

Polyculturalism among Undergraduates at Diverse Universities: Associations through Intergroup Anxiety with Academic and Alcohol Outcomes

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U.S. universities are increasingly racially/ethnically diverse. Simultaneously, undergraduate graduation rates and alcohol use remain important concerns. Understanding factors that contribute to success and well-being among students in these diverse college settings is critical to informing educational policy and programming. Polyculturalism is the belief that different racial/ethnic groups have always interacted, exchanged, and influenced each other, and it has been associated with more positive intergroup attitudes and greater comfort with diversity. Across four studies (three cross-sectional, one longitudinal) with racially/ethnically diverse undergraduates at two diverse institutions in the Northeastern United States, controlling for potentially confounding variables (year in college, age, race/ethnicity, nativity, high school GPA, current GPA, endorsement of multiculturalism and colorblindness, self-esteem, ethnic identification, general social anxiety, and mood across time points), greater endorsement of polyculturalism was associated with greater academic self-efficacy, greater sense of belonging, less use of alcohol to cope with intergroup anxiety, and fewer adverse alcohol-related consequences;

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further, lower intergroup anxiety mediated those associations. Results suggest studying polyculturalism and intergroup anxiety may contribute to our understanding of undergraduate outcomes at diverse institutions. Future work might explore how educational policy and programming can incorporate polyculturalism to promote engagement and well-being of undergraduates at these diverse institutions.

As racial and ethnic diversity at colleges and universities across the United States increases, it is critical to understand intergroup dynamics and to identify factors that both challenge and support the success and well-being of undergraduates of all backgrounds (Gurin, Dey, Hurtado, & Gurin, 2002; Hurtado, 2005; Sidanius, Levin, Van Laar, & Sears, 2010). The United States is increasingly falling behind other countries in college graduation rates, raising important issues around undergraduate retention (OECD, 2013). And, despite advances in research and intervention, college drinking and its many negative consequences remain prevalent and persistent problems in the United States, with for example over 1,800 undergraduates aged 18–24 dying annually from injuries resulting from alcohol (Hingson & White, 2012; Hingson, Zha, & Weitzman, 2009).

Many undergraduates at diverse universities may experience intergroup anxiety, which is found to negatively affect cognitive functioning, academics, and well-being (Cole & Yip, 2008; Mendes, Major, McCoy, & Blascovich, 2008; Richeson & Shelton, 2003). Undergraduates may also use alcohol to cope with intergroup anxiety, which may have adverse consequences, as is found for use of alcohol to cope with general social anxiety (Cludius, Bantin, Stevens, Gerlach, & Hermann, 2013; Lewis et al., 2008). Therefore, we suggest intergroup anxiety is a key factor to examine in understanding academic and alcohol outcomes among undergraduates at diverse institutions. Further, past work finds that endorsement of polyculturalism—the belief that different racial and ethnic groups have always interacted, exchanged ideas, and influenced each other’s cultures—is associated with greater comfort with diversity and less intergroup anxiety (Rosenthal & Levy, 2012; Rosenthal, Levy, Katser, & Bazile, 2015). Based on this past work, we suggest polyculturalism is an important factor to study as well, as it may promote comfort with intergroup interactions, and thereby improve undergraduates’ academic- and alcohol-related outcomes. In the current investigation, we bring together these issues of racial/ethnic diversity and intergroup dynamics, academic engagement, and alcohol use, which past work suggests are interrelated for undergraduates but have not previously been studied together. Specifically, we explore for the first time the role of polyculturalism in academic- and alcohol-related outcomes through the mechanism of intergroup anxiety among undergraduates at diverse institutions.

Polyculturalism

Polyculturalism was introduced by historians Kelley (1999) and Prashad (2001; 2003), who presented historical and contemporary examples of often underrecognized ways that people from different cultures are connected to each other through intersecting histories and shared cultural influences. For example, Prashad (2001) documented evidence of the multiple pan-Asian and pan-African cultural influences that contributed to the creation of Kung Fu, as well as the many other cultural influences worldwide that have contributed to the evolution of Kung Fu over time. Subsequently, we have examined polyculturalism from a psychological perspective as an individual difference belief. Endorsement of polyculturalism involves viewing people of all racial/ethnic groups as connected and understanding cultures as dynamic because different racial/ethnic groups have always interacted, exchanged, and influenced each other (Rosenthal & Levy, 2010, 2013). In generating examples of polyculturalism, undergraduates have identified multiple cultural influences on various types of architecture, dance, fashion, film, food, hairstyling, language, martial arts, music, piercing, sports, or tattooing from around the world.

Because of its focus on cross-cultural interactions, connections, and influences, polyculturalism is a unique belief that is distinct both conceptually and empirically from other relevant diversity-related beliefs, such as colorblindness, assimilation, and multiculturalism (e.g., Rosenthal & Levy, 2010, 2012; Rosenthal, Levy, & Moss, 2012; Rosenthal, Levy, & Militano, 2014). Colorblindness minimizes or ignores social group identities and cultural differences between groups (e.g., Rattan & Ambady, 2013; Ryan, Hunt, Weible, Peterson, & Casas, 2007). Assimilation minimizes group categories by suggesting that diverse groups should integrate themselves and conform to the dominant culture (e.g., Gieling, Thijs, & Verkuyten, 2014; Verkuyten, 2005). Polyculturalism is distinct from colorblindness and assimilation because it recognizes diverse group identities and particularly focuses on how diverse groups are connected to one another through cross-cultural contact and influence. Multiculturalism also recognizes diverse group identities; however, the focus is on acknowledging and celebrating the rich cultural backgrounds of groups (e.g., Hindriks, Verkuyten, & Coenders, 2014; Ryan et al., 2007). In doing so, multiculturalism tends to highlight cultural differences or distinctions between groups, while polyculturalism uniquely spotlights dynamic cross-cultural influences and interconnections (Rosenthal & Levy, 2010).

We previously hypothesized that polyculturalism could have positive consequences for intergroup relations, by helping people to perceive intergroup interactions as more common or acceptable, view different groups as more equal, and have more positive feelings toward and interactions with diverse others (Rosenthal & Levy, 2010, 2012). Past studies supported these hypotheses, finding that greater endorsement of polyculturalism is associated with more positive attitudes toward

members of other racial/ethnic groups and immigrants (Bernardo, Rosenthal, & Levy, 2013; Rosenthal & Levy, 2012; Rosenthal et al., 2015; Rosenthal, Ramírez, Bernardo, & Levy, under review), less sexism (Rosenthal et al., 2014), and less sexual prejudice (Bernardo, 2013; Rosenthal et al., 2012) in racially/ethnically diverse undergraduates and community adults, mostly in the United States, but also in Colombia and the Philippines. Specifically relevant to the current investigation, polyculturalism has been associated with greater comfort with diversity and cultural differences across four samples of racially/ethnically diverse undergraduates and community adults in the United States, while controlling for race/ethnicity and endorsement of assimilation, colorblindness, multiculturalism, right-wing authoritarianism, and social dominance orientation (Rosenthal & Levy, 2012). Among nearly 700 undergraduates, the association of polyculturalism with comfort with diversity was examined separately for Asian, Black, Latino, and White students, and the association was consistently positive across all groups (Rosenthal & Levy, 2012, Study 1). In an online study with adults across the United States, polyculturalism was associated with less intergroup anxiety toward Muslim Americans, while controlling for sociodemographic characteristics (Rosenthal et al., 2015, Study 1). In another longitudinal study with undergraduates at a diverse institution, endorsement of polyculturalism before the start of college predicted increases over time from first to second year in positive intergroup interactions and friendships (Rosenthal & Levy, invited revision under review).

This past work taken together suggests that endorsement of polyculturalism may help undergraduates to be more comfortable interacting with diverse others, and thereby to have more positive experiences in diverse institutions. Therefore, polyculturalism may promote social and academic comfort and confidence for undergraduates at diverse institutions, which past research suggests have implications for academic- and alcohol-related outcomes. Below we review work on intergroup anxiety, which we suggest may be a key mechanism connecting polyculturalism to undergraduates' academic- and alcohol-related outcomes.

The Importance of Intergroup Anxiety among Undergraduates

The undergraduate years make up a key developmental period during which students explore and change aspects of identities, beliefs, goals, and behaviors (London, Rosenthal, Levy, & Lobel, 2011; Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002; Rosenthal, London, Levy, Lobel, & Herrera-Alcazar, 2011). Transitioning to college is stressful as students face a new environment, and it is during the first year of college that students are most likely to drop out and to initiate or increase heavy drinking (Hingson & White, 2012; Timberlake et al., 2007). In addition, because many students live and attend elementary through high school in racially/ethnically homogenous areas, the college years are a time when

many students have more intergroup contact than ever before (Gurin et al., 2002; Hurtado, 2005).

This increased intergroup contact in college can have many beneficial consequences for members of both dominant (e.g., White American) and nondominant (e.g., Black or Latino American) racial/ethnic groups (Bowman, 2010; Chang, 1999; Locks, Hurtado, Bowman, & Oseguera, 2008; Pettigrew & Tropp, 2006). Yet, intergroup interactions can also feel threatening, stressful, and anxiety-provoking for some members of both dominant and nondominant racial/ethnic groups (e.g., Britt, Boniecki, Vescio, Biernat, & Brown, 1996; for reviews, see Sorensen, Nagda, Gurin, & Maxwell, 2009; Stephan, 2014). Intergroup stress and anxiety that people experience can motivate them to avoid future intergroup interactions when possible (e.g., Perry, Dovidio, Murphy, & van Ryn, 2015; for a review, see Stephan, 2014) and negatively affect cognitive functioning, academic concerns, and well-being (Cole & Yip, 2008; Mendes et al., 2008; Richeson & Shelton, 2003). Therefore, intergroup anxiety may play a critical role in various behaviors and outcomes among undergraduates at racially/ethnically diverse institutions.

