satisfaction. The MHI-5 (Berwick et al., 1991) and the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) were also included in the survey for purposes that extend beyond the hypotheses proposed in the thesis. They will, therefore, not be discussed further.

Procedure

This study used a correlational descriptive design. Data were collected with an online survey. Participants were recruited toward the end of their spring semesters via targeted social media advertising. Sample advertisements can be seen in Appendix B. If individuals were interested in participating, they followed an internet link directing them to information about the study and the monetary compensation for their participation (being entered into a drawing for one of several $25 gift cards, at a rate of one gift card for every 50 participants). If they were still interested in participating, they were then directed to a consent page explaining that the study will ask questions about their academic and social experiences as sexual minority college students. They were asked to indicate their consent by selecting a box stating "I agree to participate" and certify that they are (a) are 18 years old or older, (b) identify as a current college student, and (c) identify as a sexual minority. This page also informed participants that they could close their browsers at any time during the study if they did not wish to complete the entire study. A copy of the consent form is available in Appendix A.

After completing the informed consent, participants were asked to complete the study's measures in a randomized order, followed by a demographics questionnaire asking for age, race/ethnicity, gender identity, sexual orientation, current academic major, and GPA (Appendix J). To prevent item skipping, participants were required to answer all items before progressing to another section. Those interested in being entered into the drawing for the gift cards provided their email address in a separate webpage so that the data would not be linked to their email address.

Chapter 3: Results

The online survey was accessed by 832 individuals, four of whom declined to participate and thirteen of whom were not eligible (e.g., because of not identifying as a sexual minority student or not being old enough to provide informed consent). Of the 815 eligible respondents, 84 did not complete the entire survey. A test of the pattern of missing data indicated that the data were missing completely at random (Little, 1988): χ^2 = 1424.063, df = 1515, p = .953). Given the adequate sample size with complete data (N = 731), the missing data were handled via list wise deletion. Table 2 displays the means, standard deviations, and internal consistency reliability coefficients for the predictor and criterion variables. Each of the variables yielded acceptable reliability estimates (.84 - .90). The descriptive statistics are displayed in Table 2.

Bivariate Correlations

Bivariate correlations are displayed in Table 3. Due to the large number of correlations, a Bonferroni correction was applied to these analyses, making the effective significance level α = .0024. Bivariate correlations amongst the variables of interest were largely consistent with those seen in prior SCCT studies, with significant relationships between all of the pertinent social cognitive variables. Heterosexist harassment, the variable unique for sexual minority students, yielded small yet significant negative relationships with self-efficacy, environmental supports, academic satisfaction and intentions to persist in college. However, the negative correlations of heterosexist harassment to outcome expectations and goal progress did not reach significance using the Bonferroni-adjusted significance level.

Prediction of Academic Satisfaction

The model shown in Figure 2 was subjected to a path analysis with measured

variables using the MLM estimation procedures of Mplus 7.4 (Muthén & Muthén, 1998-

2015). The red paths in Figure 2 indicate a hypothesized negative correlation, while the

black paths signify a positive correlation. Following Hu and Bentler's (1999) suggested

dual fit index strategy, adequacy of model-data fit was determined primarily with the

standardized root mean square residual (SRMR), the root mean square error of

approximation (RMSEA), and the comparative fit index (CFI). Using this strategy, fit can

be considered adequate if (a) the SRMR value is .08 or less in combination with (b) an

RMSEA value of .06 or less *or* (c) a CFI value of .95 or more.

The fit indices suggested excellent overall model-data fit: S-B χ^2 (3) = 2.193, *p* >

.05, SRMR = .007, RMSEA = .00, 90% CI [.00, .055], CFI = 1, providing support for

Hypothesis 7. However, the direct path from heterosexist harassment to academic

satisfaction was not significant (β = .00). Figure 3 displays the standardized path

coefficients for this model. An alternative model was also tested in which heterosexist

harassment was linked to academic satisfaction only indirectly, via environmental

support, and the direct path from harassment to satisfaction was omitted. This alternative

model also produced excellent fit to the data, S-B χ^2 (4) = 2.248, *p* > .05, SRMR = .007,

RMSEA = .00, 90% CI [.00, .042], CFI = 1. Because the latter did not differ significantly

from the original model in its relative fit to the data (ΔS-B χ^2 (1) = .0034 , *p* > .05) and

because it is slightly more parsimonious, it may be considered as the better

representation.

Support was found for a majority of the hypothesized direct paths. Most notably,

academic satisfaction was predicted by academic self-efficacy, environmental support,

academic goal progress, and academic outcome expectations. Collectively, the model explained 52% of the variation in academic satisfaction. In addition, support was found for the hypothesized relations among the social cognitive predictors. In particular, academic self-efficacy and environmental supports predicted both academic goal progress (β = .58, .23, $p < .05$) and academic outcome expectations (β = .29, .38, $p < .05$). Additionally, environmental supports predicted academic self-efficacy (β =.43, $p < .05$). However, support was not found for the hypothesized paths from outcome expectations to goal progress (β = -.06, $p > .05$) or, as noted above, from heterosexist harassment to academic satisfaction (β =.00, $p > .05$), though as expected, heterosexist harassment was linked negatively to environmental support (β = -0.20, $p > .05$). Thus, support was found for all hypotheses except Hypothesis 3a and 5b.

Indirect effects. The significance of indirect effects in the model was tested with bias-corrected bootstrapping, which involves the calculation of a confidence interval using random sampling (with replacement). These random samples generate a sampling distribution of each parameter estimate, and from these, a confidence interval can be derived (Mallinckrodt, Abraham, Wei, & Russell, 2006). For this investigation, indirect effects were tested using bootstrapping with 5,000 samples in Mplus 7.4 (Muthén & Muthén, 1998-2015). Confidence intervals that do not include 0 may be considered as statistically significant, $p < .05$.

Table 4 presents the indirect effects leading to academic satisfaction. Fifteen of the 19 indirect effect pathways were significant. The four non-significant pathways each involved paths from outcome expectations to academic satisfaction via goal progress. Although heterosexist harassment did not predict academic satisfaction directly, it did so

through several significant indirect pathways. Thus, partial support was found for
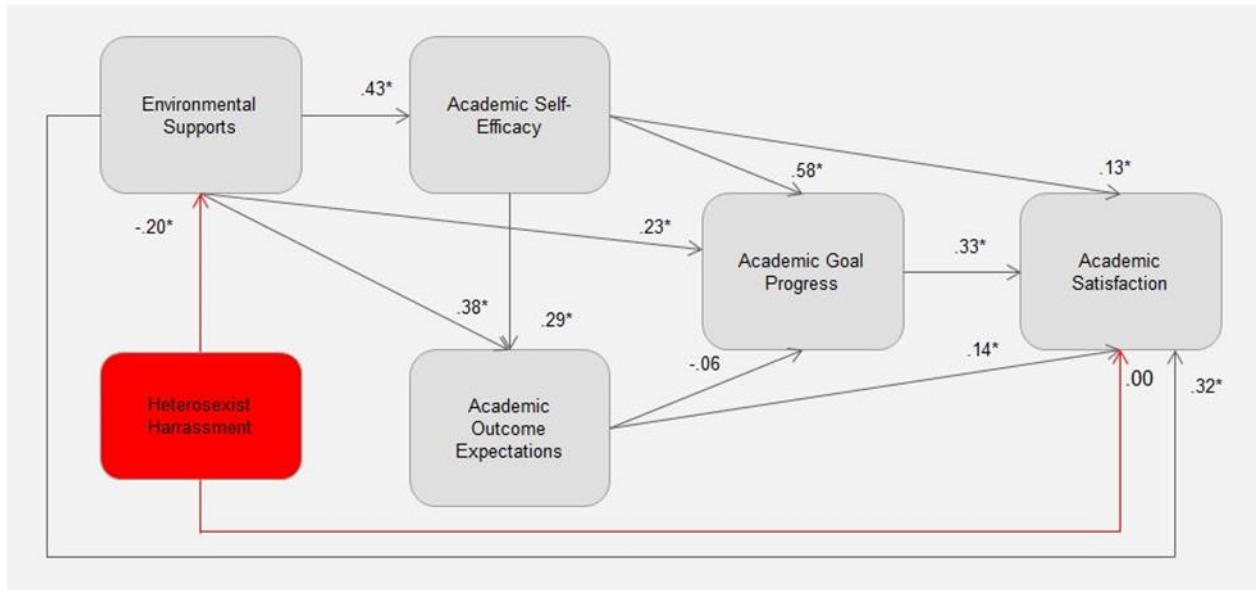
Hypothesis 6.

