A SOCIAL BELONGING INTERVENTION FOR MINORITY STUDENTS

By

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A THESIS PRESENTED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE

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To my grandparents

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Abstract of Thesis Presented to the Graduate School
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Social belonging is related to positive physical, psychological, and academic outcomes. However, feelings of social belongingness are not shared equally across all groups. In particular, minority groups often face social alienation and the consequences associated with not fitting in (Walton & Cohen, 2007). Their proclivity towards uncertainty about social belonging leaves some minority groups at risk for academic failure. This vulnerability becomes more pronounced with competing theories in the literature regarding minority groups' need to assimilate to the majority culture versus an institution's responsibility to be inclusive of all students (Museus & Maramba, 2011; Tinto, 1993). Despite the potentially beneficial nature of social belonging in improving outcomes for minority groups, relatively few studies have produced successful interventions that enhance such feelings (Cohen, 2004). The current study addressed this gap in the literature by replicating a previously supported social belonging intervention with a broader range of minority students ($N = 149$, Walton & Cohen, 2011). Results revealed the intervention did not significantly decrease uncertainty about social belonging for minority students nor did the intervention significantly predict increases in happiness and health. Implications and future directions are discussed in light of these findings.

CHAPTER 1
INTRODUCTION

According to the Belongingness Hypothesis, individuals have a natural, innate drive to

form and maintain relationships with each other (Baumeister & Leary, 1995). Cognitively,

individuals are preoccupied thinking about relations and assess real life situations in these terms.

Emotionally, humans regard the formation and deepening of social bonds as joyous occasions

(e.g., birth of a child, wedding). Social belonging or the "sense of relatedness that arises from

lasting, positive, and significant interpersonal relationships" can make adjustments easier and

increase achievement in academic areas (Walton & Cohen, 2011; Walton, Cohen, Cwir, &

Spencer, 2011, p. 2). Furthermore, social belonging may play a greater role in the life success of

some groups over others, namely, historically vulnerable groups such as racial/ethnic minorities.

Theories of Social Belonging

The importance of social belonging is both empirically and theoretically supported.

According to Tajfel and Turners' (1979) Social Identity Theory (SIT), individuals derive their

social identities from group membership and seek positive identities. Positive social identity is

obtained by satisfactory comparisons with other in-group members and feelings of group

superiority. In addition, those with less favorable identities within a group tend to remove

themselves from it or work toward a more positive social identity (Brown, 2000).

According to Maslow's (1943) Hierarchy of Needs, individuals are motivated by five

basic unsatisfied needs, namely, physiological, safety, belongingness and love, esteem, and self-

actualization needs. Some needs take precedence over others, and therefore, must be met in a

certain order (hierarchy). For example, belongingness must be satisfied before esteem needs

(e.g., achievement) can be met (Hagerty, 1998). In a study designed to determine which of the

five needs were most important for self-reported happiness in college students, Pettijohn and Pettijohn (1996) found that belongingness and love prevailed.

Finally, according to Ryan and Deci's (2000) Self-Determination Theory, there are three human needs that must be present for positive growth and personal well-being to occur: competence, autonomy, and relatedness. In regard to relatedness, when persons are in relationally supportive environments, they feel comfortable testing themselves. Similarly, relatedness encourages intrinsic motivation and internalization of school-related behaviors across the lifespan, which are important components of academic success (Ryan & Deci, 2000).

Benefits of Social Belonging

Social belonging permeates all domains of one's life and can have psychological and physical benefits. Feelings of social belongingness have been shown to be beneficial to mental health, encouraging clinically important changes in depression (Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Lakey & Cronin, 2008), anxiety, (Cohen et al., 2000), post-traumatic stress disorder symptoms (Brewin, Andrews, & Valentine, 2000), non-specific psychological distress (Barrera, 1986; Cohen & Wills, 1985; Procidano, 1992), and negative affect (Finch, Okun, Pool, & Ruehlman, 1999). Two forms of social belonging are social integration and social support, both of which have been linked to positive health outcomes. Social integration "pertains to the structure and quantity of social relationships, such as the size and density of networks and the frequency of interaction," whereas social support refers to "the function and quality of social relationships, such as perceived availability of help or support actually received" (Schwarzer & Knoll, 2007, p. 234). Berkman and Syme (1979) had reported a connection between social integration and lower rates of mortality, controlling for other factors such as relative health. Since then, researchers have expanded on this finding, revealing that social support lowers mortality rates in individuals with cardiovascular (Brummett et al., 2001) and infectious diseases

such as HIV (Lee & Rotheram-Borus, 2001). Additionally, social support affects less life threatening but more prevalent health problems such as upper respiratory infections (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997) and general functioning of the immune system (Uchino, 2006).

Social support has been linked to cognitive improvement across adulthood. The presence of social support can lead to less severe cognitive decline with aging (Cohen et al., 2000) and decreased rates of dementia (Fratiglioni et al., 2004). Social support can also result in improved executive functioning in middle-aged African Americans, as measured by performance on the Stroop Color and Word Test and the Wisconsin Card Sorting Test (WCST) (Sims et al., 2011). Walton and Cohen (2011) concluded that a social belonging intervention facilitated an increase in cumulative grade point average (GPA) among African American college students. Moreover, perceived social exclusion was shown to affect a decline in IQ scores, GRE scores, and performance on complex cognitive tasks (Baumeister, Twenge, & Nuss, 2002).

Social Belonging and Psychological Functioning

The need for social belonging is well grounded in theory and research; however, there is a less precise understanding of the nature of the relationship between social belonging and positive and negative outcomes. When trying to appreciate what mediates the relationship between social support and other variables, researchers turn to behavioral and psychological pathways as possible explanations (Uchino, 2006).

Behaviors such as eating right and exercising may be promoted by means of social support, either directly through friendly advice or indirectly through support, giving meaning to life for the individual (DiMatteo, 2004). In addition, the amount of support provided for a given problem can be a function of how active a person is in attempting to solve the problem themselves (Schwarzer & Weiner, 1991). Psychologically, social support impacts the cognitive

appraisal of a stressful situation that, in turn, can ease coping (Lazarus & Folkman, 1984). For example, perceived social support from family and friends predicts positive perceptions of the school environment, self-esteem, and cultural congruity among Asian Americans (Gloria & Ho, 2003). The dissonance existing between provided and perceived support may be attributed to the level of intimacy of the relationship as well as time-lagged recognition of support (Coriell & Cohen, 1995; Schwarzer & Knoll, 2007). Finally, social support may be reciprocally influenced by behavioral and psychological pathways. For instance, an individual who is feeling depressed may appraise a lack of social support, and consequently, be more likely to engage in negative interactions (Coyne,1976).

The example of self-efficacy demonstrates the ambiguous relationship that exists between social support and other variables. Social support has been suggested to enable self-efficacy in persons by reducing negative affect that is often an internal indicator for competence as well as safeguarding individuals against stressful situations (Brown & Harris, 1978; Schwarzer & Knoll, 2007). This model is referred to as the Stress Buffering Theory. However, according to the Support Cultivation Hypothesis, it may also be that self-efficacy increases social support in those who are driven by their self-efficacy to expand social networks (Brown & Harris, 1978; Schwarzer & Knoll, 2007). It is possible that these two theories are not necessarily mutually exclusive, but rather that social support and self-efficacy reciprocally influence each other.

The relationships between social belonging and some outcome variables (e.g., self-efficacy) remains ambiguous, however there is a clearer understanding in the literature regarding extensions of social belonging, such as the quality of social relationships, and how they vary across different gender and racial groups.