Further, theory and research suggest that some people use alcohol to alleviate anxiety, which can lead to increased risk of adverse alcohol-related consequences (Carrigan & Randall, 2003; Morris, Stewart, & Ham, 2005; Sher & Levenson, 1982). Among undergraduates specifically, greater drinking motivated by social anxiety has been associated with more hazardous alcohol use (e.g., not remembering what happened the night before because of drinking), and greater social anxiety has been associated with more adverse alcohol-related consequences (e.g., passing out or being late for work or school because of drinking), although with less overall amount of drinking (Cludius et al., 2013; Lewis et al., 2008). To our knowledge, no studies have investigated if intergroup anxiety specifically has the same connections to alcohol use as general anxiety does. We suggest that the disinhibiting effects of alcohol may be seen and used by some students as a means of coping with intergroup anxiety in diverse social settings. And, similar to past findings for general social anxiety, the use of alcohol to cope with intergroup anxiety specifically may be associated with more adverse alcohol-related consequences, although we expect its role to be distinct from the role of general social anxiety.

Taken together, there is substantial evidence that intergroup anxiety can be detrimental to undergraduates' social functioning, academic engagement, and success at diverse institutions. Past research also suggests that there may be connections of intergroup anxiety to drinking and its adverse consequences that have yet to be tested. Therefore, it is important to identify factors that prevent or alleviate intergroup anxiety among undergraduates, particularly those attending racially/ethnically diverse institutions. There is also evidence that alcohol use can negatively affect undergraduates' academic engagement and performance (Powell, Williams, & Wechsler, 2004; Singleton & Wolfson, 2009). Indeed, some of

the adverse alcohol-related consequences that have been found to be related to social anxiety among undergraduates are academic consequences (e.g., Lewis et al., 2008), such as being late for school, missing classes, being expelled from school, or receiving a lower grade on an exam or paper because of drinking. This further highlights the utility of studying intergroup anxiety, academic engagement, and drinking among undergraduates together. Understanding factors that reduce intergroup anxiety may be critical for understanding how we can improve academic and alcohol-related outcomes among undergraduates at diverse universities, and polyculturalism may be one such factor. Given the evidence reviewed earlier, we suggest that polyculturalism may have positive consequences for academic- and alcohol-related outcomes through lower intergroup anxiety among undergraduates at racially/ethnically diverse universities, although these connections have yet to be explored.

Academic and Alcohol Outcomes

We included academic self-efficacy and sense of belonging as academic outcome variables in this investigation because they have been identified as key to academic engagement, persistence, and performance, in addition to well-being and stress (e.g., Chemers, Hu, & Garcia, 2001; Hoffman, Richmond, Morrow, & Salomone, 2002; Multon, Brown, & Lent, 1991). For example, a longitudinal study found that academic self-efficacy toward the beginning of the school year strongly predicted academic performance by the end of the school year among a sample of first year undergraduates (Chemers et al., 2001). We included use of alcohol to cope with intergroup anxiety and adverse alcohol-related consequences as alcohol outcome variables in this investigation for several reasons. Negative outcomes resulting from college drinking, including for academic outcomes, are prevalent and extremely important, making it critical to understand what drives these adverse outcomes and what can be done to prevent them (see Hingson & White, 2012). Further, as reviewed above, past work finds that some undergraduates use alcohol to cope with anxiety, and social anxiety is associated with more adverse alcohol-related consequences, but not with more overall drinking for undergraduates (Cludius et al., 2013; Lewis et al., 2008). Thus, although it has never been previously tested, we expected that some undergraduates might also use alcohol to cope with intergroup anxiety specifically, and that might in turn similarly be related to more adverse consequences of drinking.

Past work has already identified some important factors that contribute to academic self-efficacy, sense of belonging, and adverse alcohol-related consequences among undergraduates. For example, sources of self-efficacy across the lifespan include exposure to a family environment with parental support and learning opportunities (e.g., Meece, 1997), academic environments that provide a sense of autonomy and belonging (e.g., Hymel, Comfort, Schonert-Reichl, & McDougall,

1996), and the perception of mastery (e.g., Pajares, 1997; Schunk, 1995). Research has also found that undergraduates' sense of belonging is predicted by both individual factors (e.g., socioeconomic status and race) and institutional or contextual factors (e.g., institutional diversity, faculty/student interactions). For example, members of historically marginalized groups (e.g., Black and Latino students) consistently report lower sense of belonging compared to their White counterparts (e.g., Johnson et al., 2007; Strayhorn, 2008), and campus climate (e.g., the quality of student and faculty interactions) and social support from close others have been found to predict sense of belonging (e.g., Hoffman et al., 2002; Rosenthal, London, Levy, & Lobel, 2011). In addition to social anxiety (Cludius et al., 2013; Lewis et al., 2008), factors such as perceived drinking norms, as well as conformity and coping drinking motives, have been found to predict risk of adverse alcohol-related consequences among undergraduates (e.g., Lewis et al., 2008; Lewis & Neighbors, 2004).

However, even when studies include well-known predictors of these outcomes, the majority of variance in them often goes unaccounted for (e.g., Lewis & Neighbors, 2004; Rosenthal et al., 2011). Academic self-efficacy and sense of belonging are also most often studied as predictors of other academic outcomes, with much less work examining what predicts them. Further, despite many advances in research and intervention, undergraduate academic and alcohol-related outcomes remain problems challenging universities and colleges across the United States (Hingson & White, 2012; Hingson et al., 2009; OECD, 2013). Young adult alcohol use is considered a major national public health concern (USDHHS, 2015), with adverse alcohol-related consequences occurring in academic, interpersonal, social, and health domains (Hingson & White, 2014; White, Macinnes, Hingson, & Pan, 2013), including deaths from alcohol-related causes being the third leading preventable cause of death in the United States (Blackwell, Lucas, & Clarke, 2014). Therefore, it is important for research to continue to explore what factors contribute to and can be targeted to increase academic self-efficacy and sense of belonging, as well as to decrease adverse alcohol-related consequences. Given the evidence reviewed above, bringing together each of these distinct areas of research on polyculturalism, intergroup anxiety, academic outcomes, and drinking behaviors among undergraduates may potentially identify novel and innovative ways to intervene on these issues.

The Current Investigation

Across four studies (three cross-sectional and one longitudinal) with undergraduates at two institutions, we tested the hypotheses that endorsement of polyculturalism would be negatively associated with intergroup anxiety, positively associated with academic self-efficacy and sense of belonging, and negatively associated with use of alcohol to cope with intergroup anxiety and adverse alcohol-related

consequences. We also hypothesized that intergroup anxiety would mediate the associations of polyculturalism with the academic and alcohol variables. These studies include mostly first year students to address this critical year, and also include some students in later years to explore polyculturalism throughout the undergraduate years.

We wanted to ensure that any associations of polyculturalism with academic and alcohol outcomes were unique, so across the four studies, we controlled for potentially confounding variables, including year in college (Studies 1, 3, and 4), age (Study 2), race/ethnicity (all studies), nativity (all studies), High School GPA (Study 3), current GPA (Studies 1, 3, and 4), endorsement of multiculturalism and colorblindness (Study 1), self-esteem (Study 2), ethnic identification (Study 2), general social anxiety (Studies 3 and 4), and mood (Study 4). Year in college, age, high school GPA, current GPA, and self-esteem were included as controls given that these might influence academic self-efficacy and sense of belonging at one's university. Year in college and age were also included because of their relevance for drinking behaviors, as many undergraduates turn 21, the legal age for drinking in the United States, during their undergraduate years. Race/ethnicity, nativity, endorsement of multiculturalism and colorblindness, and ethnic identification were included as controls because of their relevance to beliefs and attitudes related to diversity and intergroup relations, including polyculturalism. General social anxiety was included as a control to ensure that polyculturalism's associations with intergroup anxiety and alcohol outcomes are not driven simply by general social anxiety. Finally, mood was included in Study 4, which longitudinally examined within-person associations, to ensure that fluctuations over time in variables are not simply due to changes in mood over time.

Study 1

Study 1 tested the hypotheses that among racially/ethnically diverse undergraduates at a diverse public university, namely Stony Brook University, greater endorsement of polyculturalism is associated with less intergroup anxiety and greater academic self-efficacy, and that intergroup anxiety mediates the association of polyculturalism with academic self-efficacy. In this study, we controlled for year in college, race/ethnicity (four dummy-coded variables for Asian, Black, Latino, and White, given that there were ample sample sizes for each of these groups in addition to the Multiracial/ethnic or Other group), nativity (born in the United States versus outside of the United States), and current GPA, as well as endorsement of multiculturalism and colorblindness. Year in college, but not age, was included as a control in this study (as is the case for Studies 3 and 4), in which there were a range of years in college represented in the sample but not much range in age. Consistent with past work (Rosenthal & Levy, 2012), we expected

polyculturalism to have unique associations while controlling for multiculturalism and colorblindness.

Participants

A total of 761 undergraduates at Stony Brook University participated in Study 1 who were either recruited through the Psychology department's Mass Testing sessions in two different semesters to receive Psychology course credit (completing the survey online), or on campus (completing the survey by paper-and-pencil). All surveys were the same except that in the second semester, participants were additionally asked to report their current GPA. Out of the 761 participants, 752 completed all measures of interest for the current investigation and were included in analyses (294 Asian, 66 Black, 66 Latino, 252 White, and 74 Multiracial/ethnic or Other; 563 born in the United States; 432 women, 320 men; 416 in first year of college, 188 second year, 87 third year, 49 fourth year, 12 fifth year or beyond). Mean age was 19.06 ($SD = 2.58$), and mean GPA for the subset of participants who were reported it was 3.01 ($SD = 0.58$).