Figure 3. Path coefficients for the model of sexual minority students' academic well-being. *Note.* Significant coefficients ($p < .05$) are shown with an asterisk.

Prediction of Persistence Intentions

Hypothesis 8 and Research Question 1 involved the prediction of persistence intentions. A hierarchical regression analysis was performed in which persistence intentions were regressed on the set of social cognitive variables at the first step of the equation, with heterosexist harassment added at the second step. Step 1 tested the prediction that persistence intentions would be significantly predicted by the social cognitive variables; step 2 examined the possible additional contribution of heterosexist harassment, beyond the other predictors. As shown in Table 5, the first step of the equation accounted for a significant and substantial portion (25%) of the variation in

persistence intentions, with harassment explaining a small but significant amount of additional variance (1%) at step 2 ($\Delta R^2 = .008$, $F = 8.144$ (1), $p < .01$). Self-efficacy, academic satisfaction, and harassment each produced significant beta weights at the second step (.285, .208, -.093, respectively). These findings provide support for Hypothesis 8 and also suggest the unique predictive utility of heterosexist harassment in predicting persistence intentions (Research Question 1).

Chapter 4: Discussion

This cross-sectional study sought to provide a more cohesive understanding of how sexual minority students develop academic well-being and what role heterosexism may play in this process. In particular, this study examined whether the social cognitive framework is appropriate for modeling the factors that contribute to academic satisfaction for sexual minority students as well as the extent to which heterosexist harassment may contribute to decreased academic self-efficacy, outcome expectations, goal progress, academic satisfaction, and ultimately intentions to persist. The results provided informative data regarding these questions.

First, the modified social cognitive framework was supported as appropriate for modeling the academic well-being of sexual minority students. In particular, the proposed model was shown to provide adequate fit to the data and accounted for approximately 52% of the variance in academic satisfaction. This replicates earlier research with other populations such as African immigrant students and Asian American students (Ezeofor & Lent, 2014; Hui et al., 2013).This suggests that sexual minority individuals may develop academic well-being in ways similar to other student populations. However, it is substantially lower than the 69% of variance explained in Lent et al.'s (2005) initial

study. A potential reason for these results may be that sexual minority individuals have additional unique factors which may contribute to their academic satisfaction, such as concurrent career and sexual identity development. The inclusion of heterosexist harassment in this study represented an effort to focus on at least one culture-specific predictor of relevance to sexual minority group members. In future research, additional predictors may be considered, such as campus climate, concurrent sexual identity and career development, and protective factors.

The majority of predicted paths were supported in the proposed model, with self-efficacy, environmental support, outcome expectations, and goal progress all predicting academic satisfaction directly. The only direct path in the original academic well-being model that was not supported was the path from outcome expectations to goal progress. It may be that, for sexual minority students, outcome expectations about their academic pursuits do not predict their academic progress as well as do such factors as environmental (e.g., institutional) supports. This adds to earlier findings regarding the role of outcome expectations in predicting academic satisfaction. While several studies have found that outcome expectations do predict goal progress (Ezeofor & Lent, 2014; Ojeda, Flores & Navarro, 2011), the initial test of the academic well-being model also did not support this relationship (Lent et al., 2005).

In addition to modeling sexual minority student's academic well-being using the original social cognitive variables, this study introduced heterosexist harassment, as a unique environmental barrier for sexual minority college students. It was posited that heterosexist harassment would act as a barrier to the development of environmental support and academic satisfaction. To this end, the findings suggested mixed results.

Heterosexist harassment was found to negatively predict environmental support. However, it did not directly predict academic satisfaction. This suggests that heterosexist harassment may relate to academic satisfaction only indirectly. Indeed, several other tests of culturally specific variables have yielded similar results (Ezeofor & Lent, 2014; Sheu et al., 2014). For instance, in Ezeofor and Lent's (2014) study of African immigrant students, results indicated that relational self-construal predicted students' academic satisfaction only indirectly, via environmental support. In the present study, heterosexist harassment was found to predict academic satisfaction indirectly via several pathways involving environmental supports. Thus, heterosexist harassment may represent a form of environmental barrier, placing it within the context of the academic well-being model, rather than constituting a factor that is external to the model.

Finally, this study explored the relationships between the social cognitive variables, heterosexist harassment, and intentions to persist academically. Of the original social cognitive variables, it was found that self-efficacy and academic satisfaction predicted intentions to persist, but goal progress and outcome expectations did not contribute uniquely to the regression equation. Similar results were found in Lent et al.'s (2015) longitudinal study, in which self-efficacy alone predicted subsequent intentions to persist in an engineering major. When heterosexist harassment was added to the regression equation, it was found to account for a very small (but significant) amount of unique predictive variance beyond the social cognitive variables. This result provides an interesting contrast to the direct path results where heterosexist harassment only predicted academic satisfaction via the social cognitive variables. Since heterosexist harassment directly predicted intentions to persist, but not academic satisfaction, it suggests that other

mediators, such as increased psychological distress, lowered self-esteem, or dissatisfaction with the social environment may help to explain the relationship between heterosexist harassment and intentions to persist in college among sexual minority students.

Taken together, this study extends the SCCT literature by applying the academic well-being model to a new minority population. That is, it focused on the minority status of one's sexual orientation, whereas previous works have largely examined racially or geographically diverse groups. Given that the results of the present study largely conform to the theorized social cognitive model of domain satisfaction, while also suggesting a unique predictor of college persistence intentions, this bolsters the argument that social cognitive career theory can generally model domain satisfaction adequately across cultural groups, while offering flexibility for the inclusion of predictors, such as heterosexist harassment, that are relevant to particular groups. This result is also notable in the higher education literature, as advocates for sexual minority students can point to this study as evidence that sexual minority individuals' uniquely stressful experiences may relate to their broader academic development.

Limitations

There are several limitations to the interpretability and generalizability of the findings. First, recruitment is often a challenge with stigmatized populations. In this study, a social media advertising campaign was used that targeted individuals identifying as college students with an interest in LGBTQ topics. Though this approach quickly yielded a sizeable sample, the sample was potentially unrepresentative for several reasons. For example sexual minority college students who do not inform the social

media website that they identify as college students or do not indicate interest in LGBTQ topics would have been excluded from the advertisement campaign. Given that students who feel unable to be "out" on social media may have significantly different experiences of heterosexist harassment (e.g., unsupportive university climates make being "closeted" on social media an issue of personal comfort or safety), not including them has likely distorted the range of experiences with heterosexist harassment. Also, individuals who do not use the social media website on a desktop device would not have seen the campaign. Moreover, the sample was composed of sexual orientation groups of very different sizes (e.g., a relatively small percentage and number of lesbians), posing challenges for sub-sample analyses.

A second major limitation involves the cross-sectional design of the study. The academic well-being model posits mediational and directional hypotheses. Such hypotheses are poorly tested by cross-sectional designs which measure only concurrent associations between constructs. The cross-sectional design also cannot support causal inferences. Prior research on the social cognitive well-being model indicates that not all paths found in cross-sectional studies have been replicated when the model is tested using longitudinal designs (e.g., goal progress did not predict academic satisfaction longitudinally in Singley et al., 2010, or Lent et al., 2012). Thus, it is not appropriate to interpret the present findings as implying causal or temporal relations among the variables. A third limitation is that the sexual minority community is a diverse community comprised of people of various sexual identities, races, genders, cultures, social classes, and familial backgrounds, not to mention intersecting aspects of identity. Given that these individuals all share a sexual minority status; it is possible that they have

experienced common types of discriminatory experiences. On the other hand, the current focus on omnibus findings may be a disservice to different subgroups if they have unique experiences with heterosexist harassment and academic well-being. That is, it is possible that the relationships found when aggregating the data over subgroups may not accurately represent particular sexual minority groups. Finally, it should be noted that several observed relationships were relatively small in magnitude (e.g., the beta weight for heterosexist harassment in predicting persistence intentions), raising questions about their clinical significance.

