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## The Impacts of Discrimination on Mental and Physical Health

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The Impacts of Discrimination on Mental and Physical Health

Mahal Alvarez-Backus

Colby College

## DISCRIMINATION AND HEALTH

### Abstract

The present studies investigated the role of campus climate and discrimination on college students' mental and physical health. Young adults completed measures that assessed their perceptions of campus climate, sense of belonging, depressive symptoms, anxiety levels, sleep quality, physical health symptoms, and experiences with discrimination. Despite the fact that there were not any differences in physical health or sleep quality, there were significant differences in psychological health, specifically with depressive symptoms. Across both studies, there were significant group differences in mental health, particularly that students of color reported higher levels of depressive symptoms than white students. Having empathetic faculty was the most consistently important aspect of campus climate affecting depressive symptoms. The implications of the psychological consequences and the ways in which administration, faculty, and students can help alleviate the negative impacts of poor perceptions of campus climate and experiences with discrimination on the mental health of students are discussed.

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### The Impacts of Discrimination on Mental and Physical Health

Even though society has made seemingly tremendous progress against discriminatory practices, disparities in health, opportunities, and policies prove otherwise. From lack of representation in Fortune 500 companies to systemic segregation to individual beliefs, racial and other minorities are far from feeling included in many areas of their lives. Such exclusion takes a psychological and physical toll on the people who experience the discrimination (Cook, Purdie Vaughns, Meyer, & Busch, 2014; Himmelstein, Sanchez, & Jackson, 2014; Williams & Mohammed, 2008). The current studies aimed to understand the ways in which discrimination and lack of social belonging negatively impact the physical and mental health of college students and exacerbate the differences in well-being between groups.

Numerous studies have examined the mental and physical health consequences of discrimination in everyday life. In a meta-analysis of perceived discrimination and health studies, Pascoe and Richman (2009) synthesize the literature on discrimination and its impact on mental and physical health in a meta-analysis. Mental health consequences include depression, psychological distress, anxiety, and decreased well-being. Experiencing discrimination chronically can lead to the breakdown of the physical body as well. Chronic discrimination can lead to hypertension, self-reported poor health, and breast cancer, as well as being a contributing factor to obesity, high blood pressure, and substance use (Pascoe & Richman, 2009). The authors explain the stress and coping framework that states that discrimination is a social stressor that creates physiological responses, such as increased blood pressure, heart rate, and cortisol secretions, which in turn create long term effects on health. When discrimination is persistent, it depletes one's protective resources while increasing one's vulnerability to physical illness. Pathology and chronic illness stem from stress and discrimination partly due to the long-term failed

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adaptation that results in a decrease in self-control resources and the increased participation in unhealthy behaviors.

Additionally, social belonging plays an important role in the mental and physical health of young adults, as well as their psychosocial functioning. Steger & Kashdan (2009) investigated the role of depressive symptoms on reactivity to negative and positive social interactions. The results indicated that people with greater depressive symptoms were generally more reactive to both negative and positive social interactions but reported fewer positive social interactions and more negative social interactions. As an extension, the authors further investigated the relationship between well-being and belonging among people with greater depressive symptoms. They found that people with greater depressive symptoms reported less satisfaction of their need to belong and experienced less well-being on days when they had negative social interactions. Taken together, these results suggest that social belonging heavily influences well-being in people with greater depressive symptoms. Furthermore, in a sample of 247 college students, belonging predicted better health perceptions for women and fewer physical symptoms for men, suggesting that a sense of connection to a group of others is a key support component for the physical health of college students (Hale, Hannum, and Espelage, 2005).

So far, the research has focused on larger communities such as neighborhoods and workplaces, but there seems to be a gap in the literature surrounding social belonging, discrimination, and health on college campuses. Johnson et al. (2007) examined the sense of belonging among first-year undergraduates from different racial groups. The participants completed a survey asking about students' experiences with academically supportive residence hall climates, socially supportive residence hall climates, course-related faculty interactions, academic transition to college, social transition to college, interactions with diverse peers, campus

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racial climate, and sense of belonging. Their results found that first year Students of Color report a weaker sense of belonging on their campuses than White first year students. The three most influential factors of social belonging were residence hall social climate, transition from high school to college, and overall campus racial climate. Importantly, when one had both a smooth social and academic transition from high school to college, one's sense of belonging was stronger. Finally, positive perceptions of the campus racial climate, the frequency of transracial interactions, friendships, and respect, related to strong senses of belonging.

To better investigate the role of residence hall climate on social belonging, Harwood et al. (2012) investigated racial micro aggressions in residence halls that Students of Color at a predominantly White university reported. The researchers used focus group data and identified four categories of micro aggressions: racial jokes and verbal comments, racial slurs written in shared spaces, segregated spaces and unequal treatment, and denial and minimization of racism. In total, the participants reported over 70 microaggressions and these experiences negatively impact minority students' sense of social belonging, academic outcomes, emotions, and health (Harwood et al., 2012).

Furthermore, minority stress, stress experienced as a result of one's stigmatized identity, creates a wide variety of problems such as interethnic difficulties, within-group conflicts, achievement stress, depressive symptoms, and racism (Wei et al., 2010). One study investigated the secondary emotional, interpersonal, and academic difficulties that stem from African Americans' perceptions of racism on predominately white college campuses. High perceived racial discrimination correlated with high rates of depression, academic anxiety, suicidal ideation, interpersonal concerns, maladaptive eating habits, and sleep disturbances (Chao, Wei, and Mallinckrodt, 2012). There are many possible explanations for these emotional, physical and

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academic consequences. Perhaps institutional racism, the systematic and historical policies that deny racial minority groups opportunities and resources, negatively impact mental and physical health through lack of institutional support for racial minorities on campus. Another explanation of these problems might be the person-to-person racism that minority students experience (Chao, Wei, and Mallinckrodt, 2012).

While the majority of research focuses on race and Students of Color, these findings can be extended and applied to other minority groups on college campuses. First-generation students also struggle with social belonging on campuses due to the stigma of low socio-economic status, being “at risk”, and differences in college preparation. Many assume that all first-generation students lack quality college preparation and resources and therefore differ from their continuing generation peers in their college experience and have lower academic outcomes. Stephens et al. (2012) rebuked the resource deficiency hypothesis and proposed that there is a cultural mismatch between the middle-class, independent norms emphasized by American universities which aligns well with continuing generation students, but not with first-generation students. Researchers measured physiological responses during academic tasks. They found that for first-generation students, being in a culturally-mismatched environment leads to negative physiological responses such as higher levels of cortisol, stress, and more negative emotions (Stephens et al., 2012). Increased, prolonged activation of the HPA axis leads to negative mental and physical health outcomes.