Measures

Polyculturalism. Participants completed the 5-item measure of polyculturalism on a scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) (Rosenthal & Levy, 2012; e.g., "Different racial, ethnic, and cultural groups influence each other"; $\alpha = .88$).

Multiculturalism. Participants completed a 5-item measure of the form of multiculturalism that focuses on recognizing important differences between racial/ethnic groups on a scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) (Rosenthal & Levy, 2012; e.g., "There are differences between racial and ethnic groups, which are important to recognize"; $\alpha = .83$).

Colorblindness. Participants completed a 5-item measure of the combined form of colorblindness that focuses on recognizing the unique qualities of individuals and commonalities across groups on a scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) (Rosenthal & Levy, 2012; e.g., "At our core, all human beings are really all the same, so racial and ethnic categories do not matter"; $\alpha = .86$).

Intergroup anxiety. Participants completed an established 11-item measure of intergroup anxiety, which was slightly modified to assess anxiety about interacting with "people of different racial/ethnic backgrounds" on a scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) (Britt et al., 1996; e.g., "I would feel nervous if I

had to sit alone in a room with a person from a different racial/ethnic background and start a conversation"; $\alpha = .82$).

Academic self-efficacy. Participants completed an established 5-item measure of academic self-efficacy from the Patterns of Adaptive Learning Scales on a scale of 1 (*Not At All True*) to 5 (*Very True*) (Midgley et al., 2000; e.g., "I can do even the hardest work in my classes if I try"; $\alpha = .89$).

Results and Discussion

Year in college was found to be positively skewed; therefore, a square root transformation was conducted on this variable before conducting other analyses. Bivariate correlations, means, and *SDs* are in Table 1. We conducted two regression analyses, one with intergroup anxiety as the outcome, and one with academic self-efficacy as the outcome. There was no evidence of multicollinearity (all VIFs were < 4) or violation of the assumptions of linearity (by examining plots) or independence of residuals (Durban–Watson statistics were close to 2) in either model. There was evidence of heteroscedasticity (significant Breusch–Pagan test) in the intergroup anxiety model, but not the academic self-efficacy model; therefore, an additional analysis was conducted for the intergroup anxiety model using Hayes' HCREG macro (with the default HC3 method), which calculates robust *SEs* that are consistent with heteroscedasticity, and results did not differ in this analysis from the results in the standard regression analysis. We found, as predicted, that greater endorsement of polyculturalism was associated with less intergroup anxiety and greater academic self-efficacy, while controlling for multiculturalism, colorblindness, year in college, race/ethnicity, and nativity (see Table 2).

Next, we conducted a bootstrap analysis using Hayes' (2013) PROCESS macro to test if intergroup anxiety mediated the association of polyculturalism with academic self-efficacy, with all of the same control variables included as in the regression analyses. In this type of analysis, there is evidence of a significant indirect association of the independent variable with the outcome variable through the mediator if the confidence intervals do not include 0. As predicted, there was evidence of significant mediation (Indirect Effect Estimate = .04, *SE* = .01; 95% CI .03 to .07).

Last, we ran the same regression and mediation analyses additionally controlling for current GPA among the 255 students that reported it, and the results for polyculturalism remained significant. Findings support that greater endorsement of polyculturalism is associated with less intergroup anxiety and greater academic self-efficacy, and that that intergroup anxiety mediates the association of polyculturalism with academic self-efficacy, above and beyond multiculturalism, colorblindness, year in college, race/ethnicity, nativity, and current GPA.

Table 1. Bivariate Correlations, Means, and SDs for Study 1 (*N* = 752)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Current GPA (<i>n</i> = 255)	–											
2. Year in college (square root transformed)	-.02	–										
3. Asian	.09	-.10**	–									
4. Black	.02	.12**	-.25**	–								
5. Latino	.01	.10**	-.25**	-.10**	–							
6. White	-.10	-.07*	-.57**	-.22**	-.22**	–						
7. Nativity (born in the United States)	-.17**	.03	-.37**	.02	.04	.29**	–					
8. Polyculturalism	.12*	.04	-.15**	.10**	.03	.07	.08*	–				
9. Multiculturalism	.07	.07	.13**	.05	-.05	-.10**	-.04	.43**	–			
10. Colorblindness	-.12	-.10**	-.04	.02	-.02	.00	-.03	-.04	-.18**	–		
11. Intergroup anxiety	-.04	-.05	.22**	-.05	-.13**	-.09*	-.15**	-.27**	-.08*	.03	–	
12. Academic self-efficacy	.17**	.06	-.18**	.07	.02	.10*	.05	.32**	.19**	-.04	-.31**	–
Mean or %	3.01	1.74	39.1%	8.8%	8.8%	33.5%	74.9%	5.67	5.39	3.55	2.31	3.99
SD	0.58	1.00	–	–	–	–	–	0.88	0.91	1.37	0.68	0.74

Note. Bivariate correlations presented in Column 1 for Current GPA are only for the 255 participants who reported their GPA; all other correlations are for the full sample of 752 participants. For interpretability, the untransformed mean and SD are presented for the variable that was transformed, while bivariate correlations presented are for the transformed version of that variable. * *p* < .05; ** *p* < .01.

Table 2. Results of Regression Analyses for Study 1 ($N = 752$)

	Intergroup anxiety			Academic self-efficacy		
	β (standardized beta)	Squared part (semipartial) correlation	t	β (standardized beta)	Squared part (semipartial) correlation	t
Year in college (square root transformed)	-.01	.00	-0.33	.03	.00	0.84
Asian	.17	.01	2.69**	-.16	.01	-2.61**
Black	.01	.00	0.31	-.00	.00	-0.06
Latino	-.06	.00	-1.37	-.02	.00	-0.48
White	.04	.00	0.59	.01	.00	0.11
Nativity (born in the United States)	-.08	.00	-2.01*	-.03	.00	-0.78
Polyculturalism	-.24	.04	-6.03**	.26	.05	6.72**
Multiculturalism	.00	.00	0.06	.09	.01	2.26*
Colorblindness	.02	.00	0.58	-.02	.00	-0.59

Note. * $p < .05$; ** $p < .01$. Intergroup anxiety model $R^2 = .12$, $p < .001$; academic self-efficacy model $R^2 = .13$, $p < .001$.

Study 2

Study 2 tested whether the findings of Study 1 would replicate in a college with a predominantly Black student body, namely Medgar Evers College of the City University of New York. Although the student body is predominantly Black, there are other forms of cultural diversity, including students from the Caribbean and Africa, in addition to African American students, and somewhat smaller numbers of Latino and other students, making polyculturalism still a relevant construct. In a sample of incoming students, we aimed to test the hypothesis that greater endorsement of polyculturalism is associated with greater academic self-efficacy. In this study, we controlled for self-esteem, ethnic identification, age, race/ethnicity (one dummy-coded variable for Black, given that this group made up the majority of the sample), and nativity. Age, but not year in college, was included as a control in this study, in which all students were about to start their first year of college but there was a wider range in age than the other studies. Consistent with past work (Bernardo et al., 2013; Rosenthal et al., 2012, 2014, under review), we again expected polyculturalism would have unique associations while controlling for ethnic identification.

Participants

A total of 181 incoming undergraduates at Medgar Evers College in a summer academic and orientation program prior to their first year completed paper-and-pencil surveys in classrooms related to college expectations as part of a larger study with multiple investigators. Students were entered into a raffle drawing for their participation. Of the 181 participants, 153 completed all measures of interest for the current investigation and were included in analyses (1 Asian, 132 Black, 15 Latino, 1 White, and 4 Multiracial/ethnic or Other; 74 born in the United States; 112 women, 41 men). Mean age was 24.54 ($SD = 10.09$).

Measures

The same measure of polyculturalism ($\alpha = .88$) from Study 1 was included.

Self-esteem. Participants completed an established 10-item measure of self-esteem on a scale of 1 (*Strongly Disagree*) to 6 (*Strongly Agree*) (Rosenberg, 1965; e.g., “On the whole, I am satisfied with myself”; $\alpha = .84$).

Ethnic identification. Participants completed an established 12-item measure of ethnic identification on a scale of 1 (*Strongly Disagree*) to 4 (*Strongly Agree*) (Phinney, 1992; Roberts et al., 1999; e.g., “I feel a strong attachment to my own ethnic group”; $\alpha = .89$).

Table 3. Bivariate Correlations, Means, and *SDs* for Study 2 (*N* = 153)

	1	2	3	4	5	6	7
1. Age (square root transformed)	–						
2. Black	–.05	–					
3. Nativity (born in the United States)	–.38**	–.09	–				
4. Polyculturalism	.08	.30**	.13	–			
5. Ethnic identification	–.03	.04	–.01	.02	–		
6. Self esteem	.09	.08	–.17*	.21**	.09	–	
7. Academic self-efficacy (square root transformed)	–.10	.20*	–.14	.22**	.18*	.21*	–
Mean or %	24.64	86.3%	48.4%	4.89	2.99	4.58	5.37
<i>SD</i>	10.09	–	–	1.23	0.65	1.12	1.07

Note. For interpretability, untransformed means and *SDs* are presented for the variables that were transformed, while bivariate correlations presented are for the transformed versions of those variables. **p* < .05; ***p* < .01.