Implications for Future Research

The findings suggest several directions for future research. First, since the social cognitive model of domain satisfaction is intended to predict outcomes longitudinally, a longitudinal test of the proposed model of sexual minority college students' academic well-being is warranted. Ideally, such an investigation could take course over several years, starting from the students' freshman year up until the year of graduation. This could provide the opportunity to study actual attrition and to test the proposed temporal order among the social cognitive predictors and outcomes. Second, the unique, though modest, additional contribution of heterosexist harassment to the prediction of college persistence intentions suggests that such harassment may be linked to the desire to withdraw from college in ways that are not fully explained by the social cognitive academic factors (e.g., via feelings of social marginalization or fears for one's physical safety). Including such potential mediator variables in future research may illuminate the ways in which harassment is linked to persistence intentions and actual persistence.

Third, qualitative study of students' experience with heterosexist harassment, its perceived effect on their academic well-being, and their efforts to cope with harassment, could provide a more detailed picture of the phenomenon – a picture that can complement quantitative research and suggest intervention elements. A fourth direction may be to design experiments that test the degree to which bolstered environmental supports protect sexual minority students from decreased academic well-being and attrition. For example, sexual minority freshmen students could be randomly assigned to either a control group or a first year intervention that is targeted to the sexual minority community. Pre-post and follow-up assessment can examine whether theory-derived intervention methods help to promote academic well-being and college enrollment.

Implications for Policies and Practice

The current results provide tentative implications for assisting sexual minority college students at a policy level. First, individuals in positions of power at higher education institutions can design interventions for sexual minority students using a social cognitive lens. Second, administrators may address the negative relationship between heterosexist harassment and perceptions of environmental support. For example, efforts can be made to reduce heterosexism on campus, using organizational strategies such as increasing diversity training, implementing and enforcing strong anti-bias policies, and increasing LGBTQ visibility on campus. Efforts can also be made to foster perceptions of social support by educating sexual minority students about academic resources and designing mentorship programs. Qualitative findings suggest that mentorship may be instrumental in improving sexual minority students' academic outcomes (Mcleaf, 2014).

In terms of counseling implications, the results of this study suggest that clinicians who work with a sexual minority student with academic struggles may benefit from using a social cognitive framework to conceptualize their academic development. This may involve considering a how a students' sense of academic environmental supports, self-efficacy, and outcome expectations may contribute to their academic goal progress and satisfaction. In addition, clinicians might explore how clients' experiences of heterosexist harassment may relate to their intentions to persist in college. Where such a linkage is suspected, efforts can be made to bolster environmental support, for example, by identifying available academic and social resources and processing a client's potential hesitation to utilize such resources.

Conclusion

This study provides a first step toward examining sexual minority college students' academic well-being through a social cognitive lens. The findings suggest that heterosexist harassment, a stressful experience among sexual minority college students, is associated with less favorable perceptions of the academic environment and, in turn, less satisfaction with the academic experience and more desire to leave college. Thus, the findings highlight ways in which heterosexism relates to negative academic outcomes (and not only to social or psychological ones; Meyer, 2013). Although speculative, the findings also suggest that efforts to bolster academic support systems may be helpful at combating the negative educational outcomes associated with heterosexist harassment. Given the key importance of education to one's vocational success, it is important to combat heterosexism and bolster the academic, as well as emotional, supports for sexual minority college students.

Extended Literature Review

Obtaining a college education may be a protective factor against poverty, as the poverty rate for college graduates is five percent compared to 14% for high school graduates (Baum et al., 2013). However, sexual minorities may be at-risk for attrition from college, and thus losing out on this economic benefit, as many sexual minority students (30%) consider leaving their college institution due to sexuality related reasons (Rankin et al., 2010). Thus, investigating the factors that may contribute to this population's academic well-being is important, as academic well-being can be a predictor of persistence intentions and retention (Lent et al., 2015; Robbins et al., 2004). Some of the predictors may be population-specific (e.g., the heterosexism that sexual minority students experience), while others may apply to all students (e.g., self-efficacy). This literature review will present a brief overview of sexual minority college students, the heterosexism that they face, and a social cognitive framework for predicting their academic well-being.

Sexual Minorities in College

Sexual minority people, broadly defined as individuals who have a sexual orientation other than heterosexual, constitute an estimated 10 percent of college students (Eyermann & Sanlo, 2002). This percentage may grow, as the next generation of high school students identify as sexual minorities at higher rates (Laughlin, 2016). These students face many of the same challenges as others (Oswalt & Wyatt, 2011) along with additional burdens. For example, many face concurrent sexual identity and career development challenges (Hetherington, 1991; Schmidt & Nilsson, 2006), institutional

prejudice (Rankin et al., 2010), and stressful experiences with heterosexist campus environments (Brown & Gortmaker, 2009).

Heterosexism on Campus

Heterosexism is defined as "an ideological system that denies, denigrates, and stigmatizes any non-heterosexual form of behavior, identity, relationship, or community" (Herek, 1990, p. 316). It generally refers to systemic injustices, such as denying employment protections. However, it also refers to hostile interactions that portray non-heterosexuality as unacceptable. This type of heterosexism is referred to as "psychological heterosexism" and it encompasses a wide range of actions including harassment, theft, property damage, and physical/sexual assault (Herek, 1990). Sexual minority college students have a long legacy of enduring all these forms of psychological heterosexism. In early research, sexual minority students were found to experience verbal threats and violence frequently (D'Augelli, 1992). However, incidences of such overt discrimination have decreased while subtler forms still continue to be a challenge, with 68% of sexual minority students in a national survey reporting that they had heard derogatory remarks based on their sexual orientation (Rankin et al., 2010).

Research has linked heterosexist experiences with anxiety, perceived stress, depression, and low self-esteem (see Meyer, 2013; Silverschanz et al., 2008; Woodford, Han, Craig, Lim, & Matney, 2014). However, little research has focused on how these experiences affect academic well-being and retention (Sanlo, 2004; Windmeyer et al., 2013). Researchers of LGBTQ issues in higher education suggest that the literature is so limited because institutions' refuse to survey students' sexual identity, making it impossible to identify and track these sexual minority students' academic outcomes

(Windmeyer et al., 2013). Thus, there is little ability to pinpoint specific attrition risks, explore precursors to academic well-being, and give sexual minority students proper support and resources (Sanlo, 2004). Nevertheless, some researchers have recognized the importance of studying sexual minority students' academic well-being. This modest literature will be reviewed here.

Heterosexism and Academic Well-Being

The literature on college students' experiences of psychological heterosexism (henceforth referred to simply as heterosexist harassment) and their academic outcomes is very limited. This is especially true for overt harassment, such as physical violence. However, the high school literature has found that victimization is associated with a lower GPA (Murdock & Bolch, 2005; Russell, Sinclair, Poteat, & Koenig, 2012), greater absenteeism (Kosciw, Gretak, Diaz, & Barkiewicz, 2010), lower perceived importance of graduating (Poteat, Mereish, DiGiovanni, & Koenig, 2011), and lower intentions to attend college (Aragon, Poteat, Espelage, & Koenig, 2014). The college literature focuses on verbal heterosexism, likely because it is much more ubiquitous than overt violence or victimization (Silverschanz et al., 2008). Indeed, 68% of sexual minority students report verbal harassment, while only 4% report physical violence (Rankin et al., 2010). This review and thesis will focus on verbal harassment because of its likely relevance to most sexual minority college students.

Heterosexist harassment. Silverschanz et al. (2008) defined heterosexist harassment as "insensitive verbal and symbolic behaviors that convey animosity toward non-heterosexuality" (p. 180). They found that both witnessing and experiencing heterosexist harassment correlated with more academic disengagement (e.g., skipping

class or considering withdrawal from the university) and less perceived academic respect (i.e., feeling as though one would be treated respectfully in class). Additionally, they found an interaction effect such that experiencing both witnessed and direct heterosexism predicted the most academic disengagement behaviors and the least perceived academic respect.