However, other studies suggest that the differences between first-generation and continuing generation students are small. One study asked participants to complete online measures of self-esteem, locus of control, and academic adjustment, along with a self-reported GPA. Self-esteem refers to one’s positive or negative attitudes about oneself. Locus of control

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determines whether or not a person attributes their success and failures to internal or external factors (Aspelmeier et al., 2012). The authors found that the differences between first-generation and continuing generation students were small. Results suggested that, generally, self-esteem was a strong predictor of college adjustment, but internal locus of control was a moderate predictor of higher self-reported GPA and adjustment to college, especially for first-generation students (Aspelmeier et al., 2012). Even though the differences between first-generation and continuing generation students are small, that does not mean that first-generation students do not battle negative stereotypes and stigma and therefore schools should support first-generation students' self-perceptions and healthy attribution styles.

International students are an often forgotten population on American university campuses. Negative stereotypes and broad initial adjustment make the college experience for international students a difficult one. Many international students leave their social networks at home, take classes in their second or third language, and of course must adapt to cultural differences which can lead to extreme loneliness, headaches, insomnia, and mental exhaustion (Lacina, 2002). One study followed 18 Chinese undergraduates over one year to better understand their challenges as international students. Initial challenges included communication, thinking like a 'Westerner', understanding classroom expectations, and learning new sociocultural contexts (Heng, 2016). Participants reported that the English they learned in China was too academic for everyday conversations. The American education system values critical thinking, participation, and student perspectives, all of which differ greatly from the Chinese education system. Adjusting to a new sociocultural context also poses challenges in understanding historical, religious, and political references. Without any consideration of these struggles, American faculty and students

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incorrectly stereotype Chinese students as passive, unsocial, and bad at English. These assumptions hurt the sense of belonging, mental and physical well-being of international students.

Building off previous literature, the current studies examined the relationship between discrimination, social belonging, health, and differences in well-being between groups. Importantly, this study investigated the association of discrimination and health in Students of Color, International Students, and First Generation students at an elite, predominately white, small liberal arts college. Study 1 focused on differences in mental health and well-being between groups. It was hypothesized that Students of Color (SOC), First-generation, and International students would report higher rates of anxiety and depression, but lower social belonging than their majority group counterparts. Additionally, it was hypothesized that a less cohesive sense of campus climate would be associated with higher rates of depression, higher rates of anxiety, and lower rates of sense of belonging. As an extension of Study 1, Study 2 examined the ways in which physical health outcomes differed between students from these three identity groups and students from majority groups. It was hypothesized that there would be significant group differences in physical health, and that individuals who reported more experiences of discrimination would report poorer physical and mental health.

### **Study 1: Method**

#### **Participants**

Two hundred ninety-three Colby College students between the ages of 18 and 25 participated in Study 1 ( $M_{age}=19.94$ ,  $SD= 1.53$ ). These participants were recruited for a larger study about alcohol use, social belonging, and other college experiences and were compensated either 1 psychology research credit or \$10 for each session. Demographics are presented in Table 1.

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### Materials

**Campus Community Scale.** Participants' feelings of campus openness and overall climate were measured using the Campus Community Scale (Cheng, 2004). Participants rated their level of agreement with 25 questions that measured the ease of socializing and satisfaction with academics on a 4-point scale ranging from *strongly agree* to *strongly disagree* or *very dissatisfied* to *very satisfied*, depending on the question. Subscales included open environment, teaching and learning, residential experience, intercultural programming, history and tradition, stress and loneliness, socializing across backgrounds, and friendship.

**Social Belonging Scale.** To assess participants' sense of academic belonging and comfort in the classroom, the Social Belonging Scale was used (Hoffman, Richmond, Morrow, & Salomone, 2002-2003). Participants read 26 statements and then rated how true this statement was to their experiences. Possible responses ranged from *completely true* to *completely untrue*. Subscales included psychological total, perceived peer support, perceived faculty support, perceived classroom comfort, perceived isolation, and empathetic faculty.

**Sense of Belonging Inventory.** Participants rated their sense of social belonging using the Sense of Belonging Inventory (Hagerty & Patusky, 1995). Participants rated their level of agreement with 18 statements on a 4-point scale ranging from *strongly agree* to *strongly disagree*. Subscales included psychological total, fit, valued involvement, energy for involvement, potential and desire for meaningful involvement, and potential for shared and complementary characteristics. This study has shown that this measure has adequate internal consistency (Cronbach's  $\alpha=0.94$ ).

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**Beck Depression Inventory.** Participants' levels of depressive symptoms were measured using the Beck Depression Inventory (Beck, Steer, & Brown, 1996). This measure consisted of 21 multiple choice self-report questions that assessed symptoms of Major Depressive Disorder, a mental health disorder characterized by a lack of interest and pleasure, significant weight loss or gain, insomnia or hypersomnia, lack of energy, feelings of worthlessness and recurrent thoughts of death or suicide (apa.org, 2019). Each answer was scored on a scale from 0 to 3. A score of 0-13 indicates minimal depression while a score of 29-63 indicates severe depression. This research has shown that this measure has adequate internal consistency (Cronbach's  $\alpha=0.93$ ).

**State-Trait Anxiety Inventory.** The State-Trait Anxiety Inventory was used (Spielberger, 1983) to assess participants' current levels of anxiety. This measure had 20 self-report questions that assessed subjective feelings of tension, apprehension, nervousness, and worry all of which characterize the state of anxiety. Each item has a score of 1 to 4 with higher scores indicating greater anxiety. This study has shown that this measure has adequate internal consistency (Cronbach's  $\alpha=0.94$ ).

### **Procedure**

Participants came into a research lab where they completed the first session of the study. Participants provided informed consent, completed a demographics questionnaire, and a series of questionnaires, including the Campus Community Scale, Sense of Belonging Inventory, Beck Depression Inventory, Social Belonging Scale, and State-Trait Anxiety Inventory. Thirty days later, participants were contacted to complete a follow-up survey online, but those data and other baseline questionnaires were not relevant to this study. At the end of the survey, participants were debriefed and compensated.

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### Statistical Analyses

Variables with outliers were winsorized at 95% . The following variables were winsorized: CCS subscale open environment, CCS subscale teaching and learning, CCS subscale friendship, SOBI total, SBS subscale peer support, SBS subscale faculty support, SBS subscale empathetic faculty, and BDI total and all SBS and CCS subscales were mean centered. To assess group differences for depressive symptoms and social belonging, we ran independent samples T-tests. To evaluate the general aspects of campus climate and its associations with depressive symptoms and social belonging, we conducted multiple linear regression. Finally, to evaluate whether aspects of campus climate were specifically predictive of depressive symptoms and social belonging for different identity groups, we ran a moderation between groups.