Academic self-efficacy. Participants also completed two items to measure their academic self-efficacy at Medgar Evers College, based on past work on academic self-efficacy (Chemers et al., 2001; Midgley et al., 2000). These items were rated on a scale of 1 (*Strongly Disagree*) to 6 (*Strongly Agree*), and they read, “I expect to do well academically at Medgar Evers” and “I am completely confident in my ability to succeed at Medgar Evers” ($\alpha = .79$).

Results and Discussion

Age was found to be positively skewed, and academic self-efficacy was found to be negatively skewed; therefore, square root transformations were conducted on age and a reflected version of academic self-efficacy, which was then reflected back, before conducting other analyses. Bivariate correlations, means, and *SDs* for study measures are in Table 3. We conducted a regression analysis with academic self-efficacy as the outcome. There was no evidence of multicollinearity or violation of the assumptions of linearity or independence of residuals. There was evidence of heteroscedasticity; therefore, an additional analysis was conducted using Hayes’ HCREG macro, which calculates robust *SEs* that are consistent with heteroscedasticity, and results did not differ in this analysis from the results in the standard regression analysis, except that age was no longer a significant predictor of academic self-efficacy. We found, as predicted, that greater endorsement of polyculturalism was associated with greater academic self-efficacy, controlling for self-esteem, ethnic identification, age, race/ethnicity, and nativity (see Table 4). Findings support that also at a college with a predominantly Black student body, greater endorsement of polyculturalism is associated with greater academic

Table 4. Results of Regression Analyses for Study 2 ($N = 153$)

	Academic self-efficacy (square root transformed)			
	β (standardized <i>beta</i>)	Squared part (semipartial) correlation	t	t Based on robust <i>SEs</i>
Age (square root transformed)	-.20	.03	-2.40*	-1.81
Black	.09	.01	1.07	0.78
Nativity (born in the United States)	-.21	.04	-2.49*	-2.50*
Polyculturalism	.21	.03	2.47*	2.25*
Ethnic identification	.15	.02	1.95	1.42
Self-esteem	.12	.01	1.55	1.54

Note. * $p < .05$; ** $p < .01$. $R^2 = .16, p < .001$.

self-efficacy, above and beyond self-esteem, ethnic identification, age, race/ethnicity, and whether they were born in the United States.

Study 3

Building on the findings from Studies 1 and 2, Study 3 assessed implications of polyculturalism and intergroup anxiety for college drinking. Study 3 tested the hypotheses that among racially/ethnically diverse undergraduates at a diverse university, greater endorsement of polyculturalism is associated with less intergroup anxiety, greater sense of belonging, greater academic self-efficacy, less use of alcohol to cope with intergroup anxiety, and fewer adverse alcohol-related consequences. In this study, we controlled for general social anxiety, year in college, race/ethnicity (two dummy-coded variables for Asian and White, given that these were the two largest groups that made up the majority of the sample), nativity, high school GPA, and current GPA. We also tested the hypotheses that intergroup anxiety mediates the associations of polyculturalism with sense of belonging and academic self-efficacy, and that there would be serial mediation for alcohol-related consequences, such that polyculturalism is associated with lower intergroup anxiety, which in turn is associated with less use of alcohol to cope with intergroup anxiety, which in turn is associated with fewer adverse alcohol-related consequences.

Participants

A total of 399 undergraduates at Stony Brook University participated in Study 3 through the Psychology department’s Mass Testing sessions (completing the survey online) in two different semesters (different semesters than Study 1) to receive Psychology course credit. Out of the 399 participants, 370 completed all measures of interest for the current investigation and were included in analyses

(161 Asian, 12 Black, 29 Latino, 148 White, and 20 Multiracial/ethnic or Other; 275 born in the United States; 221 women, 149 men; 222 in first year of college, 93 second year, 35 third year, 12 fourth year, 8 fifth year or beyond). Mean age was 18.85 ($SD = 1.42$), and mean high school GPA was 3.01 ($SD = 0.58$). Among those who reported current GPA ($n = 261$), mean GPA was 3.11 ($SD = 0.59$).

Measures

The same measures of polyculturalism ($\alpha = .90$) and intergroup anxiety ($\alpha = .83$) from Study 1 were included.

General social anxiety. Participants completed a shortened version (7-item) of an established measure of general social anxiety on a scale of 1 (*Not At All True*) to 5 (*Completely True*) (Leary, 1983; e.g., “I often feel nervous even in casual get-togethers”; $\alpha = .80$).

Sense of belonging. Participants completed a single item to measure their sense of belonging at Stony Brook University, based on past work with college students (Mendoza-Denton et al., 2002). The item was rated on a scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), and it read, “I fit in well at Stony Brook University.”

Academic self-efficacy. Participants also completed a single item to measure their academic self-efficacy at Stony Brook University, based on past work on academic self-efficacy (Chemers et al., 2001; Midgley et al., 2000). The item was rated on a scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), and it read, “I do well in my classes at Stony Brook University.”

Use of alcohol to cope with intergroup anxiety. Participants completed two items created for use in this study to measure the extent to which they drink alcohol in order to decrease their discomfort or anxiety when interacting with people from different racial/ethnic backgrounds on a scale of 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) (e.g., “I drink alcohol when I am in a social situation with people from racial/ethnic backgrounds other than my own because drinking helps me relax and feel comfortable”; $\alpha = .91$).

Adverse alcohol-related consequences. Participants completed a shortened version (4-item) of the Young Adult Alcohol Problem Screening Test, an established measure of adverse alcohol-related consequences (Hurlbut & Sher, 1992). Participants reported how many times in the past month they experienced the following consequences because of their drinking: not going to work or school;

being fired from a job or suspended or expelled from school; neglecting obligations, family, work, or school work for two or more days in a row; receiving a lower grade on an exam or paper than they should have. We computed how many of these consequences (0–4) they had experienced at least once in the past month.

Results and Discussion

Year in college, use of alcohol to cope with intergroup anxiety, and adverse alcohol-related consequences were found to be positively skewed, and polyculturalism was found to be negatively skewed; therefore, square root transformations were conducted on year in college, use of alcohol to cope with intergroup anxiety, adverse alcohol-related consequences, and a reflected version of polyculturalism, which was then reflected back, before conducting other analyses. Bivariate correlations, means, and *SDs* are in Table 5. We conducted five regression analyses with intergroup anxiety, sense of belonging, academic self-efficacy, use of alcohol to cope with intergroup anxiety, and adverse alcohol-related consequences in the past month as the outcome variables. There was no evidence of multicollinearity or violation of the assumptions of linearity or independence of residuals. There was evidence of heteroscedasticity for the sense of belonging, use of alcohol to cope with intergroup anxiety, and adverse alcohol-related consequences models; therefore, additional analyses were conducted for these three models using Hayes' HCREG macro, which calculates robust *SEs* that are consistent with heteroscedasticity, and results did not differ in these analyses from the results in the standard regression analyses. We found, as predicted, that greater endorsement of polyculturalism was associated with less intergroup anxiety, greater sense of belonging, greater academic self-efficacy, less use of alcohol to cope with intergroup anxiety, and fewer adverse alcohol-related consequences in the past month, controlling for general social anxiety, year in college, race/ethnicity, nativity, and high school GPA (see Tables 6 and 7).

Next, we conducted bootstrap analyses using Hayes' (2013) PROCESS macro to test if with all of the same control variables included as in the regression analyses, intergroup anxiety mediated the associations of polyculturalism with sense of belonging and academic self-efficacy, and whether there was evidence of serial mediation, such that greater endorsement of polyculturalism was associated with less intergroup anxiety, which in turn was associated with less use of alcohol to cope with intergroup anxiety, which in turn was associated with fewer adverse alcohol-related consequences. Serial mediation models involve two mediating variables that are tested as operating in sequence rather than simultaneously, therefore testing for an indirect association of the independent variable with the outcome variable through the first mediator, and then the second mediator in sequence. As is the case for other bootstrap mediation analyses, there is evidence of serial mediation if the confidence intervals do not include 0. There was no

Table 5. Bivariate Correlations, Means, and SDs for Study 3 (*N* = 370)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Year in college (square root transformed)	—												
2. Asian	.02	—											
3. White	.02	-.72**	—										
4. Nativity (born in the United States)	-.14	-.33**	.33**	—									
5. High school GPA	.02	-.03	.15**	.01	—								
6. Current GPA (<i>n</i> = 261)	-.20**	-.04	.09	.06	.27**	—							
7. Polyculturalism (square root transformed)	-.06	-.11*	.10*	.10*	.09	.03	—						
8. General social anxiety	-.04	.18**	-.08	-.04	.03	.16**	.12*	—					
9. Intergroup anxiety	.00	.23**	-.15**	-.15**	-.04	.03	-.21**	.29**	—				
10. Sense of belonging	-.13*	.04	-.07	.02	.03	.04	.10	-.33**	-.19**	—			
11. Academic self-efficacy	-.22**	-.21**	.15**	.14**	.05	.38**	.20**	-.10	-.20**	.41**	—		
12. Use of alcohol to cope with intergroup anxiety (square root transformed)	.15**	.14**	-.06	-.07	-.03	-.11	-.20**	.01	.29**	-.09	-.26**	—	
13. Adverse consequences of drinking (square root transformed)	.07	.05	-.02	.01	-.02	.01	-.17**	-.04	.04	-.04	-.12*	.21**	—
Mean or %	1.62	43.5%	40.0%	74.3%	3.57	3.11	5.64	2.47	2.30	4.92	4.92	1.85	0.08
SD	0.94	—	—	—	0.34	0.59	0.94	0.97	0.69	1.49	1.24	1.28	0.44

Note. Bivariate correlations presented in Column and Row 6 for current GPA are only for the 261 participants who reported their GPA; all other correlations are for the full sample of 370 participants. For interpretability, untransformed means and SDs are presented for the variables that were transformed, while bivariate correlations presented are for the transformed versions of those variables. * *p* < .05; ** *p* < .01.