Social Belonging and Friendship

Minority groups are more susceptible to social alienation as well as the psychological and health consequences of that alienation than other non-minority groups (Walton & Cohen, 2007). Social belonging directly affects physical and mental health outcomes and carries important implications for positive life consequences for minority groups including persistence in school. In predominantly White educational settings, the presence of social support networks for minorities has been shown to increase level of comfort of these groups and to predict level of college adaptation amongst Asian Americans, African Americans, and Hispanics (Hausmann, Schofield, & Woods, 2006; Kimbrough, Molock, & Walton, 1996; Yosso et al., 2009; Zea, Jarama, & Bianchi, 1995). For example, Gloria and Ho (2003) found that for Asian American undergraduates, social support was the single biggest predictor for persistence in school.

Reciprocal relationships or shared agreement in regards to a friendship between two people has important implications for feelings of social belonging. Adolescents tend to be more motivated and involved in school and have higher achievement scores when they rate their friendships as supportive and reciprocal (Crosnoe, Cavanagh, & Elder, 2003). Interracial friendships tend to be less reciprocal than intra-racial friendships, leaving minority groups at a disadvantage (Way et al., 2005). Inter-racial friendships tend to be less reciprocal and are more difficult to maintain partly because individuals in these friendships have fewer shared activities (Vaquera & Kao, 2008). Those minority students with reciprocal friendships have feelings of school belonging and do better in school than those whose friendships are not reciprocated (Vaquera & Kao, 2008). Asian American adolescents have the highest rates of reciprocal friendships after White adolescents, then Hispanics, and finally African American adolescents have lowest rates of friendship reciprocity (Vaquera & Kao, 2008). Furthermore, Asian American adolescents tend to have shorter and fewer close friendships than African American

14

and Hispanic adolescents. This may be because African American and Hispanic parents are less likely to discourage time outside of school to be spent with friends than their Asian American parent counterparts (Way et al., 2005). Class differences may also play a role on social support outcomes. For example, those minorities with higher socioeconomic statuses tend to have greater numbers of reciprocal friendships (Vaquera & Kao, 2008).

Besides creating and maintaining friendships, the quality of friendships matters as well. Walton and Cohen suggest minority groups are more likely to experience uncertainty about social belonging compared to majority groups, because they "are more uncertain of the quality of their social bonds and thus more sensitive to issues of social belonging" (2007, p. 82). More generally, women are also more sensitive to the quality of a relationship, and as such, may rate benefits from an opposite sex relationship lower than men do (Coriell & Cohen, 1995). Women tend to take more responsibility for those with whom they are in a relationship, and hence, there is a greater cost to the relationship for women that is absent for men in their opposite sex friendships (Kessler, McLeod, & Wethington, 1985).

In review, there is empirical support that the benefits of friendship are not shared equally across gender and racial groups. This disparity highlights a larger problem for racial and ethnic minorities in regards to social belonging and academic adjustment.

Minority Group Differences in Social Belonging and Outcomes

Research suggests that disparities exist between majority and minority racial groups at most levels of outcome measurement (e.g., academic performance, finances, health). African American and Hispanic students, among other minorities in schools face prejudice and discrimination (Dovidio & Gaertner, 2000; Harber, 1998). Academically, these same students also receive lower grades than their majority counterparts (Steele, Spencer, & Aronson, 2002). Tinto's model of student integration (1993) suggests that meeting academic demands, among

other obstacles, makes it more difficult for minority students from disadvantaged backgrounds to adjust to college than the general student population. Educational disparities continue into graduate school. Zhou et al. (2004) reported ethnic minorities in one school psychology graduate program faced a lack of mentors with a shared ethnicity and felt inadequately trained in their undergraduate school for their current program. In light of this academic struggle, Hausmann, Schofield, and Woods (2006) found a possible buffer for minority groups. Their study revealed sense of belonging significantly predicted social and academic adjustment to college, quality of experience at college, and academic performance.

Microaggressions are one form of discrimination minorities face that affect their feelings of belonging in university settings (Clark et al., 2012; Locks, Hurtado, Bowman, & Oseguera 2008) and have been found to be related to psychological adjustment (Mercer, Zeigler-Hill, Wallace, & Hayes, 2011). Microaggressions are the "brief, everyday exchanges that send denigrating messages to people of color because they belong to a racial minority group…often unconsciously delivered in the form of subtle snubs or dismissive looks, gestures and tones" (Sue et al., 2007, p. 273). Asian American, Hispanic, and African American minority students have reported being exposed to similar microaggressive themes, such as inferior intellect, potential criminal, and inferior culture (Sue et al., 2009; Sue, Nadal et al., 2008; Yosso, Smith, Ceja, & Solorzano, 2009). In addition, Booker (2007) found minority students felt more comfortable in institutions where they had the respect of other students and were not faced with discrimination or intolerance regarding their minority status.

Hausmann, Schofield and Woods (2006) also found social class to be strongly correlated to sense of belonging in college for students. Walpole (2003) suggested that economic burdens may play a role in hindering social investment for minority students. She found that students

from lower SES backgrounds demonstrated less involvement in co-curricular activities than high SES students (e.g., more than half of low SES students spend less than one hour per week on co-curricular activities). Walpole suggested these students simply have less time than high SES students to be involved because they reported spending more time working for pay than high SES students (52% of low SES students spent 16 plus hours at work compared to 37% of high SES students). Having less time for extracurricular activities may put these students at a disadvantage. At-risk students who participate in extracurricular activities have been found to be less likely to drop out than students who do not (Mahoney & Cairns, 1997).

Taken together, academic and financial disparities between Whites and minority groups as well as racial climate at many university settings suggest minorities are at an inherent disadvantage in some life outcome variables. However, there is promising research that has found feelings of belonging may help improve health and academic success and therefore buffer some of these disparities (Walton & Cohen, 2011).

Racial and Ethnic Minority Groups

Asian Americans

Asian Americans have a reputation of educational success in the United States. Asian Americans have exhibited higher college entry, persistence, and completion rates than any other ethnic minority and even their White counterparts (Hsia & Peng, 1998; Peng & Wright, 1994). However, this level of educational prestige is not evenly distributed among all of the Asian American subgroups. Ong and Hee (1993) suggested the success mimics more of a bimodal distribution with Chinese, Japanese, and Korean individuals exhibiting a much higher level of educational attainment than Filipinos, Pacific Islanders, and Southeast Asians.

Despite the positive stereotype, researchers have suggested that the educational success of some Asian American groups has less to do with "Asian family values" and is more likely

17

influenced by the lack of opportunity in other areas of life, leaving academic achievement the only options for upward mobility (Chow, 2011). However, there are relatively few studies that have examined social and psychological variables that influence adaptation and consequently act as a possible buffer against academic failure (Gloria & Ho, 2003). The limited empirical analysis of Asian American adaptation may be explained by the powerful positive stereotype of academic and economic success and few mental health problems associated with Asian Americans (Suzuki, 1994). As mentioned earlier, this stereotype does a disservice for those that share the Asian American minority status, but not the expected success. For example, for Cambodian and Vietnamese students, the rate of obtaining a four-year baccalaureate degree falls below the national average (Le, 2011; U.S. Census Bureau, 2011). Also, this stereotype perpetuates negative images of other minorities by implying those who have not been as successful as Asian Americans (e.g., African Americans) are responsible for their own failings in society (Chow, 2011).

