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ETHNIC IDENTITY AND PERCEIVED DISCRIMINATION AS PREDICTORS OF ACADEMIC ATTITUDES: THE MEDIATING AND MODERATING ROLES OF PSYCHOLOGICAL DISTRESS AND SELF-REGULATION

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ABSTRACT OF THESIS

ETHNIC IDENTITY AND PERCEIVED DISCRIMINATION AS PREDICTORS OF ACADEMIC ATTITUDES: THE MEDIATING AND MODERATING ROLES OF PSYCHOLOGICAL DISTRESS AND SELF-REGULATION

The current study addressed the deficiency in research by examining risk factors for immigrant children that may lead to academic disengagement (such as ethnic discrimination by peers and teachers, and psychological distress) and resilience factors that promote academic engagement (such as the development of a positive ethnic identity). Children who had stronger, more positive ethnic identities had more positive academic attitudes. Furthermore, the more the children were teased by their peers and graded unfairly by their teachers because of their ethnicity, the more they thought school was less important, less useful and felt less efficacious about school and valued school less. Also as expected, the more the children perceived discrimination, the more depressed and anxious they felt. Perceptions of discrimination negatively predicted self-regulation such that children who perceived more discrimination were less capable of regulating their attention and inhibitory control. In turn, children who were less able to self-regulate reported more psychological distress and lower academic attitudes. These results support the importance of supporting children's ethnic identities, being sensitive to perceived discrimination experiences, and working to offset depression and anxiety. Other important implications include using the school setting and including teachers in an active way to influence the children's environment.

KEYWORDS: Ethnic Identity, Perceived Discrimination, Academic Attitudes, Psychological Distress, Self-Regulation

Hui Chu

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ACADEMIC ATTITUDES: THE MEDIATING AND MODERATING ROLES OF
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Thesis

A thesis submitted in partial fulfillment of the
requirements for the degree of Master of Science in the
College of Arts and Science
at the University of Kentucky

By

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Lexington, Kentucky

2011

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TABLE OF CONTENTS

List of Tables	iv
List of Figures	v
Chapter One	
Introduction.....	1
Ethnic Identity and Perceived Discrimination as Predictors of Academic Attitudes	2
Psychological Distress as a Mediator between Ethnic Identity and Perceived Discrimination and Academic Attitudes	4
Self-regulation as a Moderator between Perceived Discrimination and Psychological Distress	7
Context of Current Study	8
Overview of Current Study and Summary of Hypotheses.....	10
Chapter Two	
Methods.....	11
Participants.....	11
Procedures.....	12
Measures	12
Ethnic identity.....	12
Perceptions of discrimination	13
Self-regulation.....	13
Psychological distress	14
Academic attitudes.....	14
Chapter Three	
Results.....	16
Preliminary Data Preparation.....	17
Ethnic Identity and Academic Attitudes: A Mediated Model with Psychological Distress as a Mediator	18
Perceived Discrimination and Academic Attitudes: A Mediated Moderation Model with Psychological Distress as a Mediator and Self-Regulation as a Moderator.....	20
Alternative Model	25
Chapter Four	
Discussion.....	26
Limitations and Future Directions	33
References.....	36
Vita.....	51

LIST OF TABLES

Table 1, Means, Standard Deviations and Intercorrelations for Observed Variables.....35

LIST OF FIGURES

Figure 1, Conceptual Model	2
Figure 2, Mediation Model: Psychological Distress as a Mediator between Ethnic Identity and Academic Attitudes	19
Figure 3, Mediated Moderation Model: Psychological Distress as a Mediator and Self- Regulation as a Moderator	23
Figure 4, Alternate Theoretical Model: Dual Process with Psychological Distress and Academic Attitudes as the Outcomes through Self-Regulation	25