### Study 1: Results

Study 1 predicted that there would be group differences in mental health. Specifically, students from marginalized identities would report poorer mental health and poorer sense of belonging. To investigate whether there were group differences in anxiety, depressive symptoms, and sense of belonging, independent samples *t*-tests were conducted. Figure 1 displays the mean score of anxiety as a function of identity group. There were significant differences in the anxiety scores for international students ( $M= 42.17, SD= 14.67$ ) and domestic students' anxiety levels ( $M= 39.58, SD= 10.79$ ) ( $t(-1.36) = 291, p = .002$ ). There were significant differences between first generation students' anxiety levels ( $M= 45.86, SD= 12.87$ ) and continuing generation students' anxiety levels ( $M=38.93, SD= 10.88$ ) ( $t(-3.75) = 291, p = .000$ ). There were significant differences between the anxiety levels of students of color ( $M= 43.26, SD= 13.06$ ) and anxiety levels of white students ( $M= 38.58, SD= 10.44$ ) ( $t(-3.23) = 290, p <.007$ ). Similarly, there were significant differences between first generation students' depressive symptoms ( $M=14.12,$

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$SD=9.31$ ) and continuing generation students' depressive symptoms ( $M= 7.80, SD= 7.21$ ) ( $t(-4.08), p =.002$ ). There were significant differences between depressive symptoms of students of color ( $M=12.05, SD= 11.48$ ) and depressive symptoms of white students ( $M= 7.38, SD= 6.80$ ) ( $t(-4.31), p =. 000$ ); there was not a significant difference between international ( $M= 41, SD= 9.05$ ) and domestic students' depression ( $M= 6.71, SD= 7.04, t(-1.83), p =.068$ ), see Figure 2. There were significant differences in sense of belonging between international students ( $M= 51.26, SD=12.10$ ) and domestic students ( $M=57.65, SD= 9.19$ ) ( $t(3.97)= 291, p =.000$ ); first generation students ( $M= 48.86, SD=11.52$ ) and continuing generation students ( $M= 58.09, SD=8.94$ ) ( $t(5.98)= 291, p =.000$ ); and students of color ( $M= 52.41, SD=9.88$ ) and white students ( $M= 58.69, SD=9.12, t(5.24)= 290, p =.000$ ), see Figure 3.

To investigate which aspects of academic belonging and campus community impacted depressive symptoms and sense of social belonging, multiple linear regression analyses were conducted. Within the Social Belonging Scale, the subscales of empathetic faculty ( $\beta =.21, p < .001$ ), isolation ( $\beta = -.24, p < .001$ ), and classroom comfort ( $\beta = .15, p = .02$ ), predicted depressive symptoms. For the Campus Community Scale, the subscales of open environment ( $\beta =-.21, p = .01$ ) and stress and loneliness ( $\beta =.27, p < .001$ ), both uniquely predicted depression.

Within the Social Belonging Scale, the subscale of isolation ( $\beta =.45, p < .001$ ) predicted sense of social belonging. For Campus Community Scale, the subscales of open environment ( $\beta = .23, p < .001$ ), teaching and learning ( $\beta = .16, p < .001$ ), intercultural programs ( $\beta = -.14, p = .01$ ), history and tradition of the school ( $\beta = .24, p < .001$ ), stress and loneliness ( $\beta =-.24, p < .001$ ), friendship ( $\beta = .21, p < .001$ ) all uniquely predicted sense of social belonging.

Finally, to investigate whether group identity moderated associations of mental well-being and perceptions of campus climate, a series of moderation analyses were conducted.

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Across three models, the interactions of each identity group with the SBS scales were examined as predictors of BDI. This was repeated with CCS scales, and then similar analyses were conducted predicting SOBI.

### **Beck Depression Inventory**

First generation status moderated the association of SBS peer support and depressive symptoms ( $B = 5.21, SE = 2.14, p = .02$ ) and SBS empathetic faculty members and depressive symptoms ( $B = 5.15, SE = 2.23, p = .02$ ). When first-generation students perceived that they lacked empathetic faculty members and peers, their depressive symptoms were particularly negatively impacted. Within the SBS scales racial identity moderated the association between SBS empathetic faculty members and depressive symptoms ( $B = 3.83, SE = 1.83, p = .04$ ). When students of color perceived that they lacked empathetic faculty members, their depressive symptoms were negatively impacted. Residential status did not moderate the associations between SBS subscales and depressive symptoms. There were no significant interactions between group identity and CCS subscales that predicted depressive symptoms.

### **Sense of Belonging Inventory**

First-generation status moderated the associations between SBS peer support ( $B = -4.98, SE = 2.53, p = .022$ ) and sense of belonging. When first-generation students perceived that they lacked peer support, their sense of belonging decreased. Neither racial identity nor residential status moderated the associations between SBS subscales and sense of belonging. There were no significant interactions between group identity and CCS that predicted sense of belonging.

## **Study 2: Method**

### **Participants**

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One hundred twenty-one Colby College students between the ages of 18 and 25 participated in Study 2 ( $M_{age}=19.87$ ,  $SD= 1.38$ ). Participants were compensated either 1 psychology research credit or \$10 for each session. Demographics are presented in Table 4.

### **Procedure**

Study 2 was an extension of study 1 by incorporating previously used mental health measures and adding physical health measures. Participants completed the study in a private room in a research lab. Participants provided informed consent, completed the Campus Community Scale, Sense of Belonging Inventory, Beck Depression Inventory, Social Belonging Scale, State-Trait Anxiety Inventory, Pittsburgh Sleep Quality Inventory, Short-Form Health Survey, and Everyday Discrimination Scale, and a demographics questionnaire. At the end of the survey, participants were debriefed and compensated.

### **New Measures**

**Pittsburgh Sleep Quality Index.** The Pittsburgh Sleep Quality Index (Buysse et al., 1989) was used to measure the participants' quality of sleep. This measure had 9 self-report questions that assessed subjective sleep quality, sleep latency, sleep duration, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. Each item has a score of 0 to 3 with higher scores reflecting more negative sleep quality. The present analyses focused on a single-item that assessed the overall sleep quality. Prior research has shown that this measure has high internal consistency (Grandner et al., 2006).

**Short-Form Health Survey.** The Short-Form Health Survey (Ware & Sherbourne, 1992) was used to measure the participants' health. This measure had 36 self-report questions about limitations in physical activities because of health problems, limitations on social activities because of physical or emotional problems, limitations in usual role activities because of

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physical health problems, bodily pain, general mental health, limitations in usual role activities because of emotional problems, vitality, and general health perceptions. Scoring is based on the Likert method of summated ratings, with high scores meaning good health, except the social function subscale. The measure had good internal consistency in this study (Cronbach's  $\alpha = .858$ ). Prior research has shown that this measure has strong convergent validity (Hays, Sherbourne, & Mazel, 1995).