Asian American families place great importance on educational success especially in higher education as an avenue for upward mobility (Lee, 1996). Failure to live up to these expectations may cause Asian American students feelings of shame and familial guilt (Toupin, 1980) as well as loss of support from their family and community (Yeh & Huang, 1996). In light of this intense pressure to succeed and negative cultural consequences associated with perceived academic failure, research demonstrates social support is needed to encourage academic success in Asian Americans.

African Americans

For African Americans, being aware of the negative prejudice against them can impact their perceptions of their own race as well as sense of belonging. For example, Barlow et al. (2000), found that African American women who felt excluded from the national identity by

Whites judged other African Americans as coming from lower economic and social positions; and these judgments were found to be unrelated to the actual SES of individuals. African Americans are one minority group that has faced a negative intellectual stereotype in American culture. Awareness of this stereotype may become amplified for African Americans based on other cues in their environment, such as an underrepresentation of African American students in their schools (Cook et al., 2012). This is problematic for students who tie their academic success to feelings of belonging. Mendoza-Denton and colleagues (2002) found African American students doubted their belonging at historically White institutions and those who were sensitive to class-based discrimination reported significantly lower feelings of belonging than those who were less sensitive. Solorzano, Ceja, and Yosso (2009) reported African Americans surveyed at ethnic majority universities considered changing schools due to feelings of isolation and insecurity that stemmed from being underestimated in the classroom. Furthermore, Hausman et al. (2006) found peer support predicted sense of belonging for African Americans. Taken together, these findings suggest African Americans are sensitive to alienation based on race and may thrive under conditions where they feel accepted by their peers and faculty.

Hispanics

In the year 2000, Hispanics exceeded African Americans for the title of largest minority group in the United States (United States Census, 2000). Furthermore, between 2000 and 2010, growth in the Hispanic population accounted for more than half of the growth in the United States (United States Census, 2010). This shift in demographics was partly due to the large number of foreign born Hispanics immigrating into the U.S., coupled with high birth rates among this population (de los Santos & de los Santos, 2003). As this shift continues, understanding Hispanic students' sense of belonging becomes relevant for institutions who are trying to encourage academic persistence for this group. For example the number of Hispanics in

higher education has doubled over the last two decades (NSF, 2009). Maestas, Vaquera, and Zehr (2007) found academic factors such as participating in education-related support programs as well as perceived interest by faculty in student development increased student sense of belonging in a university with a large Hispanic population (35%). Other factors that increased feelings of belonging were living on campus, being involved in extracurricular activities (e.g., Greek life), and holding leadership positions in student organizations. Yosso et al. (2009) found Hispanic students faced with racial micro-aggressions felt isolated, rejected and had race-related stress. Furthermore, Hurtado and Carter (1997) found Hispanics had less of a sense of belonging when exposed a negative racial climate at their university.

For many Hispanics in the United States, racial identification may be more a product of feelings of belonging than biological markers. For example, Hispanics who identify as White are more likely to have a high school diploma, be employed, earn higher wages, be older and vote republican compared to those who identify as 'some other race' (Rothenberg, 2006). Based on these correlations, Rothenberg asserted that Hispanics view race as a product of changeable characteristics such as income or education, and being White therefore represents inclusion and a level of success usually associated with the majority culture.

In review, college campuses are not immune to the positive and negative racial stereotypes perpetuated in the larger society. In fact, such stereotypes may affect educational expectations of minority groups and their academic outcomes (Hurtado & Carter, 1997; Solorzano, Ceja, & Yosso, 2009). Furthermore, the changing demographics of minority populations in America and consequently, college campuses, make the known discrimination and social alienation of these groups a primary concern for institutions of higher learning. Understanding and identifying experiences shared across minority groups (e.g., stereotypes

regarding intelligence) may help such institutions plan for and buffer social alienation that those with a racial/ethnic minority status will likely face.

Social Belonging and Cultural Integration

Cultural suicide, which is reportedly related to social belonging, reveals gender differences. Museus and Maramba (2011) described cultural suicide as "the notion that students from cultures incongruent with those on their respective college campuses must detach from their traditional cultural heritages to succeed" (p. 250). In a study of Filipino Americans, Museus and Maramba (2011) found that women were more likely to experience pressure to commit cultural suicide, more likely to have adjustment difficulty, and were less likely than men to have feelings of belonging on campus. Museus and Maramba found the effects of cultural suicide on feelings of social belongingness were indirect, with adjustment difficulty mediating the relationship. It appears the cultural dissonance experienced by some Asian American groups creates serious obstacles in portraying their true identities and feeling accepted by the campus community.

Tinto's (1993) model of student integration has been at the forefront of research on social belonging in an educational setting. Tinto theorized that integration into academic and social structures largely influences academic persistence in students, especially the first year of college. This integration could be done formally, through following academic regulations and attending extra-curricular activities or informally through interaction with professors and peers and involves student's joining not only periphery minority groups. Tinto emphasized that connecting socially with minority groups was a good start for integrating into a campus, but ultimately, not enough. There needs to be a real connection to the majority culture for the student as well, in order to reap the benefits of integration (Tinto, 1987). Tinto's theory has been met with resistance from those who believe too much emphasis was placed on personal "cultural suicide,"

instead of institutional responsibility for integration of minority groups (Rendón et al., 2000; Tierney, 1999). In response to the inefficiencies described for Tinto's Integration Theory, some researchers have examined sense of belonging and pressures to adapt by institutions among minority students.

Previous research indicates Asian Americans, African Americans, and Hispanics experience pressures to conform to the dominant culture in college settings (Lewis, Chesler, & Forman, 2000) and ethnic student clubs that provide a cultural outlet play a large role in developing their sense of belonging and adjustment at predominantly White institutions (Museus, 2008). Johnson et al. (2007) measured sense of belonging as agreement with statements such as "My college is supportive of me" and "I feel I am a member of the campus community" (p.530). They found Asian Pacific Islanders had less of a sense of belonging than their White counterparts in their first year of college. Additionally, the amount of belonging was contingent on how smooth the academic and social transition experienced by the student was. Not surprisingly, second generation Asian Americans feel the most pressure to commit cultural suicide, and first generation students feel the least amount of social belonging (Museus & Maramba, 2011). Museus and Maramba found an indirect relationship between pressures to commit cultural suicide, connections to cultural heritage, and social belonging, with the first two factors mediating the relationship between ease of adjustment and sociable belonging (2011).

Museus and Maramba found Filipino Americans had an easier adjustment and sense of belonging when they maintained cultural connections on campus. Also, Yoon and Lee (2010) found a sense of social connection to both mainstream and ethnic communities promoted wellbeing among Korean immigrants. In a large-scale study of over 370 universities in the US, Chang (1999) found students had a high level of college satisfaction, and social self-concept

when they had socialized with diverse peers and had discussions surrounding race and ethnic issues outside of class. Maestas, Vaquera, and Zehr (2007) found engaging in positive behaviors related to diversity, socializing with different racial/ethnic groups, and being supportive of affirmative action goals all increased feelings of diversity at one institution where minority groups made up almost 50% of the student population. These findings suggest institutions have the capacity to encourage academic persistence and success amongst minority groups by shaping that environment (Museus & Maramba, 2011; Museus, 2008). Tierney (1999) suggested that institutions should adopt the idea of cultural integrity in which they develop programs to engage students' cultural backgrounds in helping them with social integration without compromising culture.