Chapter One

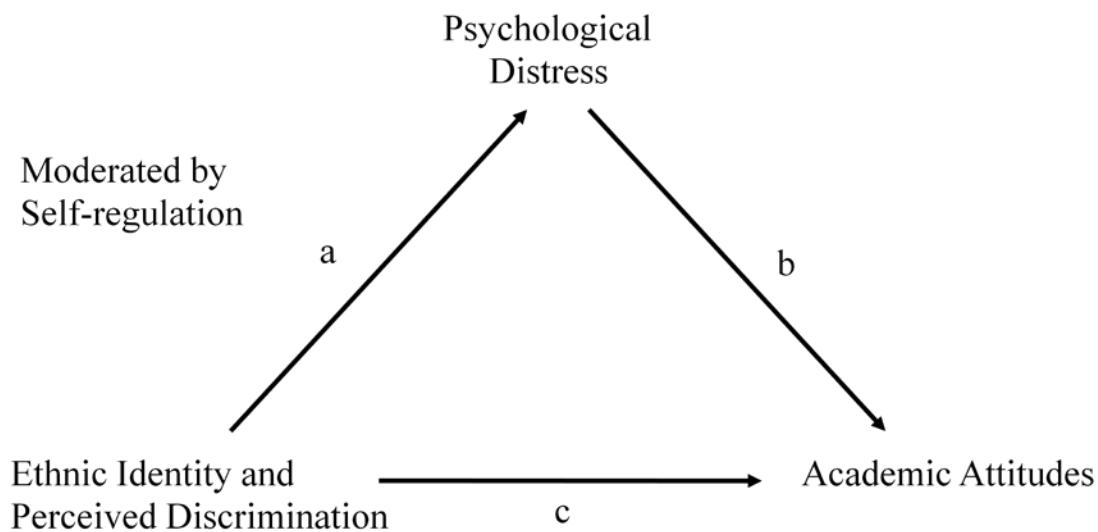
Introduction

The number of children of immigrant families in the United States is rapidly increasing. Consequently, there has been a recent call for research on their experiences (Hernandez & Charney, 1998; Hernandez, Denton & Macartney, 2008). Immigrant children, particularly those from Mexico, face struggles that native-born children do not. For example, approximately 40% of first-generation Mexican immigrant students drop out of high school, compared to 9% of White students (Hernandez, Denton & Macartney, 2008). Despite this large achievement gap, the academic engagement and achievement of first- and second-generation Latino immigrant children in predominantly European American communities has been understudied. Furthermore, very little research has been done examining academic predictors with elementary school children even though research has indicated that children in elementary school not only perceive ethnic discrimination (Brown, 2006) but also think about their ethnicity (Turner & Brown, 2007). This thesis addresses the deficiency in research by looking at factors that put immigrant elementary children at risk for academic disengagement (such as ethnic discrimination by peers and teachers, and psychological distress) and resilience factors that promote academic engagement (such as the development of a positive ethnic identity and self-regulation).

This thesis has three research questions. The first research question addresses whether ethnic identity is positively associated with academic attitudes, and perceived discrimination is negatively associated with academic attitudes (see Figure 1 below, path *c*). The second research question addresses whether psychological distress mediates the

links between ethnic identity and perceived discrimination and academic attitudes (Figure 1, path *a* and *b*). The third research question addresses whether self-regulation moderates the relationship between perceived discrimination and psychological distress (see Figure 1, path *a*). In other words, the study examines whether self-regulation buffers the negative influences of perceived discrimination on psychological distress. The basis for each research question is outlined below.

Figure 1. *Conceptual Model*



Ethnic Identity and Perceived Discrimination as Predictors of Academic Attitudes

Research has shown that both ethnic identity and perceived discrimination are directly associated with academic outcomes (see Figure 1, path *c*). Ethnic identity is defined as “that part of an individual's self-concept which derives from their knowledge

of their membership in a social group (or groups), together with the value and emotional significance attached to that membership" (Tajfel, 1981, p. 255). Positive ethnic identities have been shown to be positively associated with academic outcomes. For example, Latino students with a solid and positive evaluation of their home culture were shown to have higher academic performances than students who had a less solid and positive evaluation of their home culture (Zarate, Bhimji, & Reese, 2005). Other research has linked positive and/or central ethnic identities of immigrant children with their academic motivation (Pfeifer et al., 2007) and their positive attitudes about education (Fuligni, Witkow, & Garcia, 2005). Regardless of ethnic background, students whose ethnic identity was a central part of their self-concept reported enjoying school more, found it more interesting, and believed that their schools valued and respected them more than students with less central ethnic identities (Fuligni et al., 2005). Thus, in the current study, it was hypothesized that students with more central, positive ethnic identities would have more positive academic attitudes than students with less central ethnic identities.

Research has also linked perceived discrimination to academic attitudes. Unlike ethnic identity, which is positively associated with academic outcomes, perceived discrimination is negatively associated with academic outcomes. On average, African American and Latino adolescents perceive discrimination by teachers to occur approximately a couple times a year (Fisher et al., 2000; Wong, Eccles, & Sameroff, 2003). Specifically, African American and Latino adolescents reported that they had been graded unfairly, discouraged from joining advanced level courses and disciplined wrongly by teachers because of their ethnicity (Fisher et al., 2000). Further, perceptions

of discrimination at school predicted adolescents' devaluing of school (Wong, et al., 2003), disengagement from school (Katz, 1999), and dropping out (Wayman, 2002). Faircloth and Hamm (2005) found that perceiving peer and teacher ethnic discrimination contributed to Latino students' reduced sense of belonging at school, and this was in turn associated with reduced academic performance. In the current study, it was hypothesized that students who perceived more discrimination from peers and teachers would have more negative attitudes towards academics than students who perceived less discrimination.