**Everyday Discrimination Scale.** The Everyday Discrimination Scale (Williams et al., 1997) was used to assess the participants' experiences with discrimination. This measure had 10 self-reported questions about the quality of treatment the participant receives, the frequency in which they are treated this way, and why the participant believes they are treated this way. Responses vary from *almost everyday* to *never*. Higher scores indicate less experiences with discrimination. The measure had good internal consistency in this study (Cronbach's  $\alpha = .822$ ). Other research has shown that this measure has high convergent validity (Gonzales et al., 2015).

### Statistical Analyses

Variables with outliers were winsorized at 95%. The following variables were winsorized: SBS faculty support subscale, SBS empathetic faculty subscale, BDI, and EDS. In order to form interaction terms, all subscales for the SBS, CCS and EDS were mean centered. To assess group differences for mental and physical health, we ran independent samples T-tests. To evaluate the associations of general aspects of campus climate with mental and physical health, we conducted multiple linear regression. Finally, to evaluate whether aspects of campus climate were specifically predictive of depressive symptoms and physical health for different identity groups, we ran moderation analyses.

### Study 2: Results

Study 2 predicted that group differences in psychological health would be replicated and that there would be group differences in physical health. To investigate whether there were group differences in psychological and physical health, independent samples *t*-tests were conducted. There were not significant group differences in STAI scores, SOBI scores, SF-Health Survey, or PSQI scores and therefore, these measures were not included in further analyses. Figure 4 displays the mean score of BDI depressive symptoms as a function of identity group. There were significant differences in the depressive scores for Students of Color ( $M= 10.30, SD= 8.61$ ) and white students ( $M= 7.28, SD= 7.23, t(119) = 2.09, \text{Cohen's } d(0.38), p = .039$ ). There were not significant differences between international students ( $M= 10.12, SD= 9.00$ ) and domestic students' depressive symptoms ( $M=8.46, SD=7.84, t(119)= .90, p = .368$ ), nor were there significant differences between first generation students' depressive symptoms ( $M=10.36, SD=9.39$ ) and continuing generation students' depressive symptoms ( $M= 8.18, SD= 7.47, t(119)= 1.33, p = .186$ ).

To investigate which aspects of academic belonging, campus community, and experiences with discrimination impacted depressive symptoms, multiple linear regression analyses were conducted. Within the Social Belonging Scale, the subscale of faculty support ( $\beta = .26, p = .006$ ) uniquely predicted depressive symptoms. For the Campus Community Scale, the subscale of stress and loneliness ( $\beta = .26, p = .007$ ) uniquely predicted depression. The Everyday Discrimination Scale also uniquely predicted depressive symptoms ( $\beta = .31, p = .000$ ).

Lastly, to investigate whether group identity moderated associations of mental well-being and perceptions of campus climate, a series of moderation analyses were conducted. Across

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three models, the interactions of each identity group with the SBS scales were examined as predictors of BDI. This was repeated with CCS scales and EDS,

### **Beck Depression Inventory**

Within the SBS scales, racial identity moderated the association between SBS empathetic faculty members and depressive symptoms ( $B = 8.13$ ,  $SE = 3.12$ ,  $p = .010$ ). When students of color perceived that they lacked empathetic faculty members, their depressive symptoms were negatively impacted. Similarly, residential status moderated the associations between SBS empathetic faculty and depressive symptoms ( $B = 12.70$ ,  $SE = 4.65$ ,  $p = .007$ ). When international students perceived that they lacked empathetic faculty, their depressive symptoms were negatively impacted. Within the CCS scales, racial identity moderated the association between CCS friendship and depressive symptoms ( $B = -5.57$ ,  $SE = 2.70$ ,  $p = .042$ ). Similarly, residential status moderated the associations between CCS open environment ( $B = 11.36$ ,  $SE = 5.27$ ,  $p = .034$ ); CCS residential experience ( $B = -9.45$ ,  $SE = 4.43$ ,  $p = .035$ ); and CCS intercultural programming ( $B = 12.43$ ,  $SE = 4.87$ ,  $p = .012$ ) and depressive symptoms. There were no significant interactions between group identity and EDS that predicted depressive symptoms.

### **Discussion**

Based on previous research, Studies 1 and 2 investigated if there were aspects of campus climate and experiences with discrimination that were predictive of these differences and if there were group differences in mental and physical health of college students. Study 1 found that specific aspects of campus climate such as low open environment, high levels of stress and loneliness, and lack of empathic faculty uniquely predict depressive symptoms. There were also aspects of campus climate that predicted sense of belonging, including lack of intercultural programming, poor friendships, and lack of open environment. Similarly, Study 2 used the same

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measures and found comparable effects of campus climate on depressive symptoms. High levels of stress and loneliness, discrimination and lack of faculty support all uniquely predicted depressive symptoms. The results from both studies are consistent with Johnson et al.'s (2007) findings that positive perceptions of the campus racial climate, the frequency of transracial interactions, friendships, and respect, related to strong senses of belonging. These results also indicate that perceptions of campus climate are more predictive of these mental health differences rather than experiences with discrimination.

Overall, there are specific aspects of campus climate that are predictive and important for the mental health of students. These findings suggest that the senior administration should be aware of the perceptions of campus climate and ensure that students have access to mental health resources and support groups on campus to act as buffers for the negative aspects of campus. However, those resources are only short-term solutions, and senior administration should be working to improve those aspects of the college experience that cause the deterioration of mental health.

Additionally, combining Study 1 and Study 2, there were significant group differences in mental health for all three identity groups. Students from marginalized identities reported higher levels of stress, anxiety, and depressive symptoms than majority group counterparts. Study 2 did not find significant differences for sleep quality and physical health symptoms. The lack of evidence for differences in physical health symptoms may be attributed to the types of questions in the Short-Form Health Survey. This survey assessed physical health symptoms that would typically be problems for an older population and this study focused on young adults. Across both studies, SOC reported higher levels of depressive symptoms than white students. In the first study SOC and first-generation students both reported higher rates of depressive symptoms than

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white students and continuing-generation students, and in the second study SOC reported higher depressive symptoms than white students. These differences are consistent with Wei et al.'s (2010) work on minority stress that found that minority stress, stress experienced as a result of one's stigmatized identity, creates a wide variety of problems such as interethnic difficulties, achievement stress, and depressive symptoms (Wei et al., 2010). While the exact results did not replicate across studies, there were clear differences in psychological health thereby supporting the idea that the stress felt by minority students negatively impacts their mental health. Given that Colby has a predominantly white, domestic, and continuing generation student body, those students who do not belong to those groups feel Othered and alienated by the dominant culture on campus. The lack of representation, empathy, and consideration for their experiences negatively influences their mental well-being.

