Investigating the Effects of Racial Stereotypes and Vigilance on Anxiety and Sleep

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Abstract

Chronic stress and anxiety tend to be higher in minority groups than in non-minority groups but the potential causes for this disparity remains understudied. Discrimination may be a cause, however, there are various factors that can influence an individual's racial experience such as stereotype threat which is the pressure to confirm or deny a typical trait associated with that individual's racial group. Additionally, the constant awareness of one's racial group in society can lead to race-related vigilance with a modification of behavior to avoid discriminatory experiences altogether. Although negative relationships between both stereotype threat (ST) and race-related vigilance (RRV) and anxiety are well-demonstrated in research, there is a dearth of research on how this impacts other aspects of life, namely sleep quality. The current study examines the effects of stereotype threat (ST) and race-related vigilance (RRV) on college student's anxiety and sleep quality and if these relations are mediated by the level of identification with the individual's ethnicity. Data comes from 80 participants (M age= 20.2 , SD= 1.90). Multiple linear regressions indicated that among levels of ST and RRV in college students, ST was the strongest predictor of a composite of higher anxiety and sleep disturbance. In contrast, RRV was a strong predictor of anxiety but not sleep disturbance. Lastly, ethnic identification did not mediate the relations of anxiety and sleep disturbance to either ST or RRV.

Keywords: stereotype threat, race-related vigilance, ethnic identity

Stereotypes are beliefs about typical traits supposedly possessed by the majority of the individuals in a social group. In academic settings, the pressure to confirm or deny a stereotype is a situational threat that can hamper achievement and performance (Cohen & Steele, 2002; Gonzales, Blanton, & Williams, 2002; Walton & Cohen, 2003). The degree to which ST impacts an individual involves RRV or a constant awareness of one's racial status within society (Cooper et al., 2012). It includes behavior modification to avoid situations with race and discrimination which essentially creates a perpetual protective barrier that has been shown to mediate the link between discrimination and stress (Cooper et al., 2012; Himmelstein et al., 2014). The perpetuity of this coping mechanism creates chronic stress and can lead to health disparities (Turner, 2009; Kaplan & Nunes, 2003; Dimsdale, 2008; Cooper et al., 2012). Additionally, anticipation of stress-induced activities further increases stress levels which have been reported to worsen sleep quality and efficiency in individuals experiencing anticipation near bedtime (Akerstedt, 2006; Akerstedt & Kecklund et al., 2007; Akerstedt & Nordin et al., 2012; Hicken et al., 2013). Ethnic minorities may be at risk for increased psychopathological issues because of stress experienced over unequal treatment and racism (Johnson, 2006; Soto et al., 2011). A factor that combats this psychopathology is the construct of ethnic identity as it creates a sense of commitment, positive feelings about the group, and behaviors that indicate involvement within the group (Phinney, 1992; Roberts et al., 1999, Avery et al., 2007). To date, research has been lacking in addressing significant relationships between ST and anxiety as well as how discriminatory experiences in general directly relate to sleep disturbances. This study investigated how ST and RRV individually interacted with anxiety and sleep quality as well as how ethnic identity mediates this interaction.

Stereotype Threat in an Academic Setting

The minorities' experience of stereotypes and marginalization is based on established perceptions formed throughout history, and there are various factors that influence these perceptions. The model minority myth is a major category of stereotypes for Asian people in particular (McGee et al., 2018). While the myth seems to present Asian students in a positive light as prime examples of intelligence and success, it was found in a study on college Science, Technology, Engineering, and Math (STEM) students to create the greatest level of imposter syndrome in comparison to all other minority groups (McGee et al., 2018). The presence of ST and the pressure of reaching expectations of academic achievement increased feelings of fraudulence in the classroom. While Asian peers experienced pressure to confirm the stereotype of being academically successful, Black peers sought to defy stereotypes of intellectual inferiority (McGee et al., 2018). Ultimately, both racial groups expend extra labor, materially and psychologically, as a result of being marginalized and stereotyped. Additionally, outgroup beliefs can influence the degree to which an ethnic ingroup experiences stereotypes. White adults that worked or volunteered with children held Asian and Latinx peers in higher regard than Black students (Priest et al., 2018). The percentage of white adults that perceived Black adults as violence-prone (52%), unintelligent (19%), and having unhealthy habits (36%) were higher than any other minority or age group. In spite of the extensive research, it is important to note the experimental nature of these studies in which participants are primed prior to the assessment of opinions on ethnic groups' roles in an academic setting. This ensures that the participant is aware of race while being assessed and may replicate differently in survey based studies.