Psychological Distress as a Mediator between Ethnic Identity and Perceived Discrimination and Academic Attitudes

Not only are ethnic identity and perceived discrimination directly associated with academic attitudes, previous research suggests that they may be indirectly associated with academic attitudes via their relationship with psychological distress (see Figure 1). This mediating relationship is supported by two different lines of research. First, research has shown that both ethnic identity and perceived discrimination are associated with psychological distress (path *b*). For example, ethnic identity is negatively associated with psychological distress. Ethnic identity has been associated with (a) fewer depressive symptoms and better mood among Chinese American adolescents and college students (Pahl & Way, 2006; Yip, 2005), (b) increased general well-being among Chinese American adolescents (Fuligni, Yip, & Tseng, 2002), and (c) greater feelings of happiness among diverse ethnic minority adolescents (Greene et al., 2006; Kiang et al., 2006; Romero & Roberts, 2003; Wong et al., 2003). It has been suggested that feeling a

sense of belonging to a positively-valued ethnic group helps protect individuals from both minor daily hassles (Fuligni et al., 2002) and major life stressors (Kiang et al., 2006).

In contrast, perceiving ethnic discrimination is positively associated with psychological distress. For example, perceiving ethnic discrimination has been linked to (a) greater risks of depression (e.g., Greene et al., 2006; Nyborg & Curry, 2003; Simons et al., 2002), (b) lower self-esteem (e.g., Greene et al., 2006; Rahimi & Fisher, 2002; Nyborg & Curry, 2003; Szalacha et al., 2003a), and (c) increased substance use (Gibbons et al., 2007). If perceived discrimination is assessed as negative and hurtful, adolescents experience anger, frustration, depression, and a lack of belonging (Padilla, 2008). In addition, short-term longitudinal research with middle school students over an 18-month period indicated that perceived discrimination was predictive of declines in psychological and academic functioning (Wong et al., 2003). Similar findings emerge in elementary school. Hispanic and African-American elementary children who were the targets of ethnic discrimination were more likely to exhibit depressive symptoms, fear of negative evaluation, social avoidance, and loneliness than children who had experienced lower levels of discrimination (Storch, Phil, Nock, Masia-Warner & Barlas, 2003). Furthermore, Coker and colleagues (2009) found that Hispanic fifth-graders from 3 U.S. metropolitan areas (i.e., Los Angeles, Houston, and Birmingham) who perceived ethnic discrimination, the majority of which experienced it at school, were more likely to have symptoms of all four mental health conditions measured (i.e., depression, attention deficit hyperactivity disorder, oppositional defiant disorder, and conduct disorder) than other Hispanic students who did not report perceived discrimination.

The second component of the mediating relationship is also supported by previous research, which has shown that psychological distress is negatively associated with academic attitudes (see Figure 1, path b). Previous studies indicate that the higher one's psychological distress, the lower the academic valuing and achievement; conversely, the lower one's psychological distress, the higher the academic valuing and achievement. Adolescents with major depressive disorder (MDD), often comorbid with anxiety, compared to those without MDD, had lower academic achievement ratings and were more likely to have difficulties with reading, spelling and math (Puig-Antich et al., 1993). In a longitudinal study with undergraduate students in the United Kingdom, depression and anxiety predicted a decrease in exam performance from the first to the second year (Andrews & Wilding, 2004). Correlational findings indicate that Hispanic 9th grade students, who self-reported high levels of depressive symptomatology and anxiety, were more likely to have lower grades, and perceived themselves to be less cognitively, socially, physically and globally competent (Alva & Reyes, 1999). In an even younger sample, 5th and 6th graders who had higher depression and anxiety, compared to those with lower depression and anxiety, had lower mastery orientation (i.e., lower valuing of the importance of learning and less desire to improve and understand material; Sideridis, 2005).

Taken together, these lines of research indicate that, not only do ethnic identity and perceived discrimination directly predict academic outcomes, but they also predict psychological distress. Psychological distress, in turn, predicts academic attitudes. In the current study, psychological distress will be assessed by both anxiety and depression measures because the high correlation between them suggests frequent co-morbidity

(Clark, Steer, & Beck, 1994; Farmer, 1998; Korobkin, Herron, & Ramirez, 1998). It was hypothesized that ethnic identity would be associated with lower psychological distress (Figure 1, path *b*), which in turn would be associated with higher academic attitudes (Figure 1, path *c*). Further, it was hypothesized that perceived discrimination would be associated with higher psychological distress, which in turn would be associated with more negative academic attitudes.

Self-regulation as a Moderator between Perceived Discrimination and Psychological Distress

Although perceived discrimination has been linked to psychological distress in previous research, potential moderators of that link have not been explored. One potential moderator is cognitive and emotional self-regulation. Self-regulation (*cf.* self-control) is defined as the ability “to alter one’s own behavior, including one’s thoughts, feelings, actions, and other responses” (Baumeister et al., 1998, pg 117). Emotion self-regulatory responses start to unfold in early childhood, and are relatively stable over time (Hay & Forrest, 2006; Mischel, Shoda, & Peake, 1988; Shoda, Mischel, & Peake, 1990; Tangney, Baumeister, & Boone, 2004). Individual differences in self-regulation seem to be related to differences in youths’ temperament, specifically their ability to focus their attention and their inhibitory control (Capaldi & Rothbart, 1992).