Social Belonging Interventions

According to Cohen (2004), empirical evidence for social support-based interventions on psychosocial and health outcomes is on the whole inconsistent and unconvincing. As Cohen explained, part of the problem may be that these social interventions tend to utilize strangers as a form of social support (e.g., in group therapy). The target populations of these interventions are usually individuals who have undergone an "acute event" (e.g., heart attack) or are suffering from a "chronic debilitating disease" (e.g., HIV) and the intervention (e.g., peer support group) is expected to improve function. Cohen (2004) points out that the early intervention experiments initially showed positive results (e.g., Spiegel, Bloom, & Kraemer, 1989). However, as sample sizes increased dramatically and the trials involved multiple sites and interventionists, the effects were no longer seen (e.g., Berkman et al., 2003).

Hausmann et al. (2006) conducted an intervention to enhance sense of belonging in which participants were asked to complete a series of surveys. Those in the experimental group received communication from their university administrators thanking them for their

participation and emphasizing that the participants and their answers were valued by the university. They also received small items such as card holders with the university's logo on it. Both of these tasks were designed to enhance sense of connection and belonging to the campus. There were two control groups, one that received gifts but without the university logo on them and another that did not receive gifts. Both of these control groups only had communication with the professor running the study, not university administrators. Although all groups had lower sense of belonging later as the academic year progressed, those in the intervention had a marginally significant smaller decline in social belonging as well as intention to persist on school. Although these findings were encouraging, the significance and effect size of the findings were small. Despite the overwhelming evidence of the benefits of social integration, experiment-based social interventions have been largely unable to replicate these positive effects.

Walton and Cohen (2011) addressed social alienation through a series of psychological interventions with promising findings. One such psychological intervention used was the saying-is-believing effect: " a message tailored to a particular audience [that] influences the communicator's subsequent memory and impression of the message topic" (Hausmann, Levine, & Higgins, 2008, p. 539). In this case, the topic was uncertainty regarding social belonging on campus. Walton and Cohen also removed the taboo of an intervention by disguising the study as an opportunity for participants to help future classmates adapt to the new school. Walton and Cohen targeted African American undergraduate students. The treatment group, comprised of both African American and White students, read a prompt summarizing a "study" that found feelings of social isolation are common across all groups of people and those feelings are short-lived. Then, in order to help participants internalize this message, participants were prompted to write how their personal experiences were similar to that study. Finally, the participants read

their essay to a camera with the impression that their speech would be used with future students in the form of an intervention to help with adjustment to the new school. This intervention was successful in increasing feelings of social belongingness and the positive outcomes associated with those feelings. Results revealed there were no significant differences between African American and White students in the treatment group racial gap in regards to number of doctor's visits, self-reported health, happiness, and greatly reduced in terms of GPA (closed the gap by 52%) three years later. African Americans in the control group did not improve in GPA and showed significantly less improvement in health and well-being compared to African Americans in the treatment group over time. Whites in the control group showed no difference compared to Whites in the treatment group in terms of outcome measures. A major purpose of the current study was to test this intervention on a broader range of minority students. Encouraging feelings of social belongingness through interventions has the potential to be a powerful tool for institutions in helping minority students adapt.

Individual and Group Differences in Disclosure

Although there is literature supporting the use of disclosure-based interventions, there may be certain groups for which such interventions (e.g., expressive writing) do not have robust effects. Lumley, Tojek and Macklem (2002) examined existing literature and found support for the hypothesis that disclosure may not be the best intervention for repressed individuals who do not express as much emotion during disclosure. Similarly, preliminary studies of individuals with alexithymia (lacking words for feelings) show that this group does not benefit from the intervention. As another example, Knowles, Campos, and Wearing (2011) randomly assigned White and Asian American undergraduate participants to two groups. Over four sessions, those in the treatment group wrote about traumatic events and those in the control group wrote about trivial events. Knowles et al. found Asian Americans did not experience insight over the four

25

sessions and did not show increased health benefits compared to their White counterparts. Knowles et al. (2011) argued that individuals from cultures that do not emphasize writing/verbalization may not benefit from an expressive writing intervention. Although this was a reasonable interpretation, there may be other explanations. For example, Asian Americans may subscribe to cultural values that emphasize interpersonal harmony and conflict avoidance, for this reason, the taboo of an intervention may have discouraged participants from sharing their adverse experiences during disclosure and benefiting from the therapeutic process (Hofstede, 1980). The current study plans to further examine disclosure as a component in an intervention, in the context of social belonging, by accounting for the covarying effects of such possible cultural variables.

CHAPTER 2
THE CURRENT STUDY

Due to the strong need for social support to ease adjustment and the relative vulnerable state racial minorities are in to receive it, this intervention study aimed to utilize culturally sensitive techniques to encourage feelings of social belongingness which in turn should predict positive outcomes associated with well-being. Walton and Cohen's (2011a) recent research on African American and White students served as an important foundation for the current investigation. To extend that work, we investigated if their intervention yielded positive outcomes for a more diverse group of racial/ethnic minorities. We extended their work in other ways as well, by examining the effects of disclosure-based writing and testing several relevant covariates of potential intervention effects. For example, research by Knowles et al. (2011) did not support the use of expressive writing as a productive intervention for Asian Americans, but their study failed to account for other variables, such as the cultural influences of interpersonal harmony, that could affect the study's outcomes. As a conceptual replication of Walton and Cohen's study (2011), the current study aimed to increase feelings of belonging among minority students using a disclosure based writing intervention in a culturally sensitive way.

Hypotheses

Figure 2-1 displays the model to be tested in the current study. The social belonging intervention is expected to have positive effects on reducing social belonging uncertainty, which in turn should yield positive student outcomes. That is, social belonging uncertainty is hypothesized as the mechanism through which the social integration intervention will affect outcomes. Additional complexities that will be tested include the moderating effects of minority status on the mediator model. The covariate effects of empirically relevant variables in the main model will also be tested (e.g., gender, age, GPA, interpersonal harmony/disintegration

27

avoidance), although the current study does not have specific directional expectations for these variables.

1. Previous research suggests racial/ethnic groups face similar experiences of social alienation and consequent negative life outcome variables (Dovidio & Gaertner, 2000; Sue et al., 2009; Vaquera & Kao, 2008; Way et al., 2005), therefore the current study does not expect minority race group differences in level of belonging or reported psychological and physical outcomes.

2. Uncertainty about social belonging will mediate the relationship between treatment and positive reported psychological, and physical outcomes (see Figure 2-1). More specifically, those in the treatment group will experience increased social belonging and consequently, increased positive outcomes (i.e., self-reported health and happiness), compared to those in the control group. Furthermore, the indirect effect derived from the mediator model is expected to be greater for minority students than for White students. That is, minority status is expected to moderate the indirect effect that the treatment has on positive outcomes. More specifically, racial minorities in the treatment group, compared with those in the control group, will experience higher levels of social belonging and consequently increased positive outcomes. This same effect is not expected to be seen for Whites in the treatment group nor minorities or Whites in the control group.

Method

Participants

Data were collected from undergraduates in a large Southeastern university who already completed between one and three semesters at the university. A total of 149 participants (121 women, 28 men) met inclusion criteria for the study (i.e., at least 18 years old, completed between one to three semesters at the university; see Figure 2-2). The racial/ethnic composition of the sample was 44.3% White, 16.1% Hispanic[1], 12.8% Asian American, and 10.1% African American students. Additionally the sample had 2.7% biracial or multiracial, 7.4% American Indian/Alaskan Native, .7% Native Hawaiian or other Pacific Islander, and 6.0% participants

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[1] Similar to NIH criteria, the current study identified White as the racial category on the demographic survey and Hispanic or not Hispanic as the ethnic category (Kelty, 2008).

who marked "other." Participants ranged in age from 18 to 23 (M = 18.82, SD = .83). A total of 46.3% of the participants had completed one semester at the university, 32.2% had completed two semesters, and 19.5% had completed three semesters (see Table 2-2).