Race-Related Vigilance, Sleep, & Health Disparities

RRV is a new concept and there is not much empirical research on how it affects various aspects of life. The concept is based on the idea that constant awareness of racism and discrimination is developed as a coping mechanism to avoid confrontation with it (Hicken et al., 2013). In an interview conducted with older Black individuals, it was summarized that vigilance was similar to a "shield" that must be put on every morning to prepare for insults and racism in public places, even if nothing ends up occurring (Feagin & Sikes, 1994; Hicken et al., 2013).

The continual awareness of discrimination can manifest psychosocial stressors that perpetuate throughout life and start in adolescence (Williams et al., 2013; Priest et al., 2018). Chronic stress has been recognized as an important determinant of numerous health outcomes, including cognitive decline (McEwen & Sapolsky, 1995); diabetes (Surwit & Schneider et al., 1992, Heraclides & Chandola et al., 2009); cardiovascular disease (Kaplan & Nunes, 2003; Dimsdale, 2008); and mood disorders (McEwen, 2003; Mirowsky & Ross, 2003), however, the research linking discrimination to health has been minimal (Sternthal Slopen et al., 2011; Hicken et al., 2013). In a 2004 Public Health Survey in the Scania region of Sweden, the higher levels of poor self-reported psychological and physical health were associated with greater anticipation of ethnic discrimination in the workplace (Lindstrom, 2008; Mohseni & Lindstrom, 2008). Furthermore, the greater levels of vigilance in Black people compared to white people contributes to the increased prevalence of hypertension (Hicken et al., 2014). In addition to health disparities in Black and white adults, sleep quality and duration also vary. Fewer than six and more than eight hours of sleep has been associated with multiple adverse effects, such as hypertension, cardiometabolic diseases (Knutson Van Cauter et al., 2011), and increased mortality (Cappuccio, D'Elia et al., 2010). Black people and to some extent other ethnic minorities have higher odds than white people of exhibiting these high-risk sleep durations (Hale

& Do, 2007). There is speculation on how RRV affects sleep issues and a strong possibility is rumination, or dwelling on negative thoughts or emotions, as it can perpetuate stress-related intrusive thoughts and contribute to sleep disturbances (Hall et al., 2000; Hicken et al., 2013).

Benefits of Ethnic Affiliation

Ethnic identity involves (a) the degree to which people have learned about their ethnicity; (b) the degree to which they have come to terms with what their ethnicity means to them specifically; (c) the affect, or outward expression of an individual's internal emotions, that is influenced with perceived ethnic group's status in society (Little, 2014). Positive and strong relationships with ethnic group identities are shown to be linked to higher self-esteem and coping (Roberts et al., 1999; Espinosa et al., 2019). At the same time, depression and loneliness have been shown to have a negative relationship with ethnic identity. Furthermore, ethnic identity has been found to be a moderator between perceived stress and depression in Latino adults (Chavez-Korell & Torres, 2014; Espinosa et al., 2019). The connection to ethnic identity is more salient among African Americans and other minority ethnic groups in comparison to European Americans (Phinney, 1992; Roberts et al., 1999). Due to the prevalence of white individuals in certain American states, European Americans are less likely to be reminded of their ethnicity thus exhibiting less of a connection to it (McDermott & Samson, 2005; Williams et al., 2012). While these findings are associating ethnic identity and decreased stress, the link has not been explored enough to establish a strong relationship between the two.