In an instance of discrimination, an individual will likely experience negative affect immediately after the negative comment or rejection. The ability to regulate these first negative thoughts and feelings is likely important in reducing the more lasting negative outcomes such as depression and anxiety (Kocovski & Endler, 2000). Indeed, previous research suggests that low self-regulatory capabilities following stressors are

associated with greater psychological distress and maladjustment (Hutchinson et al., 1998; Kocovski & Endler, 2000). Individuals low in self-regulatory capabilities tend to have more social anxiety and depression (Kocovski & Endler, 2000). Furthermore, impulsive children and adolescents who have difficulty regulating negative emotions tend to be more depressed and have more suicide ideation than their non-impulsive peers (Hutchinson, Patock-Peckham, Cheong, & Nagoshi, 1998). Research with preschool-aged children found that, following a situation that elicited negative affect, children with lower self-regulatory capabilities had more difficulty disengaging their attention from the source of their distress and were less likely to use effective coping skills, such as active self-distraction (Silk et al., 2006).

Although not addressed in previous research, it seems likely that children who experience discrimination – and the subsequent negative affect – will be more likely to be depressed or anxious if they are unable to regulate their emotions (e.g., by disengaging their attention from negative encounter). Therefore, in the current study, it was hypothesized that self-regulation would moderate the relationship between perceived discrimination and psychological distress. Specifically, it was hypothesized that children with better self-regulation would be better able to regulate and cope with their cognitions and emotions following discrimination, and thus would have lower psychological distress, than children with lower self-regulation.

Context of Current Study

The current study is focused on perceptions of discrimination and ethnic identity of immigrant children. The majority of immigrants, most frequently immigrating from Mexico and Central America, are broadly identified as Latino or Hispanic and are the

largest and fastest growing immigrant group in the United States. According to the 2000 census, Hispanics made up nearly 14% of the legal U.S. residents (Marotta & Garcia, 2003). Furthermore, since 2000, one of every two individuals added to the U.S. population has been Hispanic (U.S. Census Bureau; Ramirez & de la Cruz, 2003). This increase includes a large percent of the younger population, with nearly 40% under the age of 20 (Ramirez & de la Cruz, 2003). Specifically, over 19% of all students enrolled in Grades K–12 are Latino (NCES, 2005) and represent the fastest growing group of students in elementary and secondary schools in the United States (Ruiz-de-Velasco & Fix, 2000). The differences in educational outcomes, such as lower specific academic skills and lower educational aspirations, between first-, second-, and third-generation Latino children and native-born European American children have been widely documented (e.g., Flores, 2007; Keith, 1999; Kao & Tienda, 1998; Reardon & Galindo, 2007).

Furthermore, recent Census data has indicated that more and more Hispanic individuals have been immigrating to nontraditional destinations that were previously not home to large immigrant communities (Marotta & Garcia, 2003). Thus, this study focused on immigrant children in a midsized Upper South community, instead of a traditional gateway community (where most of the research is done) such as Miami, New York, Chicago, or Los Angeles (Hernandez et al., 2008). Because newcomer children in this particular region are among the first wave of immigrants in their schools, they may face unique challenges to their academic success. These children are entering school systems that have been, until recently, predominately European American and African American which would influence their experiences with ethnic discrimination from their

peers and teachers, and difficulties maintaining positive ethnic identities (Perreira et al., 2010).

Overview of Current Study and Summary of Hypotheses

The current study sought to contribute to the limited research on discrimination experiences of school-age Latino children in a predominantly European American community. This study examines children's perceptions of ethnic discrimination by peers and teachers and the positivity and importance of their ethnic identity. First, it was hypothesized that ethnic identity would be positively associated with children's academic attitudes. Second, it was predicted that perceived discrimination would be negatively associated with academic attitudes. Third, it was hypothesized that the link with both ethnic identity and perceived discrimination to academic attitudes would be partially mediated by their link to psychological distress (i.e., depression and anxiety). Finally, it was hypothesized that the association between perceived discrimination and psychological distress would be weaker among children with greater self-regulation.

Chapter Two

Methods

Participants

Participants were 152 children (68 girls, 84 boys), of which 82 were third graders and 70 were fourth graders (ages 8-11, $M = 9$ yrs, $SD = 10$ months) from 19 elementary schools. All children were identified by the school as “Hispanic,” and included 33% first-, 57% second-, and 10% third- generation immigrants primarily from Mexico ($n = 142$; 10 were from Central and South America).

The sample was drawn from a moderate-sized city in the Upper South that is 81% European American, 14% African American, and 5% Latino. The community is in a state that has seen a 235% increase in the Latino population since 1990, the tenth largest increase in the U.S. (Schirmer; Kentucky Long-Term Policy Research Center). The school district consists of 35,429 students from 49 schools (32 elementary schools, 12 middle schools, and 5 high schools), with 2,137 students are enrolled in English as a Second Language. Of the 19 participating schools, 1 is predominantly Latino, 4 are predominantly African American, 13 are predominantly European American, and 1 is ethnically diverse (with roughly equal proportions of European American, African American, and Latino students). Thirteen schools in the district did not participate because they had fewer than five Latino third or fourth graders. There was a high correlation between the percentage of children at each school who qualified for free/reduced lunch and the percentage of Latino students at the school ($r = 0.73$, $p < .01$). At the predominantly Latino school, 94% of children qualified for free/ reduced lunch.