Measures

Uncertainty About Social Belongingness

Uncertainty about social belonging in college was assessed with two items (Walton & Cohen, 2007); "(1) Sometimes I feel that I belong at the University of Florida and sometimes feel that I don't belong at my university (2) When something bad happens, I feel that maybe I don't belong at my university" (Walton & Cohen, 2011). The two items used a 7-point Likert scale (1=Strongly Disagree through 7=Strongly Agree). The average of these two items provides a final uncertainty about belonging score, with a higher score representing more uncertainty. Regarding validity, uncertainty about belonging was found to be negatively correlated with happiness such that greater uncertainty about belonging was related to less happiness ($r = -.42$) in the current study. Also in the current study, the two items were positively correlated with each other ($r = .64$). Walton and Cohen (2011) did not report validity for the scores of these two items.

The Subjective Happiness Scale

Participants' subjective happiness was measured with the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999). The Subjective Happiness Scale is a 4-item measure with a 7-point Likert scale. Subjective Happiness Scale scores have been shown to have high reliability, ∝=.89, and moderate to high convergent and discriminant validity with college populations (Mattei & Schaefer, 2004; Walton & Cohen, 2011). The 4 items are, "(1) 'In general, I consider myself:' (1=Not A Very Happy Person, 7=A Very Happy Person); (2) 'Compared with most of my peers, I consider myself:' (1=Less Happy, 7=More Happy); (3) 'Some people are generally

very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?' (1=Not At All, 7=A Great Deal); and (4) 'Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?' (1=Not At All, 7=A Great Deal) (reverse coded)." This measure is scored by taking the average of items, with a higher score representing more self-reported happiness.

Medical Outcomes Study Short-Form Health Survey

The final questionnaire is comprised of the five-item General Health component of the Medical Outcomes Study Short-Form Health Survey (McHorney et al., 1994). The Medical Outcome survey scores have been shown to have high internal consistency ($\propto$=.84) and moderate to high validity with college populations (Walton & Cohen, 2011; Ware, 2004). The items are measured on a 5-point Likert scale and include, "In general, would you say your health is?" (1=Excellent through 5=Poor); "I seem to get sick a little easier than other people"; "I am as healthy as anybody I know"; "I expect my health to get worse"; and "My health is excellent" (for items 2-5, 1=Definitely True through 5=Definitely False). This measure is scored by taking the average of items (after reverse coding several items), with a higher score representing better perceived health.

Harmony Scale

The Harmony Scale is comprised of 20 items with 2 subscales: Harmony (12 items) and Disintegration Avoidance (8 items) (Leung et al., 2010). The first subscale Harmony, measures relationship promotion. An example item from this subscale is, "Having an ability to interact with others harmoniously is vital for achieving major successes." The second subscale disintegration avoidance measures the evasion of conflict to protect the interpersonal relationship. An item from this subscale is, "You should not create conflict. When you have

conflict, you should try to smooth it over and make the other person happy." Each item is measured on a five point Likert format scale (1=Strongly Disagree through 5=Strongly Agree). Previous research studying Asian American populations found that scores for both subscales had good internal consistency and construct validity (Harmony, $\propto$=0.76; Disintegration Avoidance, $\propto$= 0.63) (Lim, 2009). In the current study, the scores on this measure had high reliability (Harmony, $\propto$=0.91; Disintegration Avoidance, $\propto$= 0.71). This measure is scored by taking the average of items, with a higher score representing more of an inclination towards interpersonal harmony and disintegration avoidance.

Procedure

The current study was conducted using a 2 (Treatment, Control) by 2 (Minority Race, Majority Race) posttest-only, control-group design. Samples of freshman and sophomore White, Asian American, African American, Hispanic, and other minority students at the university participated in the study for one semester. In exchange for their participation, those enrolled in introductory psychology courses received course credit. Participants completed the current study in two parts. In the first part, participants were alternatively assigned to the in-person intervention (34 White in control, 32 in treatment; 39 minority in control, 44 in treatment; see Table 2-2), which then lasted approximately an hour. The second part of the study involved participants completing the uncertainty about belongingness survey, Subjective Happiness Scale, and Medical Outcome Survey. These items were answered through a web-based survey tool (Qualtrics) three weeks after the intervention.

The first minority and first White participants were randomly assigned to either the treatment ("belonging") group or control group using a random number generator. Each participant following the first was alternatively assigned to either the treatment or control group.

Also, each participant experienced this phase of the study individually. Following the procedures reported by Walton and Cohen (2011, p. 1), this phase of the study was introduced as an investigation into "students' college experiences and attitudes" with the purpose, "(1) 'to better understand your personal experiences and attitudes here at [the University of Florida]' and (2) 'to help us provide incoming [University of Florida] students next year and in the years to come with more accurate expectations about what college is like.'" Those in the belonging group were instructed to read a report detailing the findings of a survey taken from juniors and seniors at their university. This report detailed the finding that most students surveyed had feelings of social alienation during their first year, but developed feelings of social belongingness over time. This report indicated that this was true of all students regardless of ethnicity and gender. Following Walton and Cohen, the report was fabricated for the purposes of encouraging feelings of social belongingness within the participants, although there is some evidence that feelings of social belongingness are more fluid and shifts in social belonging do occur (Baumeister & Leary, 1995; Berkman & Glass, 2000).

The second part of this intervention was aimed at having the participants internalize the message, through the saying-is-believing effect. In the second stage, participants were asked, "to write an essay about why you think people's experience in college changes in the way the Junior/Senior survey describes" and talk about their own experiences to support their paper. They were told that, "we plan to take excerpts of what people write here and show them to students coming to [university name] next year or in subsequent years, so they know what their experience is likely to be like" (Walton & Cohen, 2011, p.3).

Participants were then asked to read this essay aloud to a video camera, with the explanation that the recording would also be used to help a group of future freshman in their

transition to college. The purpose of the video recording was to further internalize the message in the participants as well as remove the potential taboo of an intervention; a possible obstacle in benefiting from the intervention for minority participants. The control participants received the same procedure, but read a prompt about a study that found academic difficulty decreased over time for students, to make it distinct from social belonging. Three weeks later, a post-intervention survey was distributed online to assess psychological responses to sense of belonging, health and happiness. Participants were also asked to authorize the release of their academic transcripts two years later, so that academic performance data could be measured as a long-term study outcome.

In review, participants completed measures three weeks after the intervention to evaluate sense of belonging, health, and happiness. These items were replicated from Walton and Cohen's study (2011). The experimental condition (with a treatment and control group) instructed participants to write an essay and speak in front of camera using personal experience to support the results of a survey (the topic of the survey was either social belonging or academic difficulty). This was done to encourage participants to internalize their message and transform the assigned problem from personal to universal and short-lived.

<p style="text-align:center">Results</p>

Attrition and Data Cleaning

Of the 212 participants who initially participated, 31 were excluded in the analyses due to not completing the follow-up measures. A one-way analysis of variance revealed that there were no significant minority status (White or minority) or condition (treatment or control) differences between participants who completed the follow-up surveys compared to those who did not. An additional eight participants were excluded due to not meeting study screening requirements (e.g., participants who completed more than three semesters at the university). Three participants

had one missing item on the Medical Outcome Short Form Questionnaire. Mean substitution scoring was used for those participants to reach an average final score on the measure.