Table 6. Results of Regression Analyses for Study 3 (N = 370)

	Intergroup anxiety			Sense of belonging			Academic self-efficacy		
	β (standardized beta)	Squared part correlation (semipartial)	t	β (standardized beta)	Squared part correlation (semipartial)	t	β (standardized beta)	Squared part correlation (semipartial)	t
Year in college (square root transformed)	-.01	.00	-0.23	-.13	.02	-2.76**	-.21	.04	-4.16**
Asian	.17	.01	2.34*	.10	.00	1.43	-.16	.01	-2.26*
White	.05	.00	0.71	-.05	.00	-0.74	-.02	.00	-0.20
Nativity (born in the United States)	-.08	.01	-1.50	.02	.00	0.47	.04	.00	0.81
High school GPA	-.03	.00	-0.56	.05	.00	0.92	.04	.00	0.72
Polyculturalism (square root transformed)	-.22	.05	-4.46**	.15	.02	2.97**	.17	.03	3.45**
General social anxiety	.29	.08	5.84**	-.38	.13	-7.62**	-.10	.01	-1.94

Note. Intergroup anxiety model $R^2 = .17, p < .001$; sense of belonging model $R^2 = .17, p < .001$; academic self-efficacy model $R^2 = .13, p < .001$. * $p < .05$; ** $p < .01$.

Table 7. Results of Regression Analyses for Study 3 Continued ($N = 370$)

	Use of alcohol to cope with intergroup anxiety (square root transformed)				Adverse consequences of drinking (square root transformed)			
	β (standardized beta)	Squared part (semipartial) correlation	t	t Based on robust SEs	β (standardized beta)	Squared part (semipartial) correlation	t	t Based on robust SEs
Year in college (square root transformed)	.13	.02	2.61*	2.53*	.06	.00	1.18	1.10
Asian	.17	.01	2.32*	2.56*	.08	.00	1.05	1.27
White	.09	.00	1.20	1.39	.04	.00	0.46	0.58
Nativity (born in the United States)	-.01	.00	-0.16	-0.16	.05	.00	0.81	0.85
High school GPA	-.02	.00	-0.45	-0.45	-.01	.00	-0.11	-0.12
Polyculturalism (square root transformed)	-.18	.03	-3.41**	-3.14**	-.16	.02	-3.03**	-2.21*
General social anxiety	.02	.00	0.31	0.30	-.03	.00	-0.48	-0.46

Note. Use of alcohol to cope with intergroup anxiety model $R^2 = .07$, $p < .001$; adverse consequences of drinking model $R^2 = .04$, $p = .064$. * $p < .05$; ** $p < .01$.

evidence of mediation for sense of belonging (Indirect Effect Estimate = .10, $SE = .06$; 95% CI $-.01$ to $.25$), but as predicted, there was evidence of mediation for academic self-efficacy (Indirect Effect Estimate = .10, $SE = .06$; 95% CI $.01$ to $.24$). Further, there was evidence of serial mediation with adverse alcohol-related consequences as the outcome (Indirect Effect Estimate = $-.01$, $SE = .01$; 95% CI $-.03$ to $-.002$).

Last, we ran the same regression and mediation analyses additionally controlling for current GPA among the 261 students that reported it, and the results for polyculturalism remained the same, except that in this case polyculturalism's direct association with fewer adverse alcohol-related consequences became marginal ($p = .052$ with robust SE s), and there was evidence that intergroup anxiety significantly mediated the association of polyculturalism with sense of belonging (Indirect Effect Estimate = .15, $SE = .08$; 95% CI $.02$ to $.35$). Findings support that greater endorsement of polyculturalism is associated with less intergroup anxiety, greater sense of belonging, greater academic self-efficacy, less use of alcohol to cope with intergroup anxiety, and fewer adverse alcohol-related consequences (although this association just missed significance with the smaller sample size and controlling for current GPA), above and beyond general social anxiety, year in college, race/ethnicity, nativity, high school GPA, and current GPA. Further, findings support that intergroup anxiety mediates the association of polyculturalism with academic self-efficacy (although findings were mixed about if intergroup anxiety mediates the association of polyculturalism with sense of belonging). And, findings support serial mediation such that greater endorsement of polyculturalism is associated with less intergroup anxiety, which in turn is associated with less use of alcohol to cope with intergroup anxiety, which in turn is associated with fewer adverse alcohol-related consequences.

Study 4

Study 4 aimed to further extend the findings of Studies 1, 2, and 3 in a longitudinal, repeated-measures design testing within-subjects associations over time. In this study, we aimed to test the hypotheses that among racially/ethnically diverse undergraduates at a diverse university, at time points when endorsement of polyculturalism is higher, intergroup anxiety is lower, academic self-efficacy is higher, and use of alcohol to cope with intergroup anxiety is lower. In this study, we controlled for mood at each time point as well as general social anxiety at baseline, year in college, race/ethnicity (two dummy-coded variables for Asian and White, given that these were the two largest groups that made up the majority of the sample), nativity, and current GPA. Further, we aimed to test the hypotheses that intergroup anxiety mediates the within-subjects associations of polyculturalism with academic self-efficacy and use of alcohol to cope with intergroup anxiety. Most participants were in later years of college, building on findings from Studies

1 and 3 that the results for polyculturalism with intergroup anxiety and academic and health outcomes exist throughout college.

Participants

A total of 117 undergraduates enrolled in a Psychology lab course in two different semesters at Stony Brook University participated during eight consecutive class sessions (two times per week; completing paper-and-pencil surveys) to receive course credit. Out of the 117 participants, 113 completed all measures of interest for the current investigation at least in the first survey and were included in analyses (42 Asian, 11 Black, 13 Latino, 35 White, 12 Multiracial/ethnic or Other; 83 born in the United States; 81 women, 31 men, 1 did not report gender; 1 in second year of college, 12 third year, 81 fourth year, 19 fifth year or beyond). The mean age was 21.12 ($SD = 0.90$), and the mean GPA was 3.18 ($SD = 0.37$).

Measures

The same measures as in previous studies of polyculturalism ($\alpha = .95$ across time points), intergroup anxiety, ($\alpha = .89$ across time points), academic self-efficacy (from Study 1; $\alpha = .95$ across time points), and use of alcohol to cope with intergroup anxiety ($\alpha = .88$ across time points) were included in every time point. The same measure of general social anxiety ($\alpha = .89$ at baseline) as in Study 3 was included in the first survey. Participants also reported at each time point, "Overall, how are you feeling right now?" on a scale of 1 (*Terrible*) to 7 (*Terrific*).

Results and Discussion

Use of alcohol to cope with intergroup anxiety was found to be positively skewed; therefore, a square root transformation was conducted on this variable before conducting other analyses. Bivariate correlations, means, and SD s, not accounting for the hierarchical structure of the data, are in Table 8. To handle the repeated measures/hierarchical structure of the data and to examine within-subjects associations over time, we ran three hierarchical linear modeling analyses in SAS with PROC MIXED. As predicted, when endorsement of polyculturalism was higher, intergroup anxiety was lower and academic self-efficacy was higher, controlling for time differences in mood, baseline general social anxiety, year in college, race/ethnicity, nativity, and current GPA. However, polyculturalism was not associated with use of alcohol to cope with intergroup anxiety (see Table 9).

Table 8. Bivariate Correlations, Means, and SDs for Study 4, Not Accounting for Hierarchical Structure of Data ($N = 113$, Eight Time Points)

	1	2	3	4	5	6	7	8	9	10	11
Time 1 only											
1. General social anxiety	–										
2. Year in college	.01	–									
3. Asian	.15 ^{ns}	-.15 ^{**}	–								
4. White	-.18 ^{ns}	.08 [*]	-.51 ^{**}	–							
5. Nativity (born in the United States)	-.07 [*]	.09 ^{**}	-.17 ^{**}	.14 ^{**}	–						
6. Current GPA	-.07 [*]	-.25 ^{**}	.07 [*]	.09 [*]	.02	–					
7. Polyculturalism	-.13 ^{ns}	-.04	-.14 ^{**}	.05	-.01	.05	–				
8. Feel today	-.17 ^{ns}	-.03	-.16 ^{**}	.08 [*]	.06	-.06	.13 ^{**}	–			
9. Intergroup anxiety	.41 ^{ns}	.01	.18 ^{**}	-.04	-.13 ^{**}	.02	-.44 ^{**}	-.19 ^{**}	–		
10. Academic self-efficacy	-.15 ^{ns}	.10 ^{**}	-.06	-.11 ^{**}	-.07 [*]	.11 ^{**}	.22 ^{**}	.23 ^{**}	-.30 ^{**}	–	
11. Use of alcohol to cope with intergroup anxiety (square root transformed)	.18 ^{ns}	.07 [*]	.14 ^{**}	-.04	-.15 ^{**}	-.04	-.22 ^{**}	-.05	.34 ^{ns}	-.16 ^{**}	–
Mean or %	2.26	4.05	37.2%	31.0%	73.5%	3.18	6.08	4.70	2.02	4.35	2.04
SD	1.17	0.59	–	–	–	0.37	0.72	1.02	0.70	0.68	1.34

Note. For interpretability, the untransformed mean and SD are presented for the variable that was transformed, while bivariate correlations presented are for the transformed version of that variable. * $p < .05$; ** $p < .01$.