Woodford and Kulick (2015) found that direct heterosexist harassment significantly predicted both greater academic disengagement and lower GPA after controlling for demographic variables, perceptions of campus climate, and "outness". However, vicariously witnessed heterosexist harassment did not uniquely predict these outcomes. Beyond Woodford and Kulick's (2015) work, there are no known studies of heterosexist harassment and academic outcomes, as Silverschanz et al. (2008) defined it. Nevertheless, studies have shown relations between similar constructs and lessened academic well-being. For example, Oswalt and Wyatt (2011) found that among lesbian/gay students experiencing discrimination, 16% of them attributed a lower grade on an exam/project (9.4%), a lower grade in a class (2.6%), or dropping out of a course (4%) to their discriminatory experiences. A limitation is that "discrimination" was not explicitly defined as heterosexist harassment. On the other hand, given that lesbian/gay participants experienced discrimination at five times the rate of heterosexual participants, it may be that a substantial amount of the discrimination was heterosexist in nature.

Heterosexist microaggressions. Heterosexist microaggressions are similar to verbal harassment. Although they can happen without an explicit intention to marginalize (Sue, 2010), they may be quite harmful. Indeed, Woodford et al. (2014) found that the incidence of microaggressions had correlated more highly with anxiety than did

heterosexist harassment. In an earlier study, even hearing the phrase, "That's so gay" accounted for 6% of the variance in students feeling "left out" at their university (Woodford, Howell, Silverschanz, & Yu, 2012). The microaggressions literature is especially sparse because most studies focus on more overt verbal harassment. However, Woodford and colleagues (2015) found that incidences of microaggressions correlated with academic developmental challenges (e.g., feeling as though one cannot keep up with class assignments). As of this writing, no additional studies have used this measure, or a comparable one, to investigate how heterosexist microaggressions relate to college students' academic well-being.

From the literature reviewed above, it is apparent that verbal heterosexism is negatively associated with markers of academic well-being. However, no research has correlated precursors of academic well-being, such as self-efficacy, with verbal heterosexism, leaving educators with little insight on how to protect students' academic well-being from the potential negative effects of verbal heterosexism. To address this limitation, Social Cognitive Career Theory (SCCT) will be used to conceptualize how heterosexism may affect academic well-being.

Social Cognitive Career Theory

SCCT may be useful for exploring how heterosexism affects sexual minority students' development of academic well-being. This theory is an integration of multiple career development theories. It brings together conceptually related constructs and predicts outcomes common to multiple theories (Lent et al., 1994). SCCT was derived from social cognitive theory, which "emphasizes the role of self-referent thinking in guiding human motivation and behavior" (Lent et al., 1994). Specifically, SCCT focuses

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on how self-efficacy, expected outcomes, and goal mechanisms interrelate with: (a) personal, (b) contextual (e.g. environmental supports), and (c) experiential/learning factors to contribute to successful career development (Lent et al., 1994).

SCCT Model of Domain Satisfaction

SCCT has been used to model multiple aspects of vocational development. One aspect that is relevant to academic well-being is Lent's (2004) social cognitive model of domain satisfaction. To inform the design of a new well-being model, Lent (2004) reviewed two prominent perspectives on well-being: hedonic well-being (pleasure based) and eudemonic well-being (growth based). The conclusion of the review was that these two types of well-being have considerable overlap, despite being conceptually distinct (see Compton, Smith, Cornish, & Qualls, 1996). Thus, an integrated model of well-being would both consider the development of positive affect and meaningful personal growth (Lent, 2004).

In addition to reviewing the literature that defines well-being, Lent (2004) reviewed the literature on precursors to well-being. The conclusion of this review was that personal dispositions, goal attainment, and personal agency were the primary contributors. From these conclusions, Lent proposed the social cognitive model of domain satisfaction, where goal progress (eudemonic well-being) directly predicts domain satisfaction (hedonic well-being), as the result of multiple contributing processes and attitudes. These included self-efficacy, environmental supports, positive outcome expectations, domain goal progress, and personality traits/affective dispositions. He further postulated that domain satisfaction would then predict general life satisfaction, as

has been observed in both collectivistic and individualistic cultures (Oishi, Diener, Lucas, & Suh, 1999).

Lent et al. (2005) applied this model to educational settings, where a measure of academic satisfaction was used to index students' academic well-being (henceforth referred to as the academic well-being model; Figure 1). This model included five contributing variables, including (a) personality traits and affective dispositions, the intrapersonal variables that predispose one toward pleasant or unpleasant emotions; (b) academic self-efficacy, the confidence in one's ability to successfully cope with academic difficulties and to meet academic milestones; (c) academic goal progress, the amount of progress currently being made towards academic milestones; (d) academic outcome expectations, the beliefs people have about the outcomes of pursuing a college degree; and (e) environmental supports, the contextual factors that influence people's ability to pursue their academic goals or to build their self-efficacy. Lent et al. (2005) also proposed a number of indirect paths among the variables that are linked to academic satisfaction. These relationships coalesce to predict that those with greater environmental support, self-efficacy, and positive outcome expectations are more likely to make progress at their goals and to feel satisfied with their academic lives. Each of the social cognitive constructs in the model will be described in detail, below.

Personality characteristics. Personality characteristics are the intrapersonal variables that predispose one toward certain emotions, behaviors, and cognitive patterns (Lent, 2004). Various personality characteristics, such as positive and negative trait affectivity, can be applied to the model and, depending on which personality

characteristics are chosen, they may have positive or negative correlations with academic satisfaction.

Academic self-efficacy. Academic self-efficacy is the confidence in one's ability to cope with academic difficulties and to reach academic milestones (Lent, 2004). Self-efficacy is believed to contribute to well-being because high self-efficacy reflects confidence about a valued life domain, while low self-efficacy reflects discouragement about such a domain.

Academic goal progress. Academic goal progress is the amount of progress currently being made towards general academic milestones or one's personal academic goals. The theory assumes that making progress toward one's central goals is an important basis for domain satisfaction (Lent, 2004).

Academic outcome expectations. Academic outcome expectations are the beliefs people have about the outcomes of their academic pursuits, such as achieving a college degree. More favorable outcome expectations are expected to contribute to academic satisfaction both directly and by motivating goal progress (Lent, 2004).

Environmental supports. Environmental supports are contextual factors that influence a person's ability to pursue their academic goals or build their self-efficacy. They can take many forms, including institutional resources, material resources, and interpersonal supports. Environmental supports contribute to academic satisfaction because they help an individual to cope with academic challenges, build self-efficacy, and persevere toward goals (Lent, 2004).

Validity of the Academic Well-Being Model

The academic well-being model has been tested in a number of cross-sectional

and longitudinal studies with college students. For example, Lent et al. (2005) found good model-data fit in an ethnically diverse sample of American college students. However, one of the hypothesized pathways, outcome expectations to academic satisfaction, was not supported and the authors did not identify the possible reasons. In several longitudinal studies, similar results were found. Specifically, environmental supports predicted academic goal progress and academic satisfaction in Singley et al.'s (2010) study of American college students, and self-efficacy predicted goal progress in Lent et al.'s (2012) study of Portuguese college students. Another longitudinal test investigated how social cognitive variables predicted academic satisfaction over three time periods (Lent et al., 2015), finding that self-efficacy (at T2) mediated the relationships between environmental supports (T1) and academic satisfaction and persistence intentions (T3), consistent with the theorized path model. Together, these findings suggest that social cognitive constructs are useful for predicting positive academic outcomes over time.

One of the strengths of the academic well-being model is that it can be modified to incorporate cultural variables that may be relevant for a particular population. For example, in studying Asian American college students, Hui and colleagues (2013) included the culture-specific variables of acculturation and enculturation. They found that both of these variables were associated with greater environmental supports, suggesting that both may have protective functions for Asian American college students. In a study of college students who were African immigrants or the children of African immigrants, Ezeofor and Lent (2014) included collective self-construal, relational self-construal, and personal self-construal as culture-specific variables. They found that relational self-

construal was associated with increased environmental support and that personal self-construal was associated with increased self-efficacy and outcome expectations. However, they did not find that any of the culture-specific variables had direct associations with academic satisfaction.