Of the 173 participants, 24 did not complete part two of the in-person intervention (i.e., the video recording). A one-way ANOVA and follow-up regression analyses revealed significant differences in uncertainty about belonging such that those who did not complete both parts had more uncertainty about social belonging than those participants who did complete both parts of the study (β= -.184, t =-2.30, p <.05). This effect was small (f2 = .04). Therefore these participants were removed from subsequent analyses. A total of 149 participants were included in the final analyses (see Table 2-1 and Figure 2-2).

Descriptive Analyses

The mean score on the Subject Happiness Scale for this sample (M=5.18, SD= 1.14) was comparable to previous samples with college undergraduates (e.g., Lyubomirsky & Lepper, 1999, report M = 5.07, SD= 1.14). Moreover, the mean score on the Medical Outcome Short-Form Health Survey for this sample was comparable to previous findings by McHorney et al. (M= 60.18, SD = 27.25; M= 67.02, SD= .74, respectively).

Tests of Assumptions

Chi square analyses revealed no significant differences between the control and treatment groups in terms of participants' gender, minority status, or semesters completed at their university $\chi 2$ (1, N= 149) = .30, p = .58, $\chi 2$ (1, N= 149) = .52, p= .47, $\chi 2$ (2, N=149) = 1.55, p = .46 respectively). Furthermore, independent samples t-tests revealed no significant differences between the control and treatment groups in terms of age of participants, t(144) = .75, p = .85.

The normal Q-Q plots and detrended normal Q-Q plots were acceptable in shape. Also, judging from the histogram, the shape of the happiness and health variables were roughly

normal. The distribution of variables met guidelines for acceptable levels of skewness and kurtosis (i.e., skewness less than 3, kurtosis less than 10; Chou & Bentler, 1995; Kline, 2005).

The uncertainty about social belonging, happiness, and health variables had a significant Kolmogorov-Smirnov test for normality ($p < .01$) and non-significant Levene's test for homogeneity of variances ($p < .01$). The Kolmogorov-Smirnov test for normality is very sensitive to a large sample size, so this significant finding should be taken in the context of other tests of normality described above (i.e., $n \geq 50$; Field, 2009).

Correlation analyses revealed none of the predictor variables had a perfectly collinear relationship (all correlations were below .8; Field, 2009). The reliability of scores (Cronbach's coefficients alpha) was acceptable for all outcome measures and ranged from .75-.89 (see Table 2-3). Furthermore when examining by racial group, scores on the questionnaires measuring health and happiness were only weakly correlated with each other (i.e., r ranged from .02 to .20). However, further examination of the scatterplots for the racial groups making up the largest representation in the current study (e.g., White, African American, Hispanic, Asian American) did not indicate non-linear relationships (e.g., inverted U shape), nor was there restriction of range in item responses.

Further analysis revealed some outliers were detected for the happiness, health, and uncertainty about belonging variables. However, there was minimal difference between all variables' Mean and 5% Trimmed Mean (the mean after deleting the 5% outliers), and the differences were all well below one standard deviation. These cases were also assessed for random responding (e.g., 7's marked all the way through the scales, including reverse coded items, or patterns of 1-5-1-5 across all items), which was not found. Due to the minimal

difference the outliers had from the mean and lack of evidence for random responding, they were all kept in the analyses.

Preliminary Analyses

Testing Group Differences

Three separate analyses of variance (ANOVAs) were conducted to determine condition group (i.e., 1 = treatment, 0 = control) and racial/ethnic group differences in uncertainty about social belonging as well as condition differences on the outcome variables (i.e., happiness, reported health). No significant differences were found between the treatment and control groups and these variables ($p > .05$). For all subsequent analyses, race was recoded into a dummy variable (1= minority, 0= White). Also hierarchical regression analyses were conducted to examine if there were condition by minority effects on uncertainty about social belonging and the outcome variables. There were no significant relationships between the condition by minority status variable and the outcome or uncertainty about belonging variables ($p > .05$). Bivariate correlation analyses on GPA revealed it to be a significant covariate in the model ($p < .05$). Grade point average had a significant negative correlation with uncertainty about social belonging for White participants in the treatment group (see Table 2-4 and Table 2-5).[2]

Testing the Moderated Mediation Model

The next step in the analyses was to test if the relationship between treatment and positive outcomes was mediated by uncertainty about social belonging and if minority status moderated this indirect relationship. To test moderated mediation, the current study used the MODMED macro developed by Preacher, Rucker, and Hayes (2007). This macro allowed us to

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[2] Additional t-tests and bivariate correlational analyses were conducted to determine if gender, interpersonal harmony/disintegration avoidance, semesters completed, and age were appropriate covariates and results were not substantially different, so they were left out of subsequent analyses.

test if the hypothesized mediation effect was contingent on the level of the moderator (i.e., White or minority status). All variables were z-transformed before being entered into the model with the purpose to compare effect sizes and reduce multicollinearity, and GPA was controlled in all analyses. First, there are two multiple regression models. In the mediator model, the "a" path from condition to uncertainty about belonging is moderated by minority status (in the happiness and health models, this path was not statistically significant, $\beta = .35$, $p = .30$, and $\beta = .38$, $p = .26$, respectively). In the dependent variable model, the "b" path from uncertainty about belonging to happiness and health outcomes also was not significant in both sets of analyses, $\beta = .07$, $p = .61$, for happiness, and $\beta = .09$, $p = .57$, for health. Neither model was significant. Furthermore, the non-significant conditional indirect effects for the happiness and health model ($p = .55$, $p = .77$, respectively) suggested that the indirect effect from condition to positive outcomes was not moderated by minority status.

Exploratory Analyses

Similar to the results reported by Walton and Cohen (2011), African American participants in the treatment compared to the control had higher levels of uncertainty about belonging (M= 4.06, SD = 1.43, and M=3.27, SD = 1.52, respectively), health (M = 58.13, SD = 33.59 and M = 55.00, SD = 23.87, respectively), and happiness (M= 5.28, SD=1.41, and M= 5.02, SD= .88, respectively). However, none of these mean differences were significant, $t(15) = -1.15$, $p > .05$, $t(15) = -2.4$, $p > .05$, $t(15) = -.49$, $p > .05$, respectively. The effect size ranged from small to medium for these group differences ($\theta = .12$ for health, $\theta = .22$ for uncertainty about belonging, $\theta = .30$ for happiness).

Further exploring minority group differences, Asian American participants in the control and treatment group did not differ in terms of uncertainty about social belonging, happiness or health. Hispanic participants however, had significant differences between the treatment and

control conditions on uncertainty about belonging, $t(22) = .19$, $p<.05$, such that those in the treatment group had less uncertainty about belonging ($M = 4.13$, $SD = 2.09$) than those in the control group ($M=4.28$, $SD = 1.09$). This same difference did not emerge for health and happiness ($ps>.05$).

Discussion

The current study applied a previously supported intervention method (Walton & Cohen, 2011) with the goal of helping to ease adjustment into college for minority students. Inconsistent with the stated hypotheses, uncertainty about belonging did not mediate the relationship between treatment and positive reported outcomes. In addition, *minority status* was not found to be a significant moderator for the relationship of treatment and outcome variables.