Table 9. Results of Within-Subjects Hierarchical Linear Modeling Analyses for Study 4 ($N = 113$)

	Intergroup anxiety			Academic self-efficacy			Use of alcohol to cope with (square intergroup anxiety root transformed)			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>	
Between-subjects										
General social anxiety	0.22	0.05	4.87**	-0.07	0.05	-1.43	0.05	0.03	1.40	
Year in college	0.02	0.09	0.18	-0.07	0.10	-0.74	0.08	0.07	1.19	
Asian	0.20	0.13	1.56	-0.19	0.14	-1.36	0.14	0.09	1.45	
White	0.18	0.13	1.31	-0.33	0.15	-2.29*	0.07	0.10	0.70	
Nativity (Born in the United States)	-0.14	0.12	-1.16	-0.13	0.13	-0.98	-0.13	0.09	-1.48	
Current GPA	0.07	0.15	0.48	0.22	0.16	1.39	-0.03	0.11	-0.32	
Within-subjects										
Polyculturalism	-0.08	0.03	-2.58*	0.12	0.03	3.85**	-0.00	0.02	-0.00	
Feel today	-0.02	0.01	-1.57	0.05	0.01	4.01**	0.01	0.01	1.83	

Note. *B*s are unstandardized coefficients. * $p < .05$; ** $p < .01$.

Given that indirect associations can exist through mediators even when a direct association is not evident, we continued to test our hypotheses for mediation for both academic self-efficacy and use of alcohol to cope with intergroup anxiety. To test mediation at the within-subjects level, we followed Baron and Kenny (1986) steps for testing mediation with the same control variables included, and we used an online calculator (Tofighi & MacKinnon, 2011) that uses RMediation to calculate indirect effect estimates and confidence intervals. With an assumption of independence between paths a and b in the mediation model, there was evidence of within-subjects mediation or indirect associations of polyculturalism through intergroup anxiety with academic self-efficacy (Indirect Effect Estimate = .008, $SE = .005$; 95% CI .001 to .019) and use of alcohol to cope with intergroup anxiety (Indirect Effect Estimate = $-.008$, $SE = .004$; 95% CI $-.016$ to $-.002$). Because in mediation models with hierarchical data, paths a (between independent variable and mediator) and b (between mediator and dependent variable) may not be independent, we used a sensitivity analysis and found that the indirect associations remained significant even when assuming a high association between paths a and b (.7).

Findings support that when polyculturalism is higher, intergroup anxiety is lower and academic self-efficacy is higher, and intergroup anxiety mediates the within-subjects association of polyculturalism with academic self-efficacy, above and beyond daily mood, baseline level of general social anxiety, year in college, race/ethnicity, nativity, and current GPA. There was also evidence of an indirect within-subjects association of polyculturalism with less use of alcohol to cope through lower intergroup anxiety.

General Discussion

Across four studies with diverse undergraduates at two institutions, we generally found support for our hypotheses that endorsement of polyculturalism is associated with lower intergroup anxiety, greater academic self-efficacy, greater sense of belonging, less use of alcohol to cope with intergroup anxiety, and fewer adverse alcohol-related consequences, controlling for year in college, age, nativity, race/ethnicity, high school GPA, current GPA, multiculturalism, colorblindness, self-esteem, ethnic identification, general social anxiety, and mood. We also found support for the hypotheses that intergroup anxiety mediates the associations of polyculturalism with these academic- and alcohol-related variables. Building on a growing body of work on polyculturalism finding positive associations with intergroup attitudes (Bernardo et al., 2013; Rosenthal & Levy, 2012, invited revision under review; Rosenthal et al., 2012, 2014, 2015, under review), these findings suggest that polyculturalism may also play a role in academic and health outcomes of undergraduates at racially/ethnically diverse institutions.

Effect sizes for polyculturalism across studies were mostly small, with some approaching medium size, highlighting that polyculturalism is not the only important factor to consider when trying to understand and design interventions, programs, or policies to create change in intergroup anxiety, academic, and alcohol related outcomes among college students. Indeed, what contributes to these outcomes is multifaceted and complex, and we do not suggest that polyculturalism should be focused on alone. However, given persistent problems at colleges and universities around the United States related to intergroup relations, alcohol use, and academic outcomes despite much progress in research and intervention, exploration of factors that may influence these outcomes continues to be important. The current findings suggest that polyculturalism may be a valuable factor to continue to study in this context and to consider for interventions, programs, or policies in conjunction with other factors also known to contribute to these outcomes. We discuss specific suggestions for educational policy and programming below.

Findings from these studies extend prior research on polyculturalism in important ways. Study 4 was the first study to examine within-subjects associations of polyculturalism longitudinally, expanding on past between-subjects analyses, and suggesting within-person changes in polyculturalism have consequences for academic and alcohol outcomes over time. Polyculturalism was also found to be associated with academic and alcohol variables throughout the years in college across studies, expanding the types of outcomes found to be associated with this belief and demonstrating consistent implications across the undergraduate years. It would be worthwhile for future work to longitudinally study polyculturalism, intergroup anxiety, and academic and health outcomes from before the start of and across all years in college to further understand the processes and dynamics involved in these associations.

Results highlight intergroup anxiety as a mechanism in associations of polyculturalism with academic- and alcohol-related outcomes, and more generally underscore the importance of intergroup anxiety in the success and well-being of undergraduates at diverse institutions. With increasing diversity at U.S. universities, focusing on intergroup anxiety and other experiences, behaviors, beliefs, and attitudes related to intergroup contact may be increasingly important (Bowman, 2010; Gurin et al., 2002; Hurtado, 2005; Laird, 2005; Locks et al., 2008; Sidanius et al., 2010). Indeed, current controversies over prejudice and discrimination on college campuses around the United States and the ways institutions are handling those issues (e.g., Hartocollis & Bidgood, 2015) support how pressing and critical it is to address intergroup relations dynamics at colleges and universities. Findings also make an important connection to work on drinking motivated by social anxiety, suggesting that drinking used to cope with intergroup anxiety is also associated with more adverse alcohol-related consequences, and these findings are independent of general social anxiety. Future work on the role of intergroup

anxiety in drinking and adverse consequences may be important for colleges and universities as well as other diverse education and work settings.

Limitations and Future Directions

There are some limitations to the current investigation. Abbreviated measures were used to assess certain constructs to limit survey length. In some cases, different measures were used across studies for the same construct, although, for example, the consistent findings with different measures of academic self-efficacy helps to increase confidence in results. Our hypothesis was supported that polyculturalism was associated with fewer adverse alcohol-related consequences. We did not test and do not necessarily hypothesize associations with amount of alcohol consumption or binge drinking; however, future work might explore this.

We explored polyculturalism in two college settings; it would be worthwhile to continue to explore generalizability of findings to other universities and colleges across the United States. It may also be fruitful to examine polyculturalism and intergroup anxiety in other diverse contexts outside of colleges and universities, such as neighborhoods and workplaces as well as schools with younger students, and in different contexts around the world. Past work has found that polyculturalism is associated with intergroup attitudes, including more positive attitudes toward and greater intentions to be friends with people from other countries in Colombia and the Philippines in addition to the United States (Bernardo, 2013; Bernardo et al., 2013; Rosenthal et al., under review), suggesting this is a relevant belief internationally. However, the implications of polyculturalism for college or other dynamics in other parts of the world remain to be explored.

As these findings are correlational, direction of effects cannot be determined, including for mediational models tested. Another important future direction for research will be to explore if and how endorsement of polyculturalism can be promoted. Experimental and longitudinal work could help to inform the use of polyculturalism in interventions or programs in academic or other settings to improve intergroup attitudes and interactions, including reducing intergroup anxiety. The current findings suggest this could thereby potentially help to improve engagement, success, and well-being among undergraduates at diverse institutions, which are important goals in our increasingly diverse society. Qualitative research might also help to form a deeper understanding of how people understand and learn about polyculturalism, how it relates to and is distinct from other relevant diversity-related beliefs, and how it might be used in interventions.

Implications for Educational Policy and Programming

Scholars continue to lament “the huge rift between scientific research and the world of practitioners” and extol greater implementation and discussion of

findings regarding diversity beliefs along the educational ladder (Moghaddam, 2015, p. 522). Although more research is needed to inform the application of polyculturalism to educational policy and programming, the accumulating evidence suggests this is a promising area of exploration. Universities could potentially implement policies, interventions, or programs that promote students' endorsement of polyculturalism and/or that communicate that the institution itself endorses polyculturalism as an approach to diversity, as has been done in many educational settings, for example, with multiculturalism (e.g., Banks & Banks, 2013). As we have previously discussed (Rosenthal & Levy, 2010), we do not suggest that polyculturalism should replace multiculturalism, but rather that polyculturalism and multiculturalism are potentially complementary beliefs or approaches that may work hand in hand to promote positive intergroup relations. As discussed earlier, given how multifaceted and complex addressing intergroup relations on campuses as well as academic and alcohol outcomes among undergraduates is, utilizing strategies that simultaneously address multiple factors known to influence these dynamics are likely to be more successful than strategies that only focus on single factors. Especially given that we have found multiculturalism to be positively associated with polyculturalism and that multiculturalism is already implemented as a diversity strategy at many universities, it seems like adding polyculturalism to existing interventions, programs, and policies that currently use multiculturalism might be fruitful.