Lastly, Study 1 found that peer support and empathetic faculty had an extra impact on depressive symptoms for SOC and first-generation students. Generally, empathetic faculty was important for mental health, but when SOC and first-generation students felt like they lacked empathetic faculty, their depressive symptoms increased significantly, more so than for those not having a marginalized identity. Study 2 also found that empathetic faculty had an extra impact on depressive symptoms for SOC and international students. The theme of empathetic faculty was found across the two data sets for all three identity groups related to depressive symptoms. Furthermore, the empathetic faculty items within the SBS do not specifically ask about the experience of students from marginalized identities. The lack of specificity suggests that the importance of empathetic faculty reaches beyond identity and faculty need to express more concern for students in general. College-aged individuals are at an interesting point in their lives in which they are gaining independence and trying to develop their sense of self. There are many

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stressors for people during this time and having someone express concern and support for these stressors enables students to continue to engage in academics, overcome these obstacles, and build positive relationships. Senior administration should make it a priority to establish the importance of empathy in every aspect of the college experience and community. The institution should also reassure students from marginalized identities that they do have a place at the school, even if their identity has not been historically represented at the college.

There were several limitations within these two studies. Firstly, there was a small sample size for Study 2 and that would have decreased statistical power and prevented other statistical differences from being observed. Secondly, the Short-Form Health Survey assessed physical health symptoms that would typically be problems for an older population and this sample was only young adults. If the health assessment was focused more on symptoms or illnesses that young adults tend to get while at college, more physical health differences might have been found. The good general health of the population inhibited the examination of the relationship between discrimination and physical health outcomes. Thirdly, there was not enough variability to look at intersectionality. Sufficient variability would have allowed for a better understanding of how accurately this sample represent the larger, more general population. Moreover, due to the lack of variability, these studies were unable to investigate any intersectionality between group identities. It would have been interesting to closer examine the mental health outcomes of those individuals with multiple marginalized identities. Fourthly, the regression models were limited in the fact that they were cross sectional and correlational. Even though correlation tests relationships between variables, correlation does not necessarily mean that one variable causes the change in the other variable; therefore, we cannot positively conclude that group identity produces these differences in mental health.

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Despite these limitations, these studies add to the ever-developing literature surrounding mental health among minority students. Previous research on mental health, discrimination, and individuals from marginalized identities tended to focus on adults and their general experiences with discrimination in everyday life. While there seems to be a shift towards investigating the consequences of discrimination for college students, there is more to be done. The fact that this relatively small sample size and short time frame supported the substantial findings on the mental health differences for individuals from marginalized identities suggests that these health disparities should be taken seriously and are prevalent. Recommendations from these two studies include more consistent and continual diversity, inclusion, and equity training as well as empathy training for faculty, designated leaders on campus (Hall Staff, Colby Emergency Response, COOT Leaders, and International Buddies), and the student body in general. Faculty need to be aware of the significant obstacles that minority students face and express their concern and support for all students, but especially students from marginalized identities. In addition to trainings, perhaps faculty should explicitly state their support for their students on the syllabus as well as list campus support resources. One possible way to implement diversity and empathy training for students is to create mandatory meetings throughout the first year, much like the required Wellness Seminars, followed by multicultural discussions in the dorms or in the Pugh Center during the sophomore year. Finally, senior administration should take a firm stance against any activity that creates an exclusive culture on campus, especially with those activities that have racist and classist origins.

Future research should focus on the efficacy and implementation of trainings and support programs. Given more time and funding, research on this topic should be longitudinal and include more assessments of physical health that target young adults. Additionally, future

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research should examine the ways in which adverse childhood experiences (ACEs) impact the mental and physical health outcomes in college aged individuals and how ACEs play a role in these health disparities. Felitti et al (1998) examined the relationship between experience with childhood adversities and health risk behavior and disease in adulthood. Their questionnaire included seven categories of adverse childhood experiences: psychological, physical, or sexual abuse; violence against mother; living with household members who were substance abusers, mentally ill, or ever imprisoned. The number of adverse childhood experience (ACEs) were then compared to measures of adult risk behavior, health status, and disease. Results showed a strong relationship between stressful childhood experiences and adult health risks. Prolonged toxic stress has detrimental effects on one's health: people who reported four or more ACEs had a 4-to 12-fold increase risk for alcoholism, drug abuse, and depression, compared to those who did not report any ACEs. In a more recent study, Cronholm et al (2015) extended the work of Felitti et al (1998) by using a more socioeconomically and racially diverse population. Further, the authors used a survey that extended beyond the Conventional ACEs (stresses that occur inside the home). The Expanded ACEs asked about stresses that happen outside of the home at a community level. They found that some demographics are at higher risk for community level stressors especially surrounding identities of gender, race, and socioeconomic status.

The finding that lack of support, inclusion, and empathy, as shown by these two studies, negatively impacts the mental health of those from marginalized identities emphasizes the need for progress on college campuses. Even though these studies focused on a college experience, their implications are relevant and timely given the sociopolitical environment. The results show many aspects of campus culture impact mental health disparities; perhaps these disparities are exacerbated by the increased number of bias incidents, hate speech, and attacks on civil rights

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that occur on campus and in the country. Colleges and universities should make it a priority to deeply care about their students and to eliminate the aspects of campus climate that impede social belonging and well-being.