Procedures

Consent forms were passed out to all children during school hours. All consent forms were in English and Spanish. Only those children who returned signed parental consent forms were approached about the study. Children were told about the nature of the study and told about the procedure in an assent form.

The research procedures were conducted at the schools. All activities took place during normal classroom time, at times designated by the teacher, so that children did not miss important academic activities. The questionnaires were read to each individual participant and their answers were recorded by the trained research assistants. Students received a \$15.00 gift certificate at the end of the study.

Measures

Ethnic identity. Based on Brown et al. (2010) and Pfeifer et al. (2007), children were read a paragraph describing what ethnicity is and then asked to provide a self-label of their own ethnicity. The paragraph read: “In the United States, people come from many different countries and cultures, and there are many words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Hispanic, Latino, or Mexican American, Black or African American, Asian American, Indian, Caucasian or White, and many others. These questions are about your ethnicity or your ethnic group and how you feel about it. Please fill in: In terms of ethnic group, I consider myself to be _____. Using their own label (most commonly used labels: Mexican [42%], Mexican American [19%], Hispanic [19%], Latino [13%]), children were asked questions to assess their affect and pride about their ethnic group, as well as the importance of their ethnic identity to their sense of self. These five items

asked children to report whether (a) “I am happy to be [ethnicity],”(b) “I believe being [ethnicity] is an important part of myself,”(c) “I am proud to be [ethnicity],” (d) “I like being [ethnicity],” (e) “I feel that being [ethnicity] is a big part of who I am.” Children responded to these five items on a 4-point scale ranging from (1) not at all true to (4) very true. Higher scores indicating a more positive and important ethnic identity ($M = 3.78$, $SD = .41$; $\alpha = .74$).

Perceptions of discrimination. Adapted from Phinney, Madden, and Santos (1998), children were asked how often teachers and other students treat them unfairly or negatively because of their ethnicity. The peer-based questions focused on their experiences with peer teasing and/or exclusion from activities or play groups. Examples include: “How often are you made fun of, or called names by kids in your school because you are [ethnicity]?,” and “How often do kids in your school not pay attention to you because you are [ethnicity]?” The teacher-based questions focused on their experiences with differential treatment in the classroom. Examples include: “How often do you get in trouble from your teachers because you are [ethnicity]?,” and “How often do you get graded unfairly because you are [ethnicity]?” Children responded to five items about peer discrimination ($M = 1.54$, $SD = .62$; $\alpha = .73$) and five items about teacher discrimination ($M = 1.31$, $SD = .48$; $\alpha = .77$) using a 4-point scale ranging from (1) never to (4) a lot, with higher numbers indicating greater perceived discrimination.

Self-regulation. Self-regulation was measured with two subscales (Attention and Inhibitory Control) from the Early Adolescent Temperament Questionnaire-Revised (EATQ-R) designed for 9-15 years old (Capaldi & Rothbart, 1992). Attention refers to the capacity to focus and shift attention when desired, and Inhibitory Control refers to the

capacity to plan and suppress inappropriate responses. Attention was measured with six items, such as “I pay close attention when someone tells me how to do something,” and “I am good at keeping track of several different things that are happening around me.” Inhibitory control was measured with five items, such as “It’s easy for me not to open presents before I’m supposed to,” and “When someone tells me to stop doing something, it is easy for me to stop.” Children responded to items on a 4-point scale ranging from (1) not at all true to (4) very true, with higher scores indicating more self-regulation ($M = 2.85$, $SD = .49$; $\alpha = .54$).

Psychological distress. Depression and anxiety were measured with two subscales from the Behavior Assessment System for Children (BASC-2) designed for children ages 8-11. Anxiety (i.e., the tendency to be nervous, fearful, or worried about real or imagined problems) was measured with items such as “I worry but I don’t know why,” and “I worry about what is going to happen.” Depression (i.e., excessive feelings of unhappiness, sadness, or stress) was assessed with items such as “No one understands me,” and “I feel sad.” Children responded, using a 4-point scale ranging from (1) never to (4) almost always, to nine items about anxiety ($M = 2.11$, $SD = .64$; $\alpha = .78$) and nine items about depression ($M = 1.71$, $SD = .58$; $\alpha = .79$), with higher numbers indicating higher psychological distress (i.e., more anxiety and more depression).