The Academic Well-Being Model and Sexual Minority Students

The academic well-being model may be useful for understanding sexual minority students' academic well-being in part because it can be modified to account for the effects of constructs unique to a particular population. Specifically, it can be used to investigate how heterosexism may impede the development of academic well-being. This new opportunity comes with a fundamental limitation. There is little basis for anticipating whether sexual minority students differ from other populations in how social cognitive constructs predict their academic satisfaction. The academic well-being model is intended to be widely generalizable, and its validity has been demonstrated in diverse populations such as Chinese, African, Portuguese, Taiwanese, and Singaporean college students (Lent et al., 2012; Lent et al., 2014; Sheu, Chong, Chen, & Lin, 2014; Sheu, Lin & Li, 2017). Thus, the core relationships between the social cognitive constructs are presumed to be the same and the difference in sexual minority students' development of academic satisfaction may come from the addition of heterosexism. Thus, leaning on social cognitive theory, comparable social cognitive research, and the heterosexism literature, a preliminary social cognitive model of academic well-being in sexual minority populations is proposed.

Integrating Heterosexism into the Academic Well-Being Model

To explore how heterosexism relates to sexual minority students' academic well-being, this construct must be conceptualized in the context of SCCT. It is possible to conceptualize heterosexism as a *contextual barrier* – that is, as an environmental variable with the potential to impede academic development – in SCCT terminology. By analogy, Lent et al. (2003) studied social-environmental barriers along with other social cognitive predictors of engineering students' intentions to persist in their major. An example of such a barrier was, "[feeling] pressure from your parents or important others to change your major to some other field." These "barriers" constituted a social cognitive construct that was hypothesized to relate directly and negatively to intended persistence in engineering major. It was also expected to relate indirectly to intended persistence via self-efficacy, outcome expectations, and environmental support. Consistent with hypotheses, environmental barriers were negatively related to self-efficacy, outcome expectations, and environmental supports. However, no direct relations between barriers and intended persistence were found. Additionally, this study used measures that were intended specifically for engineering students rather than students in general.

Given that the prior college literature focuses on verbal heterosexism, the current study operationalized heterosexism in this way as well. Heterosexist harassment may be integrated into the academic well-being model similarly to engineering barriers because heterosexist harassment constitutes an environmental barrier that is unique to sexual minority students. However, heterosexist harassment is unique because it is not directly related to one's academic self-appraisal. Instead, it relates to how one experiences the campus environment. Thus, heterosexist harassment would be hypothesized to correlate negatively with environmental supports. Further, heterosexist harassment may be

expected to contribute directly to academic satisfaction because one who experiences harassment may have a subjectively lower evaluation of their overall academic experience (see Figure 2). To further explore these relationships, each pathway will be considered below.

   Heterosexist harassment and environmental supports. Environmental supports may come in many forms (e.g., emotional, social, or financial support). Though heterosexist harassment has not been studied in the social cognitive literature, it has been found to correlate negatively with instructor relations, a measure that assesses comfort in reaching out to instructors for support (Silverschanz et al., 2008; Woodford et al., 2015); the latter may constitute one aspect of environmental support. Another aspect of environmental support involves perceptions of how one is treated in the educational environment. Heterosexist harassment may negatively contribute to perceptions of the class environment; in Rankin et al.'s (2010) national study, 11% of sexual minority students "feared getting a bad grade because of a hostile classroom environment," a rate over three times that of heterosexual students. Further, only 64% felt comfortable with their classroom environment.

   Research on workplace experiences of heterosexist harassment further suggests an association between heterosexist harassment and perceptions of environmental supports. Notably, Velez and Moradi's (2012) found that workplace heterosexist harassment correlated negatively with perceptions of an LGB supportive workplace climate. However, as mentioned previously, perceptions of the environment are only one facet of the social cognitive construct of environmental supports. It also incorporates perceived support from close others, such as friends or family. Thus, for some individuals who

experience on-campus harassment, it may be that there are personal supports who can buffer the effects of the harassment, potentially weakening the relation of on-campus harassment to perceptions of negative environmental supports as defined by social cognitive career theory.

Heterosexist harassment and academic satisfaction. It is expected that the experience of heterosexism will detract from students' sense of satisfaction within the academic domain. Despite the lack of prior research on heterosexism in relation to the social cognitive model of academic satisfaction, there may be a solid theoretical basis for proposing that heterosexism will relate to academic satisfaction. In particular, higher education researcher George Kuh postulated, in the foreword to Rankin et al.'s (2010) work, that sexual minority students may respond to experiences of heterosexism in ways similar to other populations that have experienced discrimination (Carini et al., 2006; Kuh, 2003). He predicted that those who experience heterosexism may become fearful and disengage from the academic activities needed to develop as a student, feel disappointed in themselves, and become dissatisfied with the college experience. Kuh further postulated that these challenges may contribute ultimately to departure from the college environment (Rankin et al., 2010).

Research on a related topic, workplace experiences of heterosexist harassment and job satisfaction, can help to inform the current hypotheses. Waldo's (1999) development study for the Workplace Heterosexist Experience Questionnaire (WHEQ) provided early evidence that a negative association exists between these two constructs. This study's path analyses found that heterosexist harassment negatively predicted job satisfaction, which in turn predicted intentions to withdraw from their job. Velez et al.

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(2013) replicated these results in their study, though the path coefficient was notably smaller than in Waldo's study (-.20 vs. -.53). From these studies, it appears that heterosexist harassment may directly and negatively predict domain-specific satisfaction. Thus, by extension, heterosexist harassment is also hypothesized to negatively predict academic satisfaction.

In sum, heterosexist harassment appears to fit into the academic well-being model as an environmental barrier, meaning that it may hinder the development of academic satisfaction through its negative relationships with other social cognitive constructs as well as, potentially, directly. That is, heterosexist harassment is anticipated to have a negative relationship with both environmental supports and academic satisfaction.

Persistence Intentions: An additional Consideration

The outcome of academic satisfaction is important as a measure of academic well-being and a facet of life satisfaction, an outcome which is associated with increased self-esteem and positive affect (Diener et al., 1985). An equally important concern for individuals working with sexual minority students may be determining the factors that predict their college persistence. Thus, this literature review will include persistence intentions (i.e. the intentions of a student to remain enrolled at their college) as an additional outcome in the model test.

The Academic Well-being Model and Intentions to Persist

Although studies of the social cognitive model of satisfaction have typically been focused on the prediction of domain-specific (e.g. work or school) satisfaction, the model has also been used to predict more ultimate outcomes, most notably life satisfaction and intentions to persist in that life domain. Domain satisfaction, along with certain other

social cognitive variables, has been found to relate to intentions to persist as well as actual persistence within the academic domain. For instance, Brown and colleagues (2008) conducted a meta-analysis of how social cognitive variables predicted persistence. This analysis showed that academic self-efficacy predicted both college GPA and persistence. However, this meta-analysis focused on SCCT's performance model, and thus did not include predictors that are unique to the satisfaction model (e.g., domain satisfaction, goal progress, and environmental supports).

Social cognitive variables have also been found to predict longitudinally engineering students' intentions to remain in their majors (Lent et al., 2015; Navarro, Flores, Lee & Gonzalez, 2014). Navarro et al.'s (2014) study measured relevant social cognitive variables at two time points, 12 months apart. T1 measurements of self-efficacy, academic satisfaction, and environmental supports were found to longitudinally predict academic satisfaction at T2, while only T1 academic satisfaction and intentions to persist predicted intentions to persist in an engineering major at T2, suggesting that academic satisfaction is a useful predictor of intentions to persist, while environmental supports and self-efficacy only predicted academic satisfaction.

Lent et al.'s (2015) measured relevant variables at four time points. Their study found that T2 academic satisfaction, outcome expectations, and self-efficacy all predicted T3 intentions to persist. However, only T3 self-efficacy predicted T4 intentions to persist and academic satisfaction directly, while T2 environmental supports did so indirectly via T3 self-efficacy. Taken together, these results suggest that social cognitive factors, in particular self-efficacy and academic satisfaction, may be useful predictors of intentions to persist in college students. However, the longitudinal results pertained specifically to

students' intentions to persist in an engineering major, rather than persisting in college more broadly.

Another domain of research to consider is work persistence with marginalized populations. Though this is another field of research in and of itself, this literature review will take note of a few representative studies related to women's persistence in engineering. These studies have used a social cognitive framework to model employees' intentions of remaining at their jobs and/or their commitment to their organization; they have found mixed results regarding SCCT's utility. In a study of women engineers, Singh et al. (2013) found that training opportunities (a form of domain specific environmental support) and outcome expectations predicted job attitudes (a composite measure of job satisfaction and organizational commitment). Job attitudes in turn predicted turnover intentions (i.e. the intention to quit working in engineering). However, indirect path analyses were not tested from any of the social cognitive factors to turnover intentions.