Consistent with previous findings, exploratory analyses revealed, African American participants in the treatment group were higher in uncertainty about belonging, happiness, and health than African American participants in the control group, however this difference was not significant at the small sample size. African American participants only made up 10.5% of the sample, therefore it is possible the intervention designed by Walton and Cohen was successful for African American students, but the sample size in the current study was simply too small to detect the moderated mediation effect. Moreover, similar to Walton and Cohen's (2011) findings, White students were not high in uncertainty about belonging and thus did not benefit from the treatment condition (i.e., there were no differences between White students in the control and treatment group on uncertainty about belonging or positive outcomes).

The benefits of the feeling of social belongingness, especially for racial minority populations, are well documented; however, there is a less precise understanding of the ways to promote these feelings with the same minority groups. Similar to Cohen's (2004) observation, the current study was unable to replicate the promising findings in Walton and Cohen's (2011)

work on social belonging. Due to over or underestimation of the true effect, failed replications are expected statistically some of the time (Simon, 2012). However, several limitations of the present investigation might have contributed to the insignificant effect.

Limitations and Possible Explanations for Findings

One of the limitations was the use of a self-selected sample. Most of the participants were recruited from psychology classes. Perhaps this group had unique characteristics that could not be generalized to the larger student population at their university. Though many empirically derived variables were tested to see if they were covariates in the model (e.g., gender, interpersonal harmony), it is possible additional extraneous variables exist and had a confounding effect. In addition, the use of self-report questionnaires might have produced response biases due to social desirability or cultural values of the participants. For example, many participants were recruited from the same course, it may be reasonable to suspect that through talking to peers, some participants became aware of the experimental design of the study and therefore responded differently to follow-up measures. Additional research is needed to test the size of the intervention effect on health outcomes using non self-report measures (e.g., number of doctors' visits in the past month). About 68% of the subjects completed the follow-up measures in less than 20 minutes whereas they were projected to take 45-60 minutes. Despite acceptable levels of reliability and the absence of unusual response patterns mentioned earlier, reduced response time might suggest the participants did not fill out the measure in an honest and valid way (i.e., responses may not be accurate reflections of their actual health, happiness, and uncertainty about belonging).

The timing of follow-up measures may also explain the insignificant effect. Measures were completed three weeks following the in-person intervention, which may have been too soon to notice an effect. Walton and Cohen (2007) suggested a longer term effect may be seen in a

social belonging intervention because the intervention could disrupt the cycle of negative outcome variables (lower happiness, health, GPA) feeding a participant's uncertainty about belonging which in turn further lowers the outcome variables in question. This cycle of negative outcomes and more uncertainty about belonging may not sufficiently change in a three-week period. Moreover, the outcome variables measured in the current study (i.e., happiness, health) were not examined by Walton and Cohen (2011) until 3 years after the in-person intervention (from which they had found significant effects). The current study received permission from participants to record participant GPA in a two-year follow-up where the effects of the intervention on social belonging (as moderated by *minority status*) will be tested again on this new variable.

The current study did not have a true control condition to compare to the treatment condition. To review, the control condition was an intervention with the same procedure as the treatment condition, but instead of reading a prompt about uncertainty about belonging decreasing over time, participants read a prompt about academic difficulty decreasing over time. Given the close relationship between belonging and academic achievement (Baumeister, Twenge, & Nuss, 2002; Crosnoe, Cavanagh, & Elder, 2003), it is possible the control intervention had a similar effect on minority participants as the treatment intervention, and therefore the insignificant results were not an accurate depiction of the efficacy of the treatment intervention.

Another possibility is that the university setting where the current study was conducted might have institutional policies or programs in place to encourage feelings of belongingness for minority students. Consequently, there was simply less uncertainty about belonging, and hence, a smaller effect that we failed to detect at our sample size than at the institution in which Walton

and Cohen's (2011) research took place. For example, there are over 100 student cultural organizations on campus, and previous studies have identified that maintaining cultural connections via student clubs is one way minority students experience increased belonging (Museus, 2008; Museus & Maramba, 2011).

One requirement of the study was that the students needed to have completed between one to three semesters at their university. The rationale behind this decision was that after one semester, they were likely to begin to develop a sense of their fit on campus, and thus, those who experienced a level of uncertainty regarding belonging might have benefited from the intervention. Following three semesters, the participants were not likely to believe the prompt in the intervention (i.e., that a study at their university found belonging increased over time) due to their substantial experience at their university already. It is possible that this rationale was flawed and those restrictions affected the results. For example, the students who completed one semester might not have had enough exposure to their university to have a sense of their belonging (in either direction) yet, in which case this group would not have been the appropriate target for the intervention.

Social integration is presented in this report as being a generally beneficial factor in any individual's life. This statement carries extensive empirical support (see: Cohen, 2004; Baumeister & Leary, 1995; Berkman & Syme, 1979). Nevertheless, it is important to note that social relationships can also constitute a point of stress and turmoil for a person, and such interpersonal conflict can have detrimental effects on one's health and psychological well-being (Cohen, 2004). For example, loss of a loved one can increase risk of mortality (reviewed by Stroebe et al., 2007) and conflict between friends can promote risk for cardiovascular problems (reviewed by Kiecolt-Glaser & Newton, 2001). Receiving support in general has been linked

with increase in distress what does this mean (Bolger et al., 2000; Dunbar, Ford, & Hunt, 1998). Previous research reviewed in this paper as well as the current data should be considered in the context of these contrary findings that might help explain the obtained insignificant results.

Strengths of the Current Study

One strength of the present study was its rigorous experimental design, which isolated the contribution of the intervention on social belonging while controlling for extraneous variables (i.e. GPA). Additionally, this intervention took collectivistic cultural norms into account and did not directly describe the investigation as an intervention to the participants. By being sensitive to the effects of interpersonal harmony, the study was likely to encourage Asian Americans and other individuals averse to disclosure to engage in the intervention.

Furthermore, this study confirmed earlier findings regarding the importance of social belonging on happiness (Walton & Cohen, 2011), as well as validating past data concerning racial minorities feeling more uncertainty about belonging than their racial majority counterparts (Museus & Maramba, 2011). This additional evidence puts further weight on previously suggested institutional policies in support of encouraging belonging and integration without minimizing the minority student's culture (Tierney, 1999).

Although minority groups face pressure from negative stereotypes with respect to their academic ability and racial discrimination that contributes to their sense of isolation in a university setting, research indicates they do not seek mental health resources as often as their white counterparts, and consequently, their struggles go unchecked (Barreto & Segal, 2005; Chen, Sullivan & Shibusawa, 2003; Mendoza-Denton et al., 2002; Hurtado & Carter, 1997; Solorzano, Ceja, & Yosso, 2009; Sue et al., 2007; Yosso et al., 2009). This may be due to the cultural emphasis on interpersonal harmony for Asian Americans and the lack of culturally

competent and unbiased therapists for Asian American, African American, and Hispanic populations (Atkinson, Morten, & Sue, 1998; Sue & Sue, 2003).

Implications for Future Research

Future studies should test the role additional moderating and mediating variables may play on belonging and other outcome variables (e.g. individual differences in personality, SES and attachment styles; Vaquera & Kao, 2008). Future social belonging interventionists should also consider Minority Stress Theory when building the framework of their study. This theory essentially states that being from a socially stigmatized group contributes additional stress to one's life and in turn affects mental health and wellbeing (Meyer, 2003). Accordingly, future interventionists should consider the effects of the social belonging condition on buffering proximal (e.g., internalized negative feelings about one's minority identity) and distal (e.g., experiences of prejudice and discrimination) stressors, as identified by this theory).