Academic attitudes. Based on Fuligni et al. (2005), children were asked about their attitudes regarding school. Specifically, they were asked about the importance of school, the utility of school, and their academic self-efficacy and valuing. Importance questions included items such as “It is important that I do well in school,” and “It is important that I graduate from high school.” Utility questions asked about the usefulness

of academic success, such as “How much is doing well in school is the best way for you to succeed in life?” Academic self-efficacy was assessed by asking “How good are you (a) at school in general, (b) in math, (c) in science, and (d) in English/literature?” Academic valuing questions included items such as “Is school interesting?” and “Do you like working on school?” Children answered these 22 items on a 4-point scale ranging from (1) not at all true or not much to (4) very true or very much, with higher numbers indicating higher regard for academic ($M = 3.40$, $SD = .29$; $\alpha = .72$).

Chapter Three

Results

Means, standard deviations, and correlations for all variables are presented in Table 1. Data analysis was conducted using structural equation modeling (SEM) with the software package AMOS 5 (Arbuckle & Wothke, 2001). Two primary models were examined: one involving ethnic identity and one involving perceived discrimination. The first model, a mediation model (see Figure 2), was analyzed to examine whether (a) ethnic identity predicted academic attitudes and (b) psychological distress mediated ethnic identity and academic attitudes. This model included one exogenous variable, ethnic identity (observed), and two endogenous variables, academic attitudes (observed) and psychological distress (latent). Psychological distress consisted of two observed variables, anxiety and depression.

The second model, a mediated moderation model (see Figure 3), was analyzed to examine whether (a) perceived discrimination predicted academic attitudes, (b) psychological distress mediated perceived discrimination and academic attitudes, and (c) self-regulation moderated the effects of perceived discrimination on psychological distress. This model included two exogenous variables, perceived discrimination (observed) and self-regulation (observed), and two endogenous variables, academic attitudes (observed) and psychological distress (latent). The observed variable, total perceived discrimination consisted of averaging the two observed variables, discrimination by peers and discrimination by teachers. As in the first model, psychological distress consisted of two observed variables, anxiety and depression. To

examine moderation effects, there was an interaction term of self-regulation and perceived discrimination. The covariates (i.e., age, gender, and generational status) didn't have an effect on either model.

Preliminary Data Preparation

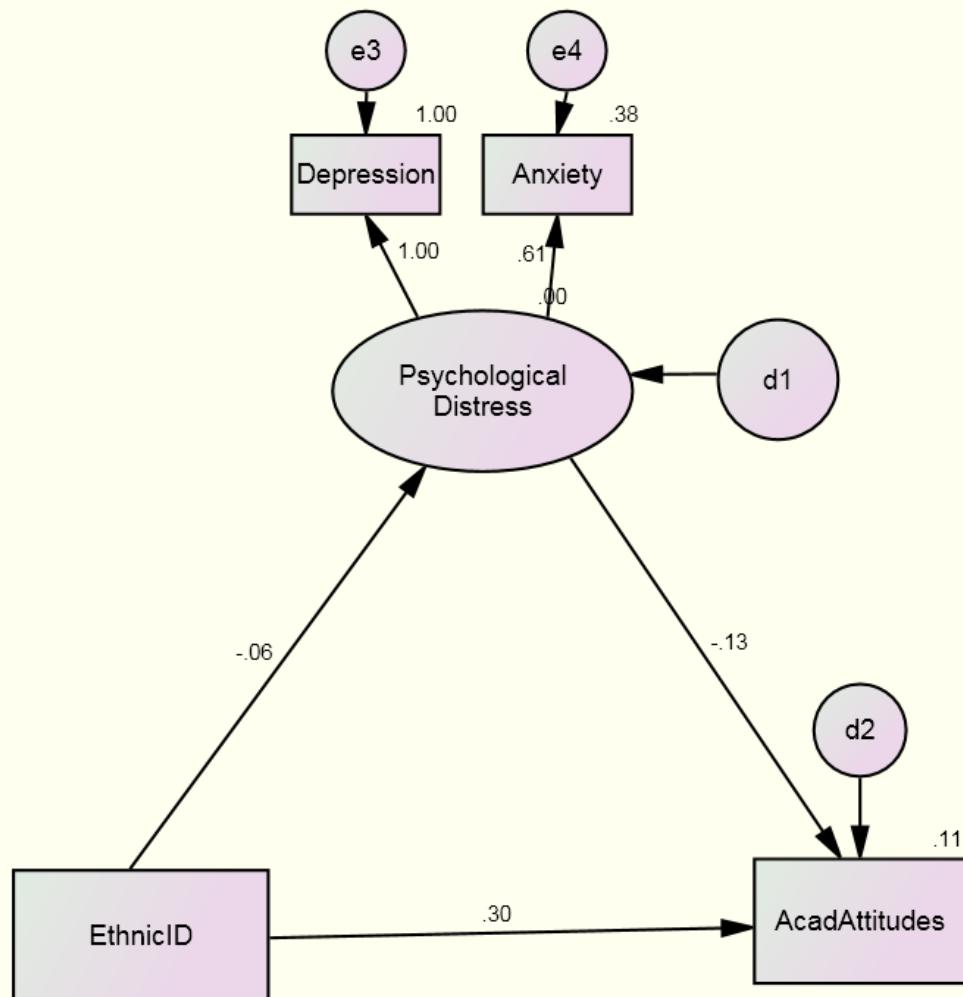
To check for normality, skewness and kurtosis values were examined by taking the skewness and kurtosis statistics divided by its standard error and ensuring they didn't exceed the criterion of ± 2 . The data reflected a positive skew and leptokurtosis (exceeded 2) for perceived discrimination by peers (5.23, 2.16) and teachers (7.23, 7.24). Normality issues are not surprising given that the perceived discrimination is not a normally distributed occurrence (students mostly answered "never" and "once or twice"). I corrected for this by using the asymptotically distribution free option in AMOS (Gold et al., 2002). The asymptotically distribution free criterion method yields a consistent estimated covariance matrix, yielding correct values of test statistics a means for obtaining parameter estimates, estimated standard errors, and statistics to evaluate model fit for non-normal data (Gold et al., 2002). To implement this option, the *missing at random* data had to be corrected with the common single imputation method. Specifically, an overall mean was computed and substituted for the missing data (Newman, 2003).