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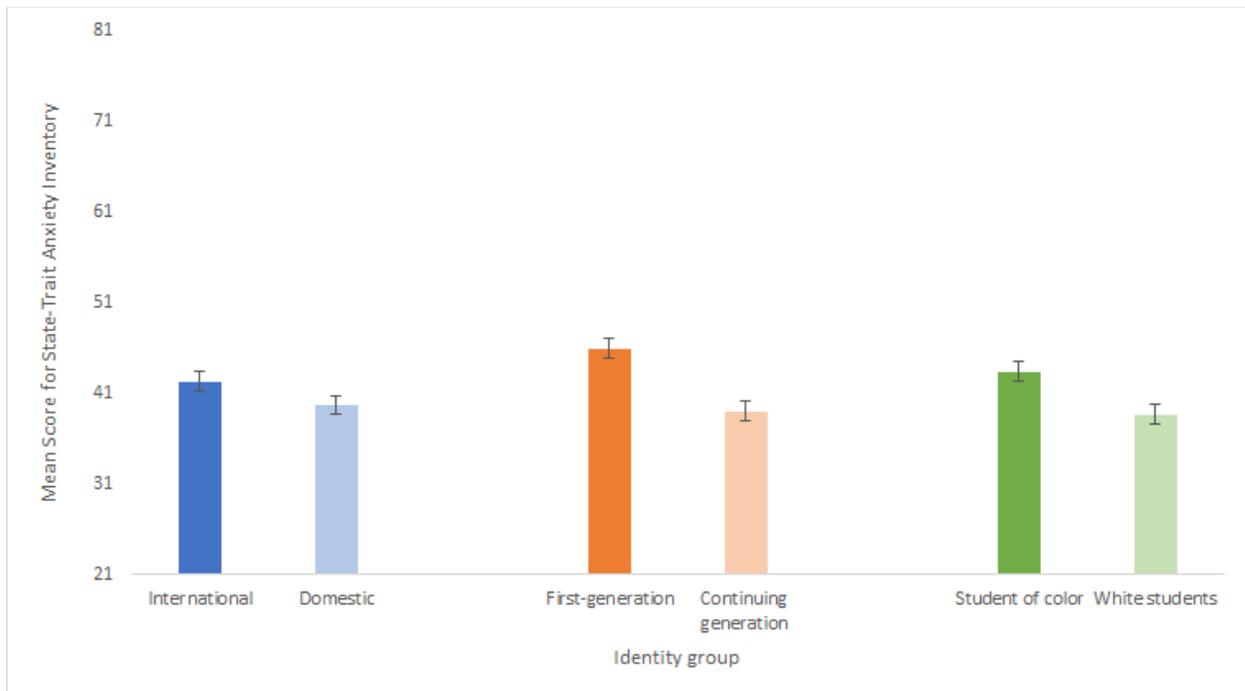
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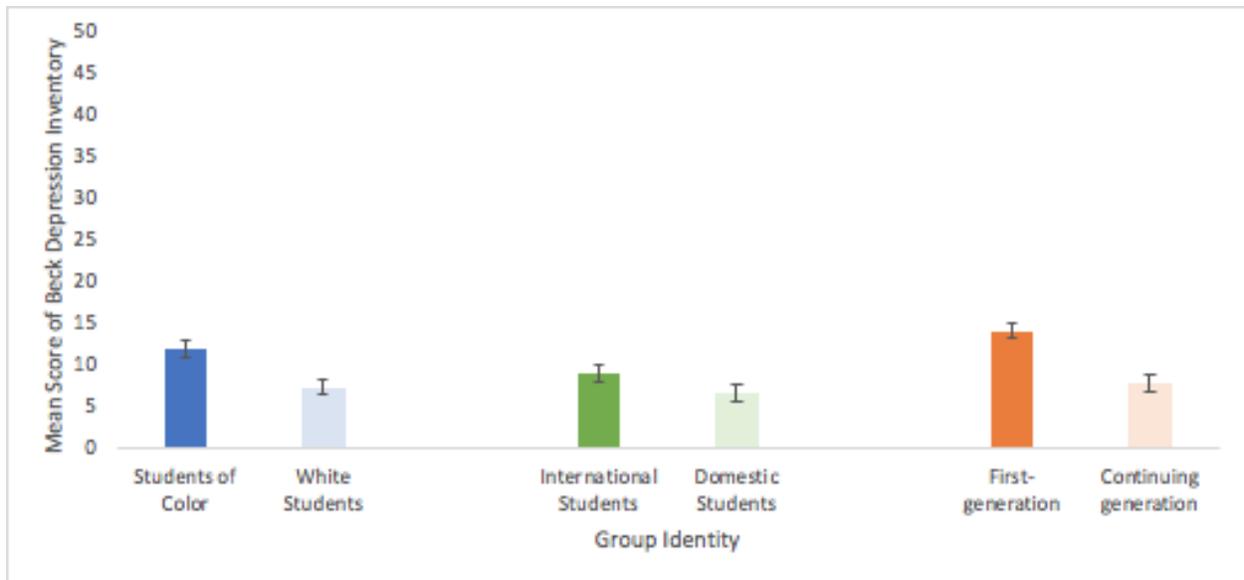
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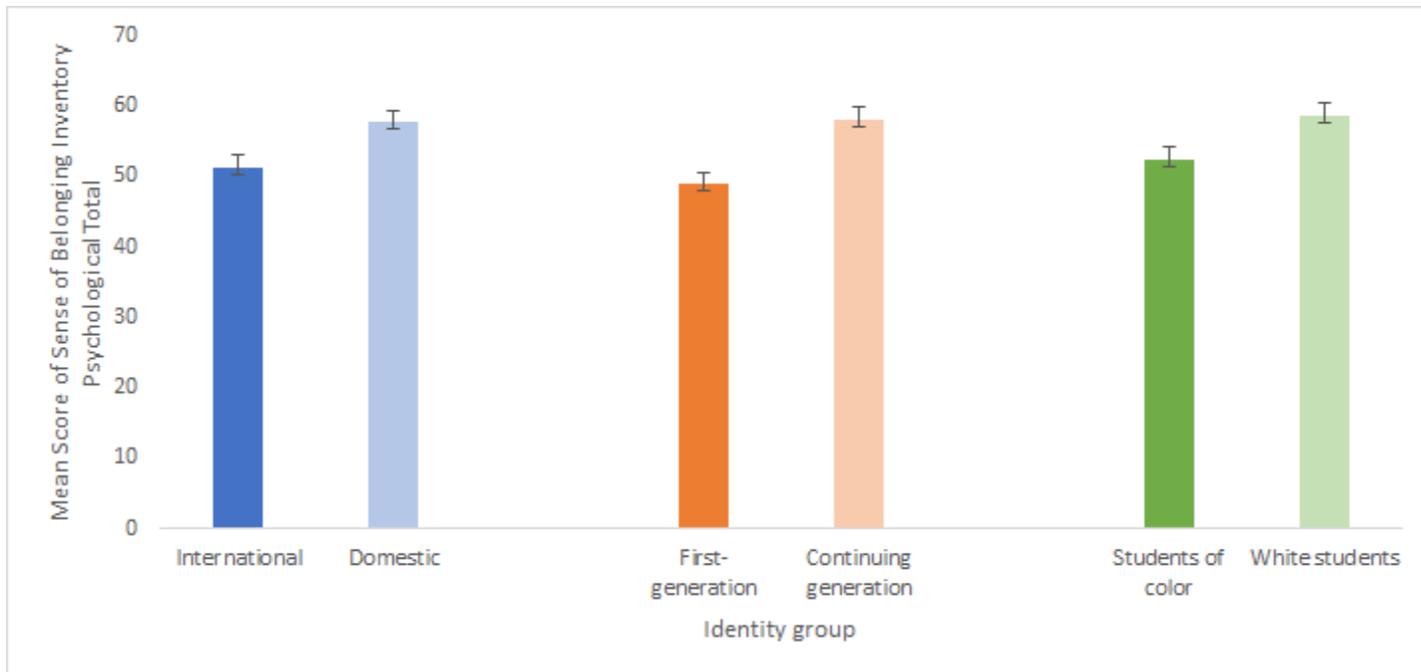
*Figure 1.* Mean score of State-Trait Anxiety Inventory as a function of identity group for Study 1.