Fouad, Singh, Cappaert, Chang and Min (2016) collected data from both current women engineers and those who had recently left the profession. The authors used logistic regression to see if the social cognitive variables could predict whether the women had left engineering. Their results suggested that only organizational commitment and turnover intentions were associated with a significantly higher likelihood of having left engineering. None of the social cognitive variables including self-efficacy, outcome expectations, or job satisfaction were significant predictors. However, two dimensions of environmental support, managerial support for family/work balance and developmental

training supports, were found to significantly differ between the groups in an ANOVA analysis.

Taken together, social cognitive frameworks appear generally to be useful for predicting persistence related outcomes. In particular, evidence has suggested that domain satisfaction, self-efficacy, and domain specific supports may be useful predictors of persistence outcomes. There has, however, been less support for the predictive utility of outcome expectations and goal progress in relation to persistence intentions. On the other hand, there have been relatively few studies using the academic well-being model to predict intentions, and none of these studies have yet focused on sexual minority students. Thus, this study will be the first to apply the well-being model to the academic persistence intentions of sexual minority students. It will also be the first to examine heterosexist harassment in relation to the social cognitive variables predictors and outcomes. The next section will explore relationships that have been observed between heterosexist harassment and intentions to persist.

Heterosexist Harassment and Intentions to Persist

Rankin et al.'s (2010) study suggested that retention of sexual minority students may be cause for concern, yet the literature on sexual minority students' intentions to persist in the face of heterosexist harassment is sparse. Nevertheless, some tentative hypotheses regarding relationship of heterosexist harassment to intentions to persist can be extrapolated from the workplace literature and other SCCT research. For example, Ragins and Cornwell (2001) used a national sample of 435 LGB employees to assess relationships between discrimination based on sexual orientation (analogous to heterosexist harassment) and various job related outcomes. They found that

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discrimination due to sexual orientation predicted increased turnover intentions, decreased organizational commitment, and decreased job satisfaction. It also predicted fewer perceived promotion opportunities and rate of promotion, suggesting that sexual minority individuals who experience heterosexist harassment may have fewer opportunities to succeed in the workplace.

Several other studies on heterosexist harassment in the workplace also included turnover intentions as an outcome. In Waldo's (1999) study, heterosexist harassment predicted job satisfaction which, in turn, predicted job withdrawal (analogous to turnover intentions). Heterosexist harassment also had a modest bivariate relationship with job withdrawal. Using the same sample as Velez et al. (2013), Velez and Moradi (2012) reported a moderate bivariate correlation between heterosexist harassment and turnover intentions. Both of these studies had used path analyses and observed that heterosexist harassment predicted job satisfaction, which in turn predicted job withdrawal/turnover intentions. However, neither of these studies reported the significance of indirect relations; also neither tested the possibility of a direct path from heterosexist harassment to turnover intentions.

Taken together, the literature reviewed above suggests that heterosexist harassment may relate to intentions to persist in two ways. First, heterosexist harassment may negatively predict intentions to persist directly. Second, heterosexist harassment may predict intentions to persist indirectly via domain (academic) satisfaction. Thus, both types of relationships will be considered in the present hypotheses. Further, a clear limitation in this literature is that there were no relevant studies that investigated

intermediate variables between harassment and domain satisfaction for the academic domain.

Summary

In this literature review, an overview of sexual minorities' college experience was presented and heterosexism was conceptualized as a barrier to academic well-being. The SCCT academic well-being model was introduced as a framework for understanding the academic domain satisfaction of sexual minority students and the role of heterosexism within this framework was proposed. Further, the role of the SCCT academic well-being model as a potential predictor of intentions to persist was reviewed and potential relationships between heterosexist harassment and intentions to persist were considered.

Tables

Table 1

Demographic Characteristics for Total Sample (N = 731)

Variable	%	N
Gender		
Men	46.6	341
Women	45.1	330
Transmen	2.3	17
Transwomen	.4	3
Non-Binary/Gender Non-Conforming	4.6	36
Other	.5	4
Sexual Orientation		
Lesbian	14.5	106
Gay	38.8	284
Bisexual	36.6	268
Other	10.0	73
Race		
Black or African American	2.3	17
Hispanic American or Latina/o	8.1	59
White or European American	73.6	538
Asian/Pacific Islander American	8.1	59
Native American	.4	3
Multiracial	6.0	44
Other	1.5	11
Class Standing		
Freshman	26.8	196
Sophomore	28.0	205
Junior	23.3	170
Senior	21.3	156
Other	.5	4

Table 2

Descriptive Statistics and Preliminary Analysis (N = 731)

Variable	*M*	*SD*	*α*	*Skewness*	*Kurtosis*
Self-Efficacy	7.71	1.43	.89	-1.15 (.09)	2.23 (.18)
Outcome Expectations	7.02	1.24	.89	-.68 (.09)	.81 (.18)
Environmental Support	3.81	.72	.84	-.72 (.09)	.98 (.18)
Goal Progress	4.02	.76	.91	-.94 (.09)	.80 (.18)
Academic Satisfaction	4.10	.71	.89	-1.00 (.09)	1.58 (.18)
Intentions to Persist	4.61	.70	.78	-2.25 (.09)	5.69 (.18)
Heterosexist Harassment	1.59	.55	.87	1.36 (.09)	1.82 (.18)

Note. Values in parentheses are standard errors

.

Table 3

Bivariate Correlations Amongst Independent and Dependent Variables

Variable	1	2	3	4	5	6	7
1. Self-efficacy	--						
2. Outcome expectations	.45*	--					
3. Environmental Support	.43*	.50*	--				
4. Goal Progress	.65*	.32*	.45*	--			
5. Academic Satisfaction	.54*	.46*	.59*	.60*	--		
6. Intentions to Persist	.45*	.27*	.31*	.37*	.42*	--	
7. Heterosexist Harassment	- .12*	-.09	-.20*	-.08	-.12*	-.16*	--

Note. An * indicates a significant correlation at the $\alpha = .0024$ level

Table 4

Indirect Effects in the Academic Well-Being Model by Independent Variables

Independent Variable	Mediator Variable(s)	Dependent variable	β	*B*	*SE B*	95% CI	
						Lower	Upper
HH→	ES→	AS*	-.064	.015	-4.177	-.097	-.037
HH→	ES→SE→	AS*	-.011	.005	-2.118	-.024	-.003
HH→	ES→ OE→	AS*	-.010	.004	-2.675	-.020	-.004
HH→	ES→GP→	AS*	-.015	.005	-3.106	-.027	-.006
HH→	ES→SE→OE→	AS*	-.003	.001	-2.549	-.007	-.001
HH→	ES→SE→GP→	AS*	-.017	.005	-3.538	-.028	-.009
HH→	ES→OE→GP→	AS	.002	.001	1.457	.000	.004
HH→	ES→SE→OE→GP→	AS	.001	.000	1.240	.000	.002
ES→	SE→	AS*	.054	.022	2.498	.016	.101
ES→	OE→	AS*	.051	.016	3.168	.024	.089
ES→	GP→	AS*	.075	.016	4.634	.047	.112
ES→	SE→OE→	AS*	.017	.005	3.131	.008	.030
ES→	SE→GP→	AS*	.084	.015	5.723	.059	.117
ES→	OE→GP→	AS	-.008	-.005	-1.530	-.019	.001
ES→	SE→OE→GP→	AS	-.003	.002	-1.326	-.007	.000
SE→	OE→	AS*	.039	.012	3.216	.020	.068
SE→	GP→	AS*	.194	.025	7.618	.148	.249
SE→	OE→ GP→	AS	-.006	.004	-1.377	-.017	.001
OE→	GP→	AS	-.020	.014	-1.499	-.050	.004

Note. * is a statistically significant prediction

Table 5

Hierarchical Regression of Social Cognitive Variables and Heterosexist Harassment on Intentions to Persist