The data was also screened for outliers by first computing a Mahalanobis distance for each case. Using AMOS, the Mahalanobis scores (D^2) were examined, and revealed there were no outliers. To check for multicollinearity, variance inflation factor (VIF) values and tolerance values were examined. All values were in acceptable ranges.

*Ethnic Identity and Academic Attitudes: A Mediated Model with Psychological Distress
as a Mediator*

First the measurement model was fit to make sure the model was identified and had good fit. The model was identified with no errors. The model fit the data very well with $\chi^2(152) = 3.36$, $p = .16$, $\chi^2/\text{df} = 1.83$, Comparative Fit Index (CFI) = 0.94, Goodness of Fit Index (GFI) = 0.98, Standardized Root Mean Square Residual (SRMR) = 0.035 and Root Mean Square Error of Approximation (RMSEA) = 0.074 with a 90% Confidence Interval (CI) of 0.000-0.193. These indicate very good fit because all of them because they fit within the fit criteria of $\chi^2/\text{df} < 3$, CFI > 0.9 , GFI > 0.9 , SRMR < 0.08 and RMSEA < 0.08 . Next, I examined the hypothesized mediation model (see Figure 2 below with standardized estimates).

Figure 2. *Mediation Model: Psychological Distress as a Mediator between Ethnic Identity and Academic Attitudes*



As hypothesized, the paths from psychological distress to academic attitudes (see Figure 1, path c : $-.065, p = .075$) and ethnic identity to academic attitudes (see Figure 1, path c : $.211, p < .001$) were significant. Specifically, students who experienced more psychological distress had less positive academic attitudes. Also, students with more positive, important ethnic identities had more positive academic attitudes. The association between ethnic identity and psychological distress, however, was not significant ($-.095, p = .25$).

Using the Sobel test, the mediation model was found to be insignificant (test statistic = $-1.2, p = .22$). Specifically, contrary to the hypothesis, psychological distress did not mediate the link between ethnic identity and academic attitudes. When the regression coefficient of path c was compared to path c' , there was no difference in the significance. This indicated that, not only was there no mediation, there was no partial mediation. To verify these findings, another mediation analysis was conducted using the bootstrapping method. Bootstrapping resulted in a confidence interval of $-0.001 - 0.029$ reflecting a non-significance at $p = 0.185$. It is likely that there were no mediation effects because path a was not significant ($-0.095, p = 0.252$). Both methods indicated that psychological distress did not mediate the link between ethnic identity and academic attitudes.

Perceived Discrimination and Academic Attitudes: A Mediated Moderation Model with Psychological Distress as a Mediator and Self-Regulation as a Moderator

The measurement model fit the data well with $\chi^2(152) = 3.39, p = 0.495, \chi^2/\text{df} = 0.847$, CFI = 1.000, GFI = 0.985, SRMR = 0.0314 and RMSEA = 0.000, with 90% CI of

0.000-0.114. Next, I examined the hypothesized mediation model (as shown below with standardized estimates).