For example, in addition to student clubs and campus events that focus on particular racial/ethnic groups (e.g., Latino student group, event celebrating Black History Month, etc.), a university could encourage clubs and events that focus on ways that different racial/ethnic groups have interacted and influenced each other's cultures. A university might encourage and support a polycultural student group, which brings together students from different backgrounds to explore and to share with other students the ways in which their different cultures have throughout history interacted and influenced each other and continue to do so today. There could be events on campuses that might attract students' interest because they are inclusive, fun, and make a point to highlight polyculturalism within them. One example would be an event that teaches students how to dance salsa and simultaneously teaches them about the many cultural influences that contributed to the creation of salsa, including African, European, and Indigenous American cultures. Another example would be an event that teaches students Kung Fu and simultaneously teaches them about the pan-Asian and pan-African cultural influences that contributed to the creation of Kung Fu. An event could also be designed particularly to address experiences of students facing discrimination on campuses and more broadly in society at large. For example, an event could highlight the many valuable influences that Arab, Middle Eastern, and Muslim peoples have had on the United States as well as cultures and societies around the world due to historical and current intergroup interactions, given heightened discrimination

these individuals have been facing since September 11, 2001 (Jenkins, Ruppel, Kizer, Yehl, & Griffin, 2012). These ideas would incorporate what is known about the implications of polyculturalism, by highlighting cross-cultural influences and connections, with what is known about the implications of multiculturalism (e.g., Banks & Banks, 2013), by highlighting important cultural products and contributions of people from different parts of the world, as well as with what is known about the implications of intergroup contact (e.g., Pettigrew & Tropp, 2006), by bringing students from different backgrounds together to interact with each other in positive contexts.

Polyculturalism could also be incorporated into curricula across disciplines by highlighting cross-cultural interactions and influences when teaching about topics ranging from art to philosophy to medicine. Many universities and colleges, as well as some specific disciplines (e.g., the American Psychological Association's inclusion of diversity as a core competency), offer and even require students to take courses addressing diversity and multiculturalism (e.g., Cole, Case, Rios, & Curtin, 2011). These diversity-related courses could have content about polycultural influences and connections added to them, and/or standalone courses that focus on polycultural content could be sought out and developed for students to be encouraged or required to take. Instructors could also be informed about research findings on polyculturalism and be encouraged to find and incorporate polycultural content in their courses. There are ample examples of polycultural influences in a wide range of areas, such that any discipline could incorporate polycultural themes into their curricula. The physical environment at a university can also be used to communicate polyculturalism, such as artwork that highlights polycultural influences or campus food vendors that sell fusion food in addition to food from a range of diverse cultures. Although any one of these suggestions might not have a great influence on its own, using several of them together may begin to communicate the institution's endorsement of polyculturalism. And, in combination with other strategies targeting other factors, they might help to promote positive intergroup interactions, thereby improving other outcomes, such as academic and alcohol outcomes, among undergraduate students.

Given the importance of the transition to and first year of college, institutions could also consider programming particularly targeting first year students that leverages polyculturalism to promote comfort with and interest in diversity. For example, polycultural content or activities that teach students about polycultural influences or encourage them to find polycultural influences within their own cultures could be incorporated into existing orientation programs and required first-year courses that many institutions have to orient students to college. An intervention could even be tailored to individual students, using emails or text messages.

Although the existing evidence supports potential positive implications of polyculturalism for educational policy and programming, it is important that work

exploring those implications be mindful that intercultural interactions and influences sometimes happen in very negative contexts. For example, the histories of colonization and slavery have played an important role in influencing intercultural interactions and influences in the Americas and other parts of the world. As research on polyculturalism to date has only used a neutral measure of this belief, it is unknown what the implications are if individuals are thinking specifically about these negative contexts of interaction and influence. Further, future work testing if and how polyculturalism might be promoted should explore any potential negative reactions (e.g., anger, defensiveness, and guilt) to polycultural messaging that might result from a focus on those negative contexts. These potential issues further support that polyculturalism be considered in combination with other approaches, such as multiculturalism or approaches that specifically address dynamics of power and privilege in intergroup interactions (e.g., Sorensen et al., 2009), to best address diversity in educational and potentially other settings (Rosenthal & Levy, 2010).

Conclusion

As U.S. universities become increasingly racially and ethnically diverse, the United States falls behind other countries in undergraduate retention and graduation rates, and consequences of undergraduate drinking remain a prevalent problem. Therefore, continued research is needed that explores factors that contribute to intergroup anxiety, academic engagement, and drinking among undergraduates from all racial and ethnic backgrounds. Results supported that polyculturalism is associated with less intergroup anxiety, greater academic self-efficacy and belonging, less use of alcohol to cope with intergroup anxiety, and fewer adverse alcohol-related consequences among undergraduates across all years of college at diverse institutions. Findings also support intergroup anxiety as a key mechanism in these associations and an important factor to examine for undergraduates at diverse institutions. These findings suggest that future research on the roles of polyculturalism and intergroup anxiety among undergraduates may be critical to informing novel approaches to programs and interventions aimed at promoting the engagement, success, and well-being of students of all backgrounds at diverse colleges and universities across the United States

References

- Banks, J. A., & Banks, C. A. (2013). *Multicultural education: Issues and perspectives*. Hoboken, NJ: Wiley & Sons, Inc.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Bernardo, A. B. I. (2013). Exploring social cognitive dimensions of sexual prejudice in the Filipinos. *Philippine Journal of Psychology*, *46*, 19–48.

- Bernardo, A. B. I., Rosenthal, L., & Levy, S. R. (2013). Polyculturalism and attitudes toward people from other countries. *International Journal of Intercultural Relations*, 37, 335–344.
- Blackwell, D. L., Lucas, J. W., & Clarke, T. C. (2014). Summary health statistics for U.S. adults: National Health Interview Survey, 2012. *National Center for Health Statistics Vital Health Statistics*, 10, 1–161 (http://www.cdc.gov/nchs/data/series/sr_10/sr10_260.pdf).
- Bowman, N. A. (2010). College diversity experiences and cognitive development: A meta analysis. *Review of Educational Research*, 80, 4–33.
- Britt, T. W., Boniecki, K. A., Vescio, T. K., Biernat, M., & Brown, L. M. (1996). Intergroup anxiety: A person X situational approach. *Personality and Social Psychology Bulletin*, 22, 1177–1188.
- Carrigan, M. H., & Randall, C. L. (2003). Self-medication in social phobia: A review of the alcohol literature. *Addictive Behaviors*, 28, 269–284.
- Chang, M. J. (1999). Does racial diversity matter? The educational impact of a racially diverse undergraduate population. *Journal of College Student Development*, 40, 377–395.
- Chemers, M. M., Hu, L. -T., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93, 55–64.
- Cludius, B., Stevens, S., Bantini, T., Gerlach, A. L., & Hermann, C. (2013). The motive to drink due to social anxiety and its relation to hazardous alcohol use. *Psychology of Addictive Behaviors*, 27, 806–813.
- Cole, E. R., Case, K. A., Rios, D., & Curtin, N. (2011). Understanding what students bring to the classroom: Moderators of the effects of diversity courses on student attitudes. *Cultural Diversity and Ethnic Minority Psychology*, 17, 397–405.
- Cole, E. R., & Yip, T. (2008). Using outgroup comfort to predict Black students' college experiences. *Cultural Diversity and Ethnic Minority Psychology*, 14, 57–66.
- Gieling, M., Thijs, J., & Verkuyten, M. (2014). Dutch adolescents' tolerance of Muslim immigrants: The role of assimilation ideology, intergroup contact, and national identification. *Journal of Applied Social Psychology*, 44, 155–165.
- Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, 72, 330–366.
- Hartocollis, A., & Bidgood, J. (2015). Racial discrimination protests ignite at colleges across the U.S. *The New York Times* (<http://www.nytimes.com/2015/11/12/us/racial-discrimination-protests-ignite-at-colleges-across-the-us.html>).
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: The Guilford Press.
- Hindriks, P., Verkuyten, M., & Coenders, M. (2014). Interminority attitudes: The roles of ethnic and national identification, contact, and multiculturalism. *Social Psychology Quarterly*, 77, 54–74.
- Hingson, R. W., & White, A. M. (2012). Prevalence and consequences of college student alcohol use. In C. J. Correia, J. G. Murphy, & N. P. Barnett (Eds.), *College student alcohol abuse: A guide to assessment, intervention, and prevention* (pp. 3–24). Hoboken, NJ: John Wiley & Sons, Inc.
- Hingson, R., & White, A. (2014). New research findings since the 2007 Surgeon General's call to action to prevent and reduce underage drinking: A review. *Journal of Studies on Alcohol and Drugs*, 75, 158–169.
- Hingson, R. W., Zha, W., & Weitzman, E. R. (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18–24, 1998–2005. *Journal of Studies on Alcohol and Drugs*, Supp. 16, 12–20.
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating sense of belonging in first year college students. *Journal of College Student Retention*, 4, 227–256.
- Hurlbut, S. C., & Sher, K. J. (1992). Assessing alcohol problems in college students. *Journal of American College Health*, 41, 49–58.
- Hurtado, S. (2005). The next generation of diversity and intergroup relations research. *Journal of Social Issues*, 61, 595–610.
- Hymel, S., Comfort, C., Schonert-Reichl, K., & McDougall, P. (1996). Academic failure and school dropout: The influence of peers. In J. Juvonen, & K. R. Wentzel (Eds.), *Social motivation: Understanding children's school achievement* (pp. 313–345). Cambridge, UK: Cambridge University Press.