Contradictions

The validity of ST has been challenged due to a majority of the research studies that were conducted utilizing an experimental design. In this case, there is an assurance that the participant is primed with race or gender prior to taking an assessment (Owens et al., 2013). When

replicated in an observational study with data from College Board, it was seen that the only

difference in scores between high school seniors taking a math aptitude test was dependent on

whether their future major in college was math-focused or not, with participants choosing a non-

math major exhibiting lower scores (Cullen et al, 2016). The stereotype itself may not be

noteworthy enough to be triggered in real-life settings due to the fact that the motivation of the

individual plays a key role in the effects, especially since identification with the domain in which

they are being tested affects the extent to which their internal doubts hinder their ability (Cullen

et al., 2016; Steele, 1997). Although this may be true for performance, it does not discount that

ST is prevalent and affecting students in other facets of their lives that have not been studied,

such as sleep. Furthermore, ST is a nuanced theory that is only a fraction of the minority

experience of discrimination and requires greater replication to form an accurate assumption

about its effects.

Conclusions

The perception and effects of discrimination are altered by various factors that differ

based on notions and affiliation with ethnic groups. The greater the comfort and acceptance of an

individual's ethnicity, the more protected they become from experiences with discrimination as

the positive assurance of the ethnic group's status in society is increased. This can help with

experiences of ST, in particular. The constant exposure to threats, especially in academic

settings, can impede success and decrease self-esteem. Moreover, the perception and degree of

awareness of racial experiences, such as ST, can deepen the impact. An individual that identifies

with a minority ethnic group must be vigilant of multiple factors, such as their own actions and

words as well as their peer's nonverbal communication, in order to avoid discriminatory

experiences that could thwart their achievements and overall happiness. The exploration into the

effects of these factors that impede minorities' success is novel and relevant.

Methods

Study Design Overview

This study explored the relationship between both stereotype threat and race-related vigilance and how that impacted anxiety and sleep disturbance in college students. The primary independent variables were stereotype threat experiences with mathematics courses as measured using a revised version of the Stereotype Threat at School (Bedyńska et al., 2018; Stone and McWhinnie, 2008) and the degree to which individuals were vigilant about their ethnic group with the Multidimensional Inventory of Racial Identity (Sellers, 2013). The dependent variables were the levels of anxiety experienced and sleep disturbance as measured using the State-Trate Anxiety Inventory (Spielberg,1983) and a revised version of the Pittsburgh Sleep Quality Index (Buysse et al., 1988), respectively. I hypothesized that individuals with a high ST and RRV exhibit higher anxiety levels and greater sleep disturbance. Furthermore, the extent to which they felt connected to their ethnic group was treated as a moderator measured by the centrality scale of the Heightened Vigilance Scale (Williams, 2016). Secondary analyses hypothesized that ethnic identity as a moderator impacts the relationship between both high levels of ST and RRV causing levels of anxiety and sleep disturbance to be lower. The data was obtained through self-reported surveys sent out on social media and University of Texas at Austin's SONA program for undergraduate students in the introductory psychology course.

Participants

Participants were recruited from an introductory psychology course offered at the University of Texas at Austin as well as through typical social media platforms utilized by students, such as GroupMe and Facebook. The eligibility criteria was that participants must be at least 18 years of age and able to proficiently read in English. Participants consisted of 80

individuals of various genders and races, with ages ranging from 18-27 years. The study was approved by the Institutional Review Board of The University of Texas at Austin for research with human subjects.

Measures

All measures can be found in Appendix A.

Personal Demographic Information

The demographic information section asked participants to identify their race/ethnicity from a detailed list. There was an option to choose multiple ethnicities if the individual identified as biracial or multiethnic, and an "other" option in which participants could write in an answer. Basic demographic questions such as age, gender, and college major (if applicable) were asked as well.