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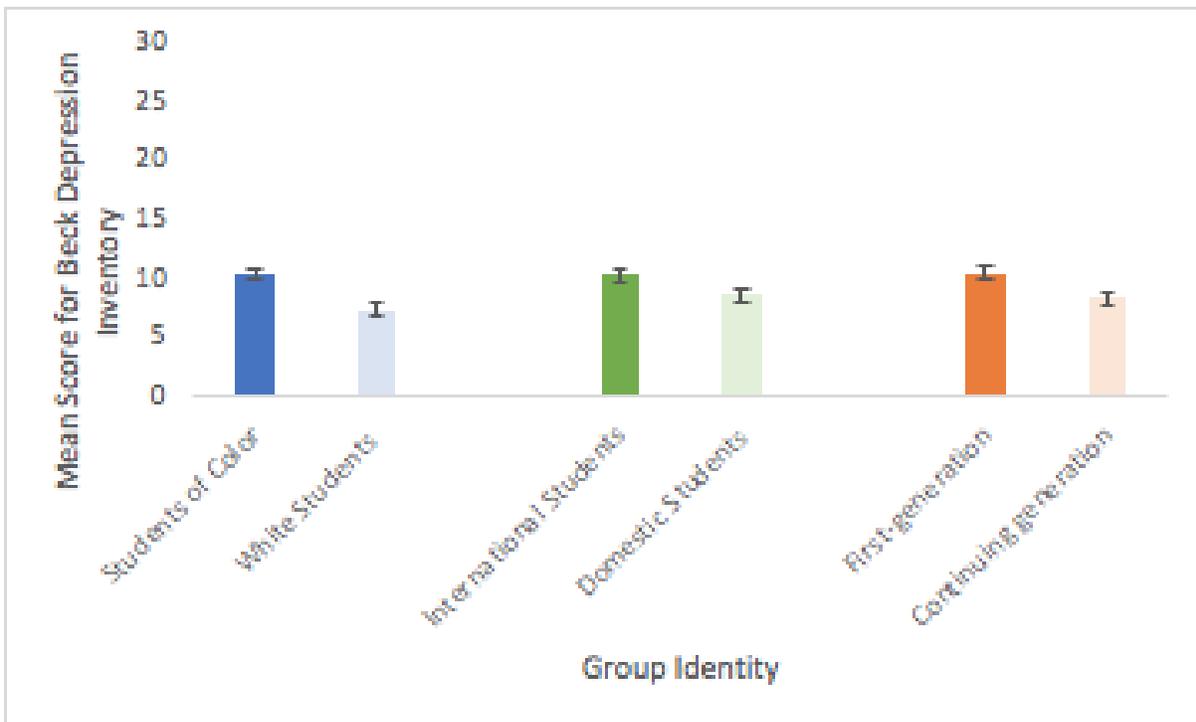
*Figure 2.* Mean score of Beck Depression Inventory as a function of identity group for Study 1.

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*Figure 3.* Mean score of Sense of Belonging Inventory Psychological Total as a function of identity group for Study 1.

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*Figure 4.* Mean Score of Beck Depression Inventory as a function of identity group for Study 2.

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Table 1

*Demographics for Study 1*

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Class Year	50%	50%						
	First-years	Seniors						
Gender	69%	29.6%	1.4%					
	Female	Male	Gender					
			fluid					
Race	70%	7% African	11%	7%	1% Native	1% Native	3%	
	White	American	Asian	Latinx	American/Alaskan	Hawaiian/Pacific	Other	
					Native	Islander		
Generational	85%	15% First-						
Status	Continuing	generation						
Resident	85%	15%						
Status	Domestic	International						

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Table 2. Moderated linear regression models for group identity as a moderator of the association of campus climate measures and depressive symptoms for Study 1

Predictor Variable	<i>B</i>	SE <i>B</i>	95% CI	$\beta$
<b>Social Belonging Scale</b>				
<i>First-generation</i>				
Peer Support	-.42	.90	.21, 2.60	-.043
Faculty Support	-.18	.81	-1.77, 1.41	-.02
Classroom Comfort	1.01	.51	-.00, 2.02	.14
Isolation	-1.82	.74	-3.28, -.36	-.22
Empathetic Faculty	2.02	.93	-.40, 3.36	.15
First-generation x peer support	5.21	2.26	1.71, 7.36	.22*
First-generation x faculty support	-.95	2.14	-5.15, 3.26	-.04
First-generation x classroom comfort	-1.48	1.60	-4.61, 1.66	-.09
First-generation x isolation	.16	2.33	-4.42, 4.75	.01
First-generation x empathetic faculty	5.15	2.23	.18, 8.42	.17*
<i>Students of Color</i>				
Peer Support	.50	1.0	-1.46, 2.46	.05
Faculty Support	-.12	.91	-1.92, 1.67	-.01
Classroom Comfort	.95	.59	-.22, 2.12	.13
Isolation	-1.17	.87	-2.87, .54	-.14
Empathetic Faculty	1.28	1.05	-.40, 3.36	.09
Students of color x peer support	-.59	1.85	-4.24, 3.05	-.04
Students of color x faculty support	-.44	1.64	-3.67, 2.79	-.02
Students of color x classroom comfort	-.24	1.08	-2.36, 1.88	-.02
Students of color x isolation	-1.43	1.52	-4.42, 1.56	-.10

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Students of color x empathetic faculty	3.83	1.83	-1.84, 5.16	.16*
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Campus Community Scale

<i>First-generation</i> Open environment	-1.95	1.07	-4.05, .14	-.15
Teaching and learning	-1.35	1.21	-3.73, 1.02	-.03
Residential experience	-.35	1.01	-2.35, 1.64	-.03
Intercultural programming	1.25	.72	-.18, 2.67	.13
History and tradition	-.85	.75	-2.32, .62	-.09
Stress and loneliness	2.85	.64	1.60, 4.11	.26
Socializing across backgrounds	-.66	.67	-1.97, .66	-.06
Friendship	-1.02	.83	-2.65, .61	-.08
First-generation x open environment	-1.48	2.58	-6.56, 3.59	-.06
First-generation x teaching and learning	-4.45	2.79	-9.94, 1.05	-.11
First-generation x residential experience	-.85	2.74	-6.24, 4.53	-.03
First-generation x intercultural programming	-1.00	1.62	-4.18, 2.19	-.04
First-generation x history and tradition	.78	2.14	-3.42, 4.99	.03
First-generation x stress and loneliness	-.27	2.50	-5.20, 4.66	-.01
First-generation x socializing across backgrounds	-.27	1.62	-3.46, 2.91	-.01