Previous studies have already documented that the nature of social connections (e.g., interracial friendships, reciprocal friendships; Vaquera & Kao, 2008; Way et al., 2005) affect social belonging. Therefore, it may be fruitful to design an intervention that targets the nature of relationships (e.g., encouraging reciprocal friendships either artificially in the lab or in another setting that mimics real world circumstances such as an online chat room) for minority students. Future research may benefit from exploring uncertainty about social belonging at an institutional level by making specific comparisons across institutions to determine if the presence of certain programs (e.g., minority inclusion campaigns, organizations dedicated to minority adjustment to campus) play a direct role in encouraging social belonging or if the absence of such programs contribute significantly to a student's feelings of isolation. Finally, it may be worthwhile to explore if the nature of the program predicts the level of belonging (e.g., student-run cultural clubs versus administration-based events).

In conclusion, the current study did not find a previously successful intervention (Walton & Cohen, 2011) to significantly decrease uncertainty about social belonging for minority students nor did the intervention significantly predict increases in happiness and health. Several limitations of the study may explain the lack of an effect. However, the absence of significant findings also underscores a larger problem in the prevailing literature in regard to the dearth of successful and replicated social belonging interventions (Cohen, 2004).

Table 2-1. Gender and Racial/Ethnic Composition of the Sample

Variable	Frequency
Sample	149
Female	121(81.2%)
Race	
White (Non-Hispanic)	66(44.3%)
Hispanic	24(16.1%)
Asian American	19(12.8%)
African American	15(10.1%)
American Indian/Alaskan Native	11(7.4%)
Other	9(6.0%)
Biracial/Multiracial	4(2.7%)
Native Hawaiian/Pacific Islander	1(.7%)

Table 2-2 . Comparison of Sample Characteristics for Treatment and Control Groups

	Treatment	Control	p value[‡]
N	76	73	-
Female sex, %	78.9	83.6	.52
White race, %	42.1	46.6	.58
Semesters completed, M (SD)	1.72(.75)	1.73(.81)	.46
Age, M (SD), y	18.77(.75)	18.87(.86)	.45

[‡] p-value of omnibus analysis of variance (for continuous measures) or a Chi Square Test (for categorical measures).

Table 2-3. Means, standard deviations, and reliability of the variables in the analyses.

Variable	*M*	5% Trimmed Mean	SD	Cronbach's Coefficient α for White participants	Cronbach's Coefficient α for minority participants
Uncertainty about Social Belonging	3.87	3.86	1.81	.81	.75
Happiness	5.18	5.21	1.14	.87	.81
Medical Outcome Survey-SF	60.18	60.85	27.25	.89	.89

Table 2-4. Correlations between mediator variable, covariate, and outcome variables in control group

Variables	1	2	3	4
1. GPA	--	.01	.25	-.01
2. Uncertainty about Social Belonging	-.30	--	-.19	-.15
3. Happiness	.04	-.48**	--	.12
4. Health	.20	-.01	.11	--

Note. The correlations between the covariate GPA, uncertainty about social belonging, and positive outcomes. White participants are below the line, minority participants are above the line.

p<.05. ** *p*<.01.

Table 2-5. Correlations between independent variables, covariates, and outcome variables in treatment group

Variables	1	2	3	4
1. GPA	--	-.23	.002	-.21
2. Uncertainty about Social Belonging	-.42*	--	-.51**	-.002
3. Happiness	.35	-.47**	--	.22
4. Health	-.23	-.32	.25	--

Note. The correlations between the covariate GPA, uncertainty about social belonging, and positive outcomes. White participants are below the line, minority participants are above the line.
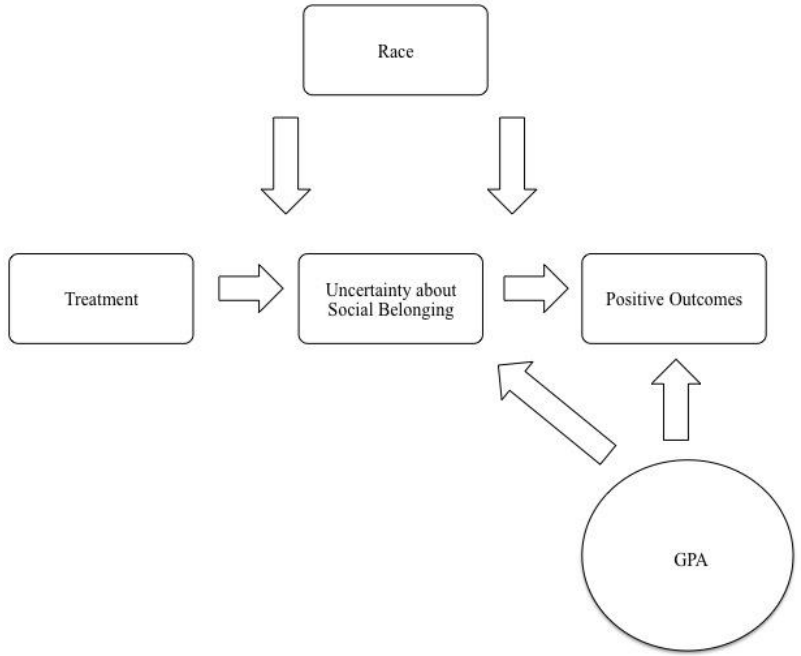
*p<.05. ** p<.01.

Figure 2-1. The moderating role of race in explaining the indirect effect of treatment, uncertainty about social belonging, and positive outcomes.
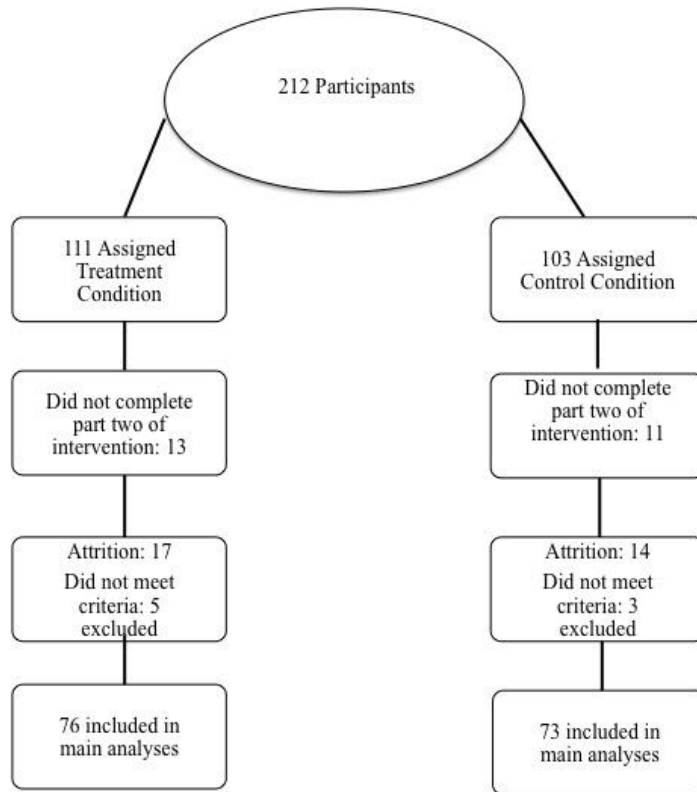
Figure 2-2. Flow chart of participant retainment.

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BIOGRAPHICAL SKETCH

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