Trait Anxiety Inventory

The Trait Anxiety Inventory (Spielberg, 1983) is a 20-item self-report assessment that divides state anxiety and trait anxiety. It has items such as "I feel tense" and "I feel confused". For each of the statements, scores ranged from 1 (*not at all*) to 4 (*very much so*). Scoring is easily accomplished by summing scores for all items while reverse scoring anxiety-absent questions to create a composite in which higher sums indicated a higher level of trait anxiety. The maximum score obtainable is 80 and the minimum score is 20. The STAI has been found to be a valid and reliable measure for studying anxiety in research and clinical settings (Sesti, 2000). The mean composite measure yielded a satisfactory Cronbach's $\alpha = 0.886$, suggesting the measure is reliable.

Pittsburgh Sleep Quality Index- Revised

The Pittsburgh Sleep Quality Index- Revised (Buysse et al., 1988) is a self-rated questionnaire containing 19 questions- the last 5 of which are rated by the bed partner or roommate. For my study, it was modified to exclude the last 5 questions as it is not relevant in the focus of my exploration into self-reported sleep disturbance. There are a variety of questions and formats ranging from "During the past month, how many hours of sleep do you receive every night?" to how often they have had trouble sleeping because they "feel too cold" or "have pain". The first 4 questions are open-ended as they ask for a number of hours or overall timing which can have a wide range. Three of the questions are given a spectrum ranging from 0 (*not during the past month*) to 4 (*3 or more times a week*). The last 3 are various spectrums with the same range but modified to fit the context of the question being asked. The component scores are summed to produce an overall score. Higher scores reflect worse sleep quality. The PSQI has been found to be a valid and reliable assessment of sleep quality (Grandner et al., 2006).

Stereotype Threat at School- Revised

The Stereotype Threat at School- Revised (Bedyńska et al., 2018, 2019, 2020; Stone and McWhinnie, 2008) is a 7 item questionnaire initially used for gender differences in ST. It has been adapted for race and included questions about mathematics ability with regards to racial identity such as "I am afraid that some of my friends think I have much lower math skills because I am [race]". For each of these statements, there is a 6 point scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Scoring was accomplished using the mean of all answers and using that as the index for calculating ST. The STaS has been found to be a valid and reliable assessment of ST (Bedyńska et al., 2021).

Heightened Vigilance

The Heightened Vigilance Scale (Williams, 2016) is a 6-item self-report assessment that explores day-to-day race-related experiences that are likely to cause heightened vigilance. It has items such as "the preparation of possible insults before leaving home" and "carefully observing what happens in the environment". For each of these statements, scores range from 1 (*very often*) to 5 (*never*). Scoring is accomplished by summing scores for all items so higher scores displayed greater vigilance. The Heightened Vigilance Scale has been found to be a valid and reliable measure for assessing racial hypervigilance (Williams, Lawrence, & Davis, 2019). The mean composite measure yielded a satisfactory Cronbach's $\alpha = 0.903$, suggesting the measure is reliable.

Multidimensional Inventory of Racial Identity- Centrality

The Multidimensional Inventory of Racial Identity- Centrality (Sellers, 2013) has been adapted for all minority ethnic groups from The Multidimensional Model of Black Identity. It is a 8-item questionnaire with subsections, however, only questions regarding centrality were utilized. For each statement, scores range from 1 (*strongly disagree*) to 7 (*strongly agree*). The subscales were generated by reverse coding negatively worded items and then averaging across all items within a particular scale. Higher scores indicated greater ethnic identity. The MIRI has been found to be a valid and reliable assessment of racial ideology and centrality (Scottham et al., 2009).