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First-generation x friendship	-.00	2.04	-3.46, 2.91	-.00
<i>Students of color</i> Open environment	-2.59	1.15	-4.85, -.33	-.20
Teaching and learning	-.30	1.27	-2.81, 2.20	-.02
Residential experience	-.45	1.10	-2.61, 1.71	-.04
Intercultural programming	1.19	.79	-.36, 2.73	.12
History and tradition	-.11	.84	-1.76, 1.54	-.01
Stress and loneliness	2.57	.71	1.19, 3.96	.23
Socializing across backgrounds	-1.01	.71	-2.40, .39	-.09
Friendship	-.57	.88	-2.31, 1.16	-.05
Students of color x open environment	1.09	1.94	-2.73, 4.91	.05
Students of color x teaching and learning	-3.10	2.32	-7.67, 1.47	-.10
Students of color x residential experience	-1.69	1.92	-5.47, 2.08	-.07
Students of color x intercultural programming	-.501	1.27	-3.00, 2.00	-.03
Students of color x history and tradition	-1.55	1.42	-4.34, 1.25	-.09
Students of color x stress and loneliness	.81	1.29	-1.74, 3.35	.04
Students of color x socializing across backgrounds	1.12	1.24	-1.32, 3.56	.06
Students of color x friendship	-1.78	1.55	-4.82, 1.26	-.08

\* $p < 0.05$

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Table 3. Moderated linear regression models for group identity as a moderator of the association of campus climate measures and sense of belonging for Study 1

Predictor Variable	<i>B</i>	SE <i>B</i>	95% CI	$\beta$
<b>Social Belonging Scale</b>				
<i>First-generation</i>				
Peer Support	.13	1.01	-1.85, 2.11	.01
Faculty Support	-.39	.90	-2.16, 1.38	-.03
Classroom Comfort	-1.35	.57	-2.48, -.23	-.15
Isolation	4.63	.83	3.01, 6.26	.44
Empathetic Faculty	-1.40	1.04	-3.43, .64	-.08
First-generation x peer support	-4.98	2.53	-9.95, -.01	-.17*
First-generation x faculty support	3.00	2.38	-1.70, 7.69	.10
First-generation x classroom comfort	3.21	1.78	-.29, 6.71	.17
First-generation x isolation	-.53	2.60	-5.65, 4.60	-.02
First-generation x empathetic faculty	-3.02	2.49	-7.92, 1.89	-.08
<i>Students of Color</i>				
Peer Support	-1.04	1.12	56.29, 58.54	-.09
Faculty Support	-.20	1.03	-2.23, 1.82	-.02
Classroom Comfort	-1.02	.67	-2.33, .30	-.11
Isolation	4.79	.98	2.87, 6.71	.46
Empathetic Faculty	-.32	1.18	-2.64, 2.01	-.02
Students of color x peer support	.67	2.08	-3.44, 4.77	.03
Students of color x faculty support	1.71	1.85	-1.93, 5.34	.07
Students of color x classroom comfort	.04	1.21	-2.35, 2.42	.00
Students of color x isolation	-1.61	1.71	-4.98, 1.76	-.09

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Students of color x empathetic faculty	-3.50	2.06	-7.56, .57	-.12
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Campus Community Scale

<i>First-generation</i> Open environment	3.21	1.12	1.00, 5.42	.20
Teaching and learning	3.13	1.27	.63, 5.63	.14
Residential experience	-.46	1.07	-2.56, 1.64	-.03
Intercultural programming	-2.00	.76	-3.50, -.51	-.16
History and tradition	2.91	.79	1.36, 4.46	.24
Stress and loneliness	-3.08	.67	-4.41, -1.75	-.22
Socializing across backgrounds	.29	.70	-1.10, 1.67	.02
Friendship	3.49	.87	1.78, 5.21	.22
First-generation x open environment	-.62	2.72	-5.97, 4.72	-.02
First-generation x teaching and learning	4.10	2.94	-1.69, 9.89	.08
First-generation x residential experience	-.67	2.88	-6.35, 5.00	-.02
First-generation x intercultural programming	1.22	1.70	-2.13, 4.58	.04
First-generation x history and tradition	.14	2.25	-4.29, 4.57	.01
First-generation x stress and loneliness	-1.37	2.64	-6.57, 3.82	-.04
First-generation x socializing across backgrounds	-1.42	1.71	-4.78, 1.93	-.05

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First-generation x friendship	-1.92	2.15	-6.15, 2.31	-.05
<i>Students of color</i> Open environment	-2.08	.75	-3.56, -.60	-.26
Teaching and learning	-2.86	.83	-4.50, -1.23	-.25
Residential experience	1.16	.72	-.25, 2.56	.14
Intercultural programming	.52	.51	-.49, 1.53	.08
History and tradition	-1.91	.55	-2.99, -.83	-.31
Stress and loneliness	-.11	.46	-1.02, .79	-.02
Socializing across backgrounds	-.22	.46	-1.13, .70	-.03
Friendship	-.43	.58	-1.57, .71	-.05
Students of color x open environment	2.53	1.27	.03, 5.02	.19
Students of color x teaching and learning	1.83	1.52	-1.16, 4.81	.10
Students of color x residential experience	-1.31	1.25	-3.78, 1.15	-.09
Students of color x intercultural programming	-.43	.83	-2.06, 1.20	-.04
Students of color x history and tradition	1.30	.93	-.52, 3.13	.11
Students of color x stress and loneliness	-1.00	.843	-2.66, .66	-.08
Students of color x socializing across backgrounds	-.48	.81	-2.07, 1.12	-.04
Students of color x friendship	-.73	1.01	-2.72, 1.26	-.05

\* $p < 0.05$

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Table 4

*Demographics for Study 2*

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Gender	67.7%	29.8%	2.5%						
	Female	Male	Gender fluid						
Race	50.4%	8.3%	32.2%	4.1%	0.1% Native American/Alaskan	0.8% Native Hawaiian/Pacific Islander	0.8%	3.3%	
	White	African American	Asian	Latinx			Middle Eastern	Multiracial	
Generational Status	72.7%	27.3%	First-Continuing generation						
Resident Status	81.8%	18.2%	Domestic International						

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Table 5. Multiple Linear regression models for Beck Depression Inventory for Study 2

Predictor Variable	<i>B</i>	SE <i>B</i>	95% CI	$\beta$
Social Belonging Scale				
Peer Support	.15	1.18	-.84, 3.85	.15
Faculty Support	3.42	1.22	1.01, 5.83	.26*
Classroom Comfort	.98	.74	-.49, 2.46	.11
Isolation	-.47	1.19	-2.83, 1.89	-.05
Empathetic Faculty	-2.87	1.53	-5.90, .15	-.18
Campus Community Scale				
Open environment	1.19	1.90	-2.57, 4.95	.08
Teaching and learning	-.787	2.00	-4.75, 3.18	-.04
Residential experience	-.17	1.79	-3.72, 3.38	-.01
Intercultural programming	.17	1.32	-2.45, 2.78	.01
History and tradition	-1.23	1.13	-3.46, 1.01	-.11
Stress and loneliness	3.09	1.12	.87, 5.31	.26*
Socializing across backgrounds	-.85	1.23	-1.10, 1.67	-.05
Friendship	2.27	1.22	-.15, 4.69	.15
Everyday Discrimination Scale				
Total	3.70	1.01	1.70, 5.69	.31

\* $p < 0.05$