- Jenkins, W. J., Ruppel, S. E., Kizer, J. B., Yehl, J. L., & Griffin, J. L. (2012). An examination of post 9-11 attitudes towards Arab Americans. *North American Journal of Psychology, 14*, 77–84.
- Johnson, D. R., Soldner, M., Leonard, J. B., Alvarez, P., Inkelas, K. K., RowanKenyon, H., & Longerbeam, S. (2007). Examining sense of belonging among first-year undergraduates from different racial/ethnic groups. *Journal of College Student Development, 48*, 525–542.
- Kelley, R. D. G. (1999). The people in me. *Utne Reader, 95*, 79–81.
- Laird, T. F. N. (2005). College students' experiences with diversity and their effects on academic self confidence, social agency, and disposition toward critical thinking. *Research in Higher Education, 46*, 365–387.
- Leary, M. R. (1983). Social anxiousness: The construct and its measurement. *Journal of Personality Assessment, 47*, 66–75.
- Lewis, M. A., Hove, M. C., Whiteside, U., Lee, C. M., Kirkeby, B. S., Oster-Aaland, L., & Larimer, M. E. (2008). Fitting in and feeling fine: Conformity and coping motives as mediators of the relationship between social anxiety and problematic drinking. *Psychology of Addictive Behaviors, 22*, 58–67.
- Lewis, M. A., & Neighbors, C. (2004). Gender-specific misperceptions of college student drinking norms. *Psychology of Addictive Behaviors, 18*, 334–339.
- Locks, A. M., Hurtado, S., Bowman, N. A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students' transition to college. *The Review of Higher Education, 31*, 257–285.
- London, B., Rosenthal, L., Levy, S. R., & Lobel, M. (2011). The influences of perceived identity compatibility and social support on women in nontraditional fields during the college transition. *Basic and Applied Social Psychology, 33*, 304–321.
- Meece, J. L. (1997). *Child and adolescent development for educators*. New York: McGraw-Hill.
- Mendes, W. B., Major, B., McCoy, S., & Blascovich, J. (2008). How attributional ambiguity shapes physiological and emotional responses to social rejection and acceptance. *Journal of Personality and Social Psychology, 94*, 278–291.
- Mendoza-Denton, R., Downey, G., Purdie, V., Davis, A., & Pietrzak, J. (2002). Sensitivity to status based rejection: Implications for African American students college experiences. *Journal of Personality and Social Psychology, 83*, 896–918.
- Midgley, C., Maehr, M. L., Hruda, L. Z., Anderman, E., Anderman, L., Freeman, K. E., Gheen, M., Kaplan, A., Kumar, R., Middleton, M.J., Nelson, J., Roeser, R., & Urdan, T. (2000). *Manual for the patterns of adaptive learning scales*. University of Michigan.
- Moghaddam, F. M. (2015). Editorial. *Peace and Conflict: Journal of Peace Psychology, 21*, 521–524.
- Morris, E. P., Stewart, S. H., & Ham, L. S. (2005). The relationship between social anxiety disorder and alcohol use disorders: A critical review. *Clinical Psychology Review, 25*, 734–760.
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38*, 30–38.
- OECD. (2013). *Education at a glance 2013: OECD indicators*. OECD Publishing. <http://dx.doi.org/10.1787/eag-2013-en>
- Pajaras, F. (1997). Current directions in self-efficacy research. In M. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (vol. 10, pp.1–49). Greenwich, CT: JAI Press.
- Perry, S. P., Dovidio, J. F., Murphy, M. C., & van Ryn, M. (2015). The joint effect of bias awareness and self-reported prejudice on intergroup anxiety and intentions for intergroup contact. *Cultural Diversity and Ethnic Minority Psychology, 21*, 89–96.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90*, 751–783.
- Phinney, J. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with adolescents and young adults from diverse groups. *Journal of Adolescent Research, 7*, 156–176.
- Powell, L. A., Williams, J., & Wechsler, H. (2004). Study habits and the level of alcohol use among college students. *Education Economics, 12*, 135–149.
- Prashad, V. (2001). *Everybody was Kung Fu fighting: Afro-Asian connections and the myth of cultural purity*. Boston: Beacon Press.

- Prashad, V. (2003). Bruce Lee and the anti-imperialism of Kung Fu: A polycultural adventure. *Positions: East Asia Cultures Critique*, 11, 51–90.
- Rattan, A., & Ambady, N. (2013). Diversity ideologies and intergroup relations: An examination of colorblindness and multiculturalism. *European Journal of Social Psychology*, 43, 12–21.
- Richeson, J. A., & Shelton, J. N. (2003). When prejudice does not pay: Effects of interracial contact on executive function. *Psychological Science*, 14, 287–290.
- Roberts, R., Phinney, J., Masse, L., Chen, Y., Roberts, C., & Romero, A. (1999). The structure of ethnic identity in young adolescents from diverse ethnocultural groups. *Journal of Early Adolescence*, 19, 301–322.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rosenthal, L., & Levy, S. R. (2010). The colorblind, multicultural, and polycultural ideological approaches to improving intergroup attitudes and relations. *Social Issues and Policy Review*, 4, 215–246.
- Rosenthal, L., & Levy, S. R. (2012). The relation between polyculturalism and intergroup attitudes among racially and ethnically diverse adults. *Cultural Diversity and Ethnic Minority Psychology*, 18, 1–16.
- Rosenthal, L., & Levy, S. R. (2013). Thinking about mutual influences and connections across cultures relates to more positive intergroup attitudes: An examination of polyculturalism. *Social and Personality Psychology Compass*, 7, 547–558.
- Rosenthal, L., & Levy, S. R. (invited revision under review). Polyculturalism predicts increased positive intergroup contact and friendship across the beginning of college.
- Rosenthal, L., Levy, S. R., Katsner, M., & Bazile, C. (2015). Polyculturalism and attitudes toward Muslim Americans. *Peace and Conflict: Journal of Peace Psychology*, 21, 535–545.
- Rosenthal, L., Levy, S. R., & Militano, M. (2014). Polyculturalism and sexist attitudes: Believing cultures are dynamic relates to lower sexism. *Psychology of Women Quarterly*, 38, 519–534.
- Rosenthal, L., Levy, S. R., & Moss, I. (2012). Polyculturalism and openness about criticizing one's culture: Implications for sexual prejudice. *Group Processes and Intergroup Relations*, 15, 149–166.
- Rosenthal, L., London, B., Levy, S. R., & Lobel, M. (2011). The roles of perceived identity compatibility and social support for women in a single-sex STEM program at a co-educational university. *Sex Roles*, 65, 725–736.
- Rosenthal, L., London, B., Levy, S. R., Lobel, M., & Herrera-Alcazar, A. (2011). The relation between the Protestant work ethic and undergraduate women's perceived identity compatibility in nontraditional majors. *Analyses of Social Issues and Public Policy*, 11, 241–262.
- Rosenthal, L., Ramírez, L., Bernardo, A. B. I., & Levy, S. R. (under review). Polyculturalism: Viewing cultures as dynamically connected and its implications for intercultural attitudes in Colombia.
- Ryan, C. S., Hunt, J. S., Weible, J. A., Peterson, C. R., & Casas, J. F. (2007). Multicultural and colorblind ideology, stereotypes, and ethnocentrism among Black and White Americans. *Group Processes and Intergroup Relations*, 10, 617–637.
- Schunk, D. H. (1995). Self-efficacy and education and instruction. In J. E. Maddux (Ed.), *Self efficacy adaptation, and adjustment: Theory, research, and application* (pp. 281–303). New York: Plenum Press.
- Sher, K. J., & Levenson, R. W. (1982). Risk for alcoholism and individual differences in the stress response-dampening effect of alcohol. *Journal of Abnormal Psychology*, 91, 350–367.
- Sidanius, J., Levin, S., Van Laar, C., & Sears, D. O. (2010). *The diversity challenge: Social identity and intergroup relations on the college campus*. New York: Russell Sage Foundation.
- Singleton, R. A., Jr., & Wolfson, A. R. (2009). Alcohol consumption, sleep, and academic performance among college students. *Journal of Studies on Alcohol and Drugs*, 68, 548–555.
- Sorensen, N., Nagda, B. A., Gurin, P., & Maxwell, K. E. (2009). Taking a “hands-on” approach to diversity in higher education: A critical-dialogic model for effective intergroup interaction. *Analyses of Social Issues and Public Policy*, 9, 3–35.
- Stephan, W. G. (2014). Intergroup anxiety: Theory, research, and practice. *Personality and Social Psychological Review*, 18, 239–255.

- Strayhorn, T. L. (2008). Fittin' in: Do diverse interactions with peers affect sense of belonging for black men at predominantly white institutions. *NASPA Journal, 45*, 501–527.
- Timberlake, D. S., Hopfer, C. J., Rhee, S. H., Friedman, N. P., Haberstick, B. C., Lessem, J. M., & Hewitt, J. K. (2007). College attendance and its effect on drinking behaviors in a longitudinal study of adolescents. *Alcoholism: Clinical and Environmental Research, 31*, 1020–1030.
- Tofighi, D., & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior Research Methods, 43*, 692–700.
- U.S. Department of Health and Human Services (USDHHS). (2015). Preventing and addressing alcohol and drug problems. Rockville, MD. (<http://www.nacoa.org/pdfs/Clergy%20Hand%20Book.pdf>).
- Verkuyten, M. (2005). Ethnic group identification and group evaluation among minority and majority groups: Testing the multiculturalism hypothesis. *Journal of Personality and Social Psychology, 88*, 121–138.
- White, A. M., Macinnes, E., Hingson, R. W., & Pan, I. J. (2013). Hospitalizations for suicide-related drug poisonings and co-occurring alcohol overdoses in adolescents (ages 12–17) and young adults (ages 18–24) in the United States, 1999–2008: Results from the nationwide inpatient sample. *Suicide and Life-Threatening Behavior, 43*, 198–212.

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