Procedures

Participants were invited to partake in an online research study that examined how individuals with discriminatory experiences related to anxiety and sleep issues. They were asked to sign a consent form informing them of the purpose of the study as well as the risks and benefits involved. Participants completed a survey with approximately 62-77 questions

depending on how many ethnicities participants identified with, which took up to 25 minutes to complete. The measures were completed in the following order: anxiety scale, sleep disturbance, stereotype threat, race-related vigilance, and ethnic identity. At the end of the study, participants were given a debriefing form detailing the study and directing them towards mental health resources on UT campus and online, such as the Counseling and Mental Health Center. Those in the introductory psychology course were compensated with research participation credit for their time spent taking the survey.

Statistical Analysis

Each participant had the following data: self-reported ethnicity, composite mean anxiety score, composite mean sleep disturbance score, composite mean stereotype threat score, composite mean race-related vigilance score, and composite mean ethnic identity score. For each participant, the necessary data was extracted from the Qualtrics survey output and inserted into the Statistical Package for the Social Sciences (SPSS). With the Qualtrics survey forced answer programming, the chances for missing values in completed surveys was decreased.

After cleaning and organization in SPSS, the data was scored to create composites of each question in relation to each survey's scoring method. Due to time constraints, biracial and multiethnic participants were removed from final analyses as scoring was different for these responses. Next, linear regression analysis was conducted on individual independent and dependent variables. The first regression analysis regressed stereotype threat on anxiety and the second regressed race-related vigilance on anxiety. The same analysis was performed with regressions of stereotype threat and race-related vigilance on sleep disturbance. This regression was run without any covariates.

Secondary analyses investigated ethnic identity as a potential moderator. An interaction term was created using the product of stereotype threat and ethnic identity. Once the interaction term was created, it was treated as a new variable and included in a new regression model to see how it impacted anxiety and sleep disturbance separately. Additionally, an interaction term was created using the product of race-related vigilance and ethnic identity and then regressed on anxiety and sleep disturbance separately as well. If the relationship between each interaction variable and anxiety and sleep was found to be significant, its relationship would be probed further.

Results

The first research question assessed whether ST and RRV were predictive of higher anxiety or sleep disturbance levels. The first linear regression explored the impact of ST on anxiety levels which produced statistically significant predictors (B= 0.165, p= 0.006) (See Table 1). The next analysis regressed anxiety on RRV and was also found to be significant (B= -0.096, p= 0.045) (Table 2). Next, the impact of ST on sleep disturbance showed significance (B= 1.086, p= 0.005) (Table 3). Finally, sleep disturbance was regressed on RRV, however, no statistical significance emerged (B= -0.509, p= 0.102) (Table 4). All initial analyses proved significant predictors except for the relationship between RRV and sleep disturbance.

Table 1

Regressing Anxiety on Stereotype Threat and an Interaction Term of Stereotype Threat and Ethnic Identity

Anxiety	Model 1		Model 2	
Variable	B (SE)	p	B (SE)	p
Stereotype Threat	0.165 (0.058)	0.006	0.107 (0.253)	0.674
Ethnic Identity			0.27 (0.90)	0.768
Stereotype Threat by Ethnic Identity			0.11 (0.057)	0.854

Table 2

Regressing Anxiety on Race-Related Vigilance and an Interaction Term of Race-Related Vigilance and Ethnic Identity

Anxiety	Model 1	Model 2

Variable	B (SE)	p	B (SE)	p
Race-Related Vigilance	-0.096 (0.047)	0.045	0.02 (0.143)	0.887
Ethnic Identity			0.123 (0.116)	0.293
Race-Related Vigilance by Ethnic Identity			-0.025 (0.033)	0.454

Table 3

Regressing Sleep Disturbance on Stereotype Threat and an Interaction Term of Stereotype

Threat and Ethnic Identity

Sleep	Model 1		Model 2	
Variable	B (SE)	p	B (SE)	p
Stereotype Threat	1.086 (0.375)	0.005	-0.622 (1.629)	0.704
Ethnic Identity			-0.721 (0.581)	0.219
Stereotype Threat by Ethnic Identity			0.407 (0.369)	0.274

Table 4

Regressing Sleep Disturbance on Race-Related Vigilance and an Interaction Term of Race-