Variable	*β*	*B*	*SE B*	*t*	Sig.
Step 1					
Self-Efficacy	.293	.143	.022	6.418	.000
Environmental Support	.051	.049	.041	1.194	.233
Outcome Expectations	.004	.002	.022	.110	.913
Goal Progress	.035	.032	.043	.749	.454
Academic Satisfaction	.207	.205	.046	4.469	.000
Step 2					
Self-Efficacy	.285	.140	.022	6.276	.000
Environmental Support	.031	.030	.042	.728	.467
Outcome Expectations	.008	.004	.022	.201	.840
Goal Progress	.040	.036	.042	.856	.392
Academic Satisfaction	.208	.205	.046	4.497	.000
Heterosexist Harassment	-.093	-.120	.042	-2.854	.004

Appendices

Appendix A
Consent Form

Project Title	Attitudes and Experiences of LGB College Students Study
Purpose of the Study	This research is being conducted by Taylor Morris, BS, and Robert Lent, PhD, of the University of Maryland, College Park. We are inviting you to participate in this research project because you: (a) are at least 18 years old, (b) are an undergraduate student, and (c) identify as lesbian, gay, or bisexual (Note: If you identify as a transgender LGB individual or queer, you may participate). . The purpose of this research is to ask about sexual minority college students' college experiences (e.g. How much do you agree with the statement, "I get helpful assistance from my advisor"?). In addition to general experiences, some experiences specific to sexual minority students, such as heterosexist harassment, will be measured (e.g. During the past 12 months, have there been any situations that made you afraid that you would be treated poorly if you discussed your sexual orientation?). These measures will help us to examine factors that influence sexual minority students' well-being.
Procedures	This study consists of a 10-minute survey. The survey will ask you how you feel about your academic, emotional, and personal experiences at college. The survey contains various statements that ask you to rate the extent to which each apply to you.
Compensation	Because of your participation, you will be eligible to participate in a drawing for one of several $25 gift cards (one gift card will be given out per 50 participants that complete the survey). Note that you will have to enter a valid email address to enter in this drawing. Your email address will not be connected to your data in any way.
Potential Risks and Discomforts	The main risks associated with the procedures pertain to the adverse effects of responding to survey items. Specifically, participation could lead individuals to experience some boredom and discomfort in responding to the survey questions. The surveys do probe for some sensitive information, but participants will be aware that they can discontinue participation at any time. Furthermore, individuals will be informed of the survey content prior to participation and thus can complete the survey in a comfortable environment of their choosing.
Potential Benefits	The survey is not designed to benefit you directly, though it is possible that some students may benefit from the opportunity to think about how their sexual minority identity relates to their identity as a college student. The study may also help the investigators provide universities with information that may be used to help sexual minority students succeed in college.
Confidentiality	You will not be required to provide any information that may link your identity to your survey responses. The email addresses collected for the raffle will not be

	connected to their survey responses at any time. We will do our best to minimize any potential loss of confidentiality. The data will be collected via an online survey provider and stored in the survey provider's database, which is only accessible with a password. Once the information is downloaded from the online survey provider, it will be stored in a password-protected computer. Any reports based on the survey information will only present the results in aggregate form (e.g., group averages). Individual survey responses will never be reported.
Right to Withdraw and Questions	Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time by closing your browser. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify. If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please feel free to contact the investigator(s): Taylor Morris at trm12@terpmail.umd.edu 3214 Mail Room, Benjamin Building, University of Maryland, College Park, MD 20742 (301) 405-2878
Participant Rights	If you have questions about your rights as a research participant or wish to report a research-related injury, please contact: **University of Maryland College Park** **Institutional Review Board Office** **1204 Marie Mount Hall** **College Park, Maryland, 20742** **E-mail: irb@umd.edu** **Telephone: 301-405-0678** This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.
Statement of Consent	By selecting your choice below you are indicating your right to consent or not consent electronically. Selecting "Yes, I Consent" and clicking on the "Continue" button below indicates that you are at least 18 years old and have read and understand the terms of this study and thus voluntarily agree to participate. If you do NOT wish to participate in this study, please select "No, I DO NOT Consent" and click "Continue" to decline participation.

Appendix B
Sample Advertisement Materials

Sample Ad (Men Targeted)

Appendix C
Academic Self-Efficacy Scale (Milestone & Coping Self-Efficacy)

The following is a list of major steps along the way to completing an undergraduate degree. Please indicate how much confidence you have in your ability to complete each of these steps in relation to the academic major that you are most likely to pursue. Use the 0-9 scale below to indicate your degree of confidence.

How much confidence do you have in your ability to complete the following tasks as a? college student?

	0	1	2	3	4	5	6	7	8	9
Remain enrolled in your intended major over the next semester	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Remain enrolled in your intended major over the next two semesters	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Excel in your intended major over the next semester	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Excel in your intended major over the next two semesters	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Complete the upper level required courses in your intended major with an overall grade point average of B or better	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Here we are interested in knowing how well you believe you could cope with each of the following barriers, or problems, that students could possibly face in pursuing an undergraduate degree. Please indicate your confidence in your ability to cope with, or solve, each of the following problem situations.

How much confidence do you have in your ability to...?

	0	1	2	3	4	5	6	7	8	9
Cope with a lack of support from professors or your advisor.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Complete a degree despite financial pressures.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Continue on in your intended major even if you did not feel well-liked by your classmates or professors.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Find ways to overcome communication problems with professors or teaching assistants in your courses.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Balance the pressures of studying with the desire to have free time for fun and other activities.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Continue on in your intended major even if you felt that, socially, the environment in these classes was not very welcoming to you.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
Find ways to study effectively for your courses despite having competing demands for your time.	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Appendix D
Environmental Supports Scale

Instructions: Many factors can either support or hinder students' academic and social adjustment. Here we are interested in learning about the types of situations that may support your progress in your intended major. Using the 1-5 scale, please indicate how much you agree or disagree with each of the following statements.

At the present time, I…

	1	2	3	4	5
Have access to a "role model" (e.g., someone I can look up to and learn from by observing) in my academic major	○	○	○	○	○
Feel support from important people in my life (e.g., teachers) for pursuing my intended major	○	○	○	○	○
Feel that there are people "like me" in this academic field	○	○	○	○	○
Get helpful assistance from a tutor, if I felt I needed such help	○	○	○	○	○
Get encouragement from my friends for pursuing my intended major	○	○	○	○	○
Get helpful assistance from my advisor	○	○	○	○	○
Feel that my family members support the decision to major in my intended field	○	○	○	○	○
Feel that close friends or relatives would be proud of me for majoring in my intended field	○	○	○	○	○
Have access to a "mentor" who could offer me advice and encouragement	○	○	○	○	○

Appendix E

Academic Outcome Expectations Scale

Instructions: Students' expectations about certain future outcomes can play a role in their adjustment to their academic environments. We are interested in how certain expectations about your academic major may influence your academic experience. Using the 0-9 scale provided, please rate how much you agree or disagree with the following statements.

Graduating with my degree will allow me to…

	1	2	3	4	5	6	7	8	9
...receive a good job (or graduate school) offer	○	○	○	○	○	○	○	○	○
...earn an attractive salary	○	○	○	○	○	○	○	○	○
...get respect from other people	○	○	○	○	○	○	○	○	○
...do work that I would find satisfying	○	○	○	○	○	○	○	○	○
...increase my sense of self-worth	○	○	○	○	○	○	○	○	○
...have a career that is valued by my family	○	○	○	○	○	○	○	○	○
...do work that can "make a difference" in people's lives	○	○	○	○	○	○	○	○	○
...go into a field with high employment demand	○	○	○	○	○	○	○	○	○
...do exciting work	○	○	○	○	○	○	○	○	○
...have the right type and amount of contact with other people (i.e., "right" for me)	○	○	○	○	○	○	○	○	○

Appendix F
Academic Goal Progress Scale

Now we would like for you to rate the following academic goals in terms of
how much progress you are making toward each one at this point in time. That is,
indicate how effectively you feel you are meeting or working toward each goal at present.
Using the 1-5 scale provided, please rate how much progress you feel you are making.

How much progress do you think you are making toward each of the following goals at
this point in time?

	1	2	3	4	5
Excelling at your academic major	O	O	O	O	O
Completing all course assignments effectively	O	O	O	O	O
Studying effectively for all of your exams	O	O	O	O	O
Remaining enrolled in your academic major	O	O	O	O	O
Completing academic requirements of your major satisfactorily	O	O	O	O	O
Achieving / maintaining high grades in all of your courses	O	O	O	O	O
Learning and understanding the material in each of your courses	O	O	O	O	O

Academic Satisfaction Scale

Instructions: Using the 1- 5 scale below, indicate your level of agreement with each of the following statements.

At the present time...

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I feel satisfied with the decision to major in my intended field	❍	❍	❍	❍	❍
I am comfortable with the educational atmosphere in my major field	❍	❍	❍	❍	❍
For the most part, I am enjoying my coursework	❍	❍	❍	❍	❍
I am generally satisfied with my academic life	❍	❍	❍	❍	❍
I enjoy the level of intellectual stimulation in my courses	❍	❍	❍	❍	❍
I feel enthusiastic about the subject matter in my intended major	❍	❍	❍	❍	❍
I like how much I have been learning in my classes	❍	❍	❍	❍	❍

Appendix H

Instructions: Below are some questions about your experiences at your college/university. Some of the questions may apply to you more than others, but please try to respond to each item even if you have never told any of your fellow students that you are lesbian, gay, or bisexual. Please remember that your answers are CONFIDENTIAL.

DURING THE PAST 12 MONTHS at your college or university, how often have you been in a situation where any of your PROFESSORS, STAFF, or FELLOW STUDENTS:

	Never	Once or Twice	Sometimes	Often	Most of the Time
… told offensive jokes about lesbians, gay men, or bisexual people (e.g., "fag" or "dyke" jokes, AIDS jokes)?	❍	❍	❍	❍	❍
… made homophobic remarks in general (e.g., saying that gay people are sick or unfit to be parents)?	❍	❍	❍	❍	❍
… ignored you in the classroom or in a meeting because you are gay/lesbian/bisexual?	❍	❍	❍	❍	❍
… made crude or offensive sexual remarks about you in a way that related to your sexual orientation either publicly (e.g., in the classroom) or to you privately?	❍	❍	❍	❍	❍
… made homophobic remarks about you personally (e.g., saying you were abnormal or perverted)?	❍	❍	❍	❍	❍
… called you a "dyke," "faggot," "fence-sitter" or some similar slur?	❍	❍	❍	❍	❍
… avoided touching you (e.g., shaking your hand) because of your sexual orientation?	❍	❍	❍	❍	❍
…denied you an internship, on-campus job, or research assistantship because of your sexual orientation?	❍	❍	❍	❍	❍
…made negative remarks based on your sexual orientation about you to other students, professors, or staff?	❍	❍	❍	❍	❍
...tampered with your materials (e.g., computer files, cell phone) because of your sexual orientation?	❍	❍	❍	❍	❍

...physically hurt (e.g., punched, hit, kicked or beat) you because of your sexual orientation?	○	○	○	○	○
...set you up on a date with a member of the other sex when you did not want it?	○	○	○	○	○
...left you out of social events because of your sexual orientation?	○	○	○	○	○
...asked you questions about your sexual orientation or love life that made you uncomfortable (e.g., why don't you ever date anyone or come to social events)?	○	○	○	○	○
...displayed or distributed homophobic literature or materials in your dorm or classroom (e.g., email, flyers, brochures)?	○	○	○	○	○
...made you afraid that you would be treated poorly if you discussed your sexual orientation?	○	○	○	○	○
...implied better grades or treatment if you kept quiet about your sexual orientation?	○	○	○	○	○
...made you feel it was necessary for you to pretend to be heterosexual in social situations (e.g., bringing an other-sex date to a social event, going to a heterosexual "strip" bar)?	○	○	○	○	○
…made you feel it was necessary for you to lie about your personal or love life (e.g., saying that you went out on a date with a person of the other sex over the weekend or changing your description of your partner's gender)?	○	○	○	○	○
...discouraged your professors/staff from publicly praising or rewarding you because of your sexual orientation?	○	○	○	○	○
…made you feel it was necessary for you to "act straight" (e.g., monitor your speech, dress, or mannerisms)?	○	○	○	○	○
…made you feel as though you had to alter discussions about your personal or love life (e.g., referring to your partner as a "friend")?	○	○	○	○	○

Appendix I

Instructions: Below are some questions about your experiences in your workplace. Some of the questions may apply to you more than others, but please try to respond to each item even if you have never told any of your co-workers that you are lesbian, gay, or bisexual. Please remember that your answers are CONFIDENTIAL.

DURING THE PAST 24 MONTHS in your workplace, have you been in a situation where any of your SUPERVISORS or CO-WORKERS:

	Never	Once or Twice	Sometimes	Often	Most of the Time
… told offensive jokes about lesbians, gay men, or bisexual people (e.g., "fag" or "dyke" jokes, AIDS jokes)?	❍	❍	❍	❍	❍
… made homophobic remarks in general (e.g., saying that gay people are sick or unfit to be parents)?	❍	❍	❍	❍	❍
… ignored you in the office or in a meeting because you are gay/lesbian/bisexual?	❍	❍	❍	❍	❍
… made crude or offensive sexual remarks about you in a way that related to your sexual orientation either publicly (e.g., in the office) or to you privately?	❍	❍	❍	❍	❍
… made homophobic remarks about you personally (e.g., saying you were abnormal or perverted)?	❍	❍	❍	❍	❍
… called you a "dyke," "faggot," "fence-sitter" or some similar slur?	❍	❍	❍	❍	❍
… avoided touching you (e.g., shaking your hand) because of your sexual orientation?	❍	❍	❍	❍	❍
…denied you an you a promotion, raise, or other career advancement because of your sexual orientation?	❍	❍	❍	❍	❍
…made negative remarks based on your sexual orientation about you to other co-workers?	❍	❍	❍	❍	❍
...tampered with your materials (e.g., computer files, telephone) because of your sexual orientation?	❍	❍	❍	❍	❍

...physically hurt (e.g., punched, hit, kicked or beat) you because of your sexual orientation?	○	○	○	○	○
...set you up on a date with a member of the other sex when you did not want it?	○	○	○	○	○
...left you out of social events because of your sexual orientation?	○	○	○	○	○
...asked you questions about your sexual orientation or love life that made you uncomfortable (e.g., why don't you ever date anyone or come to office social events)?	○	○	○	○	○
...displayed or distributed homophobic literature or materials in your office (e.g., electronic mail, flyers, brochures)?	○	○	○	○	○
...made you afraid that you would be treated poorly if you discussed your sexual orientation?	○	○	○	○	○
...implied faster promotion or better treatment if you kept quiet about your sexual orientation?	○	○	○	○	○
...made you feel it was necessary for you to pretend to be heterosexual in social situations (e.g., bringing another-sex date to a company social event, going to a heterosexual "strip" bar)?	○	○	○	○	○
…made you feel it was necessary for you to lie about your personal or love life (e.g., saying that you went out on a date with a person of the other sex over the weekend or that you were engaged to be married)?	○	○	○	○	○
...discouraged your supervisors from promoting you because of your sexual orientation?	○	○	○	○	○
…made you feel it was necessary for you to "act straight" (e.g., monitor your speech, dress, or mannerisms)?	○	○	○	○	○
…made you feel as though you had to alter discussions about your personal or love life (e.g., referring to your partner as a "roommate")?	○	○	○	○	○

Appendix J

Demographic Questionnaire

Please provide the following demographic information:

Age:

_____

Gender:

_____

Sexual Orientation:

_____

Race/Ethnicity:

- ☐ Black or African American
- ☐ Hispanic American or Latino/a
- ☐ White or European American
- ☐ Asian/Pacific Islander American
- ☐ Native American
- ☐ Multiracial
- ☐ Other (Please Answer Next Question)

    _____

Year in School:

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Other (Please Answer Next Question)

    _____

University Region:

☐ Northwest (e.g., OR, WY, MT)
☐ West (e.g., CA, AK, HI)

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□ Southwest (e.g., TX, OK, UT)
□ Midwest (e.g., KS, NE, IN)
□ Southeast (e.g., FL, LA, NC)
□ Northeast (e.g., MA, CT, ME)
□ Mid-Atlantic (e.g. VA, MD, NY)

Appendix K

The Intentions to Persist Scale

<u>Instructions</u>: Using the scale below, indicate your level of agreement with each of the following statements.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
plan to remain enrolled at my college/university over the next semester	○	○	○	○	○
I think that earning a bachelor's degree at my college/university is a realistic goal for me	○	○	○	○	○
I am fully committed to getting my college degree at my current college/university	○	○	○	○	○

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