Related Vigilance and Ethnic Identity

Sleep	Model 1		Model 2	
Variable	B (SE)	p	B (SE)	p

Race-Related Vigilance	-0.509 (0.308)	0.102	0.086 (0.933)	0.927
Ethnic Identity			0.395 (0.757)	0.604
Race-Related Vigilance by Ethnic Identity			-0.159 (0.214)	0.459

The second research question assessed the potential moderating effect of ethnic identity on the relationship between ST and RRV separately on anxiety and sleep disturbance individually as well. The first regression examined the impact of ST on anxiety along with an interaction term produced from ST and ethnic identity. There was no significant relationship for the interaction term (B= 0.11, p= 0.854) (Table 1). This was repeated again for RRV and anxiety with no significance emerging (B= -0.025, p= 0.454) (Table 2). Next, the created interaction terms were assessed with sleep disturbance. There was no significance for regression between ST and sleep disturbance (B= 0.407, p=0.274) (Table 3). Lastly, no significance was found for RRV and sleep disturbance with ethnic identity as a moderator (B=-0.159, p=0.459) (Table 4). There was no significance for the interaction term in any of the regressions.

Discussion

The primary finding from the statistical analysis shows that there is a significance between stereotype threat and increased anxiety and sleep disturbance in college students. Additionally, race-related vigilance showed a significant relationship with lower levels of anxiety. This may be due to the fact that increased awareness of racial situations leads to expectations that stabilize emotion such as anxiety. Ethnic identity was not discovered to be a moderator.

One primary limitation of the study is the lack of ethnic diversity in participants. There was specifically a lack of African American/Black and Native American participants. The data was collected from the Austin, Texas area which may have played a role in the racial distribution. The exclusion of biracial participants due to time contraints also limited the analysis of discriminatory experiences based on ethnicity. With increased racial diversity and participants, analysis on how each ethnicity responds to stereotype threat and race-related vigilance and their specific anxiety and sleep disturbance levels would increase understanding of individual ethnic group experiences.

The study findings may suggest that stereotype threat or feeling racially perceived based on academic performance is strong in college students as academics are a major part of one's life. Its effect on anxiety and sleep could prove more impactful than high school students or even non-college students that have a varying sense of priorities, however, further research is necessary.

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Appendix A

Personal Demographic Questions

What is your age?

[⌄]

Please specify your ethnicity. Choose all that apply.

White

Hispanic or Latino/a

Black or African American

Native American or American Indian

Asian

Native Hawaiian or Pacific Islander

Other

[   ]

To which gender do you identify most?

Male

Female

Non-binary

Prefer not to say

Please identify your major if you are currently in college.

[   ]

Trait Anxiety Inventory

A number of statements which people have used to describe themselves are given below. Read each statement and then select the bubble to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you usually feel.

	Almost Never	Sometimes	Often	Almost Always
I feel pleasant	O	O	O	O
I feel nervous and restless	O	O	O	O
I feel satisfied with myself	O	O	O	O
I wish I could be as happy as others seem to be	O	O	O	O
I feel like a failure	O	O	O	O
I feel rested	O	O	O	O
I am "calm, cool, and collected"	O	O	O	O
I feel that difficulties are piling up so that I cannot overcome them	O	O	O	O
I worry too much over something that really doesn't matter	O	O	O	O
I am happy	O	O	O	O

	Almost Never	Sometimes	Often	Almost Always
I have disturbing thoughts	O	O	O	O
I lack self-confidence	O	O	O	O
I feel insecure	O	O	O	O
I make decisions easily	O	O	O	O
I feel inadequate	O	O	O	O
I am content	O	O	O	O
Some unimportant thought runs through my mind and bothers me	O	O	O	O
I take disappointments so keenly that I can't put them out of my mind	O	O	O	O
I am a steady person	O	O	O	O
I get in a state of tension or turmoil as I think over my recent concerns and interests	O	O	O	O

Pittsburgh Sleep Quality Index- Revised

The next set of questions relate to your usual sleep habits during the past month. Your answers should indicate the most accurate reply for the majority of days and nights.

During the past month, what time have you usually gone to bed at night? Please specify AM/PM.

During the past month, how long (in minutes) has it usually taken you to fall asleep each night?

less than 15 minutes

16-30 minutes

31-60 minutes

more than an hour

During the past month, what time have you usually gotten up in the morning? Please specify AM/PM.

During the past month, how many hours of actual sleep do you get each night? (This can be different than the number of hours you spend in bed.)

less than 5 hours

5-6 hours

6-7 hours

more than 7 hours

During the past month, how often have you had trouble sleeping because you...

	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
Cannot get to sleep within 30 minutes	O	O	O	O
Wake up in the middle of the night or early morning	O	O	O	O
Have to get up to use the bathroom	O	O	O	O
Cannot breathe comfortably	O	O	O	O
Cough or snore loudly	O	O	O	O
Feel too cold	O	O	O	O
Feel too hot	O	O	O	O
Have bad dreams	O	O	O	O
Have pain	O	O	O	O

	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
During the past month, how often have you taken medicine to help you sleep (prescribed or "over the counter")?	O	O	O	O
During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity?	O	O	O	O

	No problem at all	Only a very slight problem	Somewhat of a problem	A very big problem
During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?	O	O	O	O

	Very good	Fairly good	Fairly bad	Very bad
During the past month, how would you rate your sleep quality overall?	O	O	O	O

Stereotype Threat at School- Revised

Regarding academic stereotypes, please choose to which degree you believe your ethnicity and mathematical competency relate. (If you have not taken a math class in some time, please indicate your feelings based on past experiences.)

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
I am afraid that some of my friends think that I have much lower math skills because I am White	O	O	O	O	O	O
If I take a math test, I am afraid my low score will confirm a stereotype that White people have lower math skills	O	O	O	O	O	O
Some of my friends think that White people should not be interested in math and science because it is not for White people	O	O	O	O	O	O
Sometimes I think that I should not be good in math because I am White	O	O	O	O	O	O
I am afraid a math teacher will think that I may not succeed because I am White	O	O	O	O	O	O
During math classes, I feel anxious that if I do not succeed I will reinforce the stereotype that White people should not be good at math	O	O	O	O	O	O
I sometimes think that when it comes to math, I am evaluated based on being White and not my actual abilities	O	O	O	O	O	O

Heightened Vigilance

In dealing with any day-to-day racial discrimination at college, how often do you:

	Very often	Fairly often	Not too often	Hardly ever	Never
Think in advance about the kinds of problems you are likely to experience?	O	O	O	O	O
Try to prepare for possible insults before leaving home?	O	O	O	O	O
Feel that you always have to be very careful about your appearance to get good service or avoid being harassed?	O	O	O	O	O
Carefully watch what you say and how you say it?	O	O	O	O	O
Carefully observe what happens around you?	O	O	O	O	O
Try to avoid certain social situations and places?	O	O	O	O	O

Multidimensional Inventory of Racial Identity- Centrality

Please indicate to what degree you believe your identified ethnicity impacts the following statements. Again, there are no right or wrong answers so please answer as you see fit.

	Strongly disagree	Moderately disagree	Disagree	Unsure	Agree	Moderately agree	Strongly agree
Overall, being White has very little to do with how I feel about myself	O	O	O	O	O	O	O
In general, being White is an important part of my self-image	O	O	O	O	O	O	O
My destiny is tied to the destiny of other White people	O	O	O	O	O	O	O
Being White is unimportant to my sense of what kind of person I am	O	O	O	O	O	O	O
I have a strong sense of belonging to White people	O	O	O	O	O	O	O
I have a strong attachment to other White people	O	O	O	O	O	O	O
Being White is an important reflection of who I am	O	O	O	O	O	O	O
Being White is not a major factor in my social relationships	O	O	O	O	O	O	O