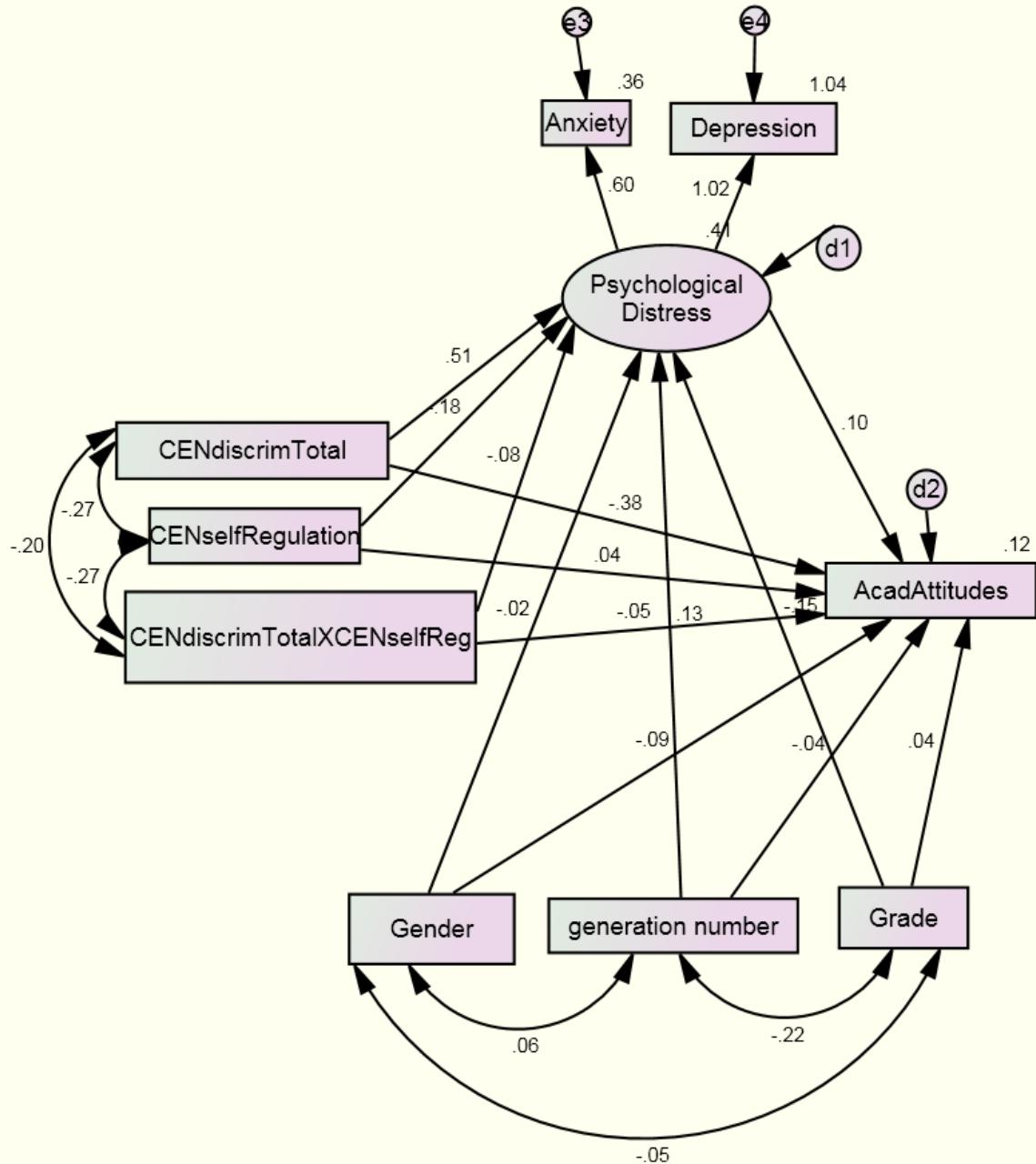
This mediated moderation model was examined to analyze whether (a) perceived discrimination predicted academic attitudes, (b) psychological distress mediated perceived discrimination and academic attitudes, and (c) self-regulation moderated the effects of perceived discrimination on psychological distress. As hypothesized, the path from perceived discrimination to academic attitudes (see Figure 1, path c : $-.25, p = .001$) was significant. Specifically, students who perceived more discrimination from their peers and teachers had more negative attitudes towards academics.

To address the next question, the mediation was analyzed. Using the Sobel test, the mediation model was found to be insignificant (test statistic = 1.2, $p = .19$). Specifically, psychological distress did not mediate the link between perceived discrimination and academic attitudes. To verify these findings, another mediation analysis was conducted using the bootstrapping method. Bootstrapping resulted in a confidence interval of $-.015 - .105$ reflecting a non-significance at $p = 0.244$. As hypothesized, the positive association between perceived discrimination and psychological distress was significant (see Figure 1, path a : $.44, p < .001$). Specifically, students who perceived more discrimination from their peers and teachers had lower levels of anxiety and depression. Although paths a and c were significant, path b was not. Contrary to hypothesis, psychological distress was not significantly associated with academic attitudes (see Figure 1, path b : $.08, p = .18$). Specifically, in the context of perceived discrimination, students who experienced higher levels of depression and anxiety do not have more negative attitudes towards academics. It seems as if

psychological distress is not a mechanism that perceived discrimination goes through to predict academic attitudes. It is likely that there were no mediation effects because path b was not significant (.08, $p = .18$). Both methods indicated that psychological distress did not mediate the link between perceived discrimination and academic attitudes.

Contrary to the prediction, self-regulation did not moderate the effects of perceived discrimination on psychological distress (-.07, $p = .63$). For those students who perceived discrimination, their depression and anxiety levels were not lowered by their ability to self-regulate. However, self-regulation was directly and significantly associated with psychological distress (-.16, $p = .008$). Specifically, students who were able to better self-regulate were less psychologically distressed.

Figure 3. Mediated Moderation Model: Psychological Distress as a Mediator and Self-regulation as a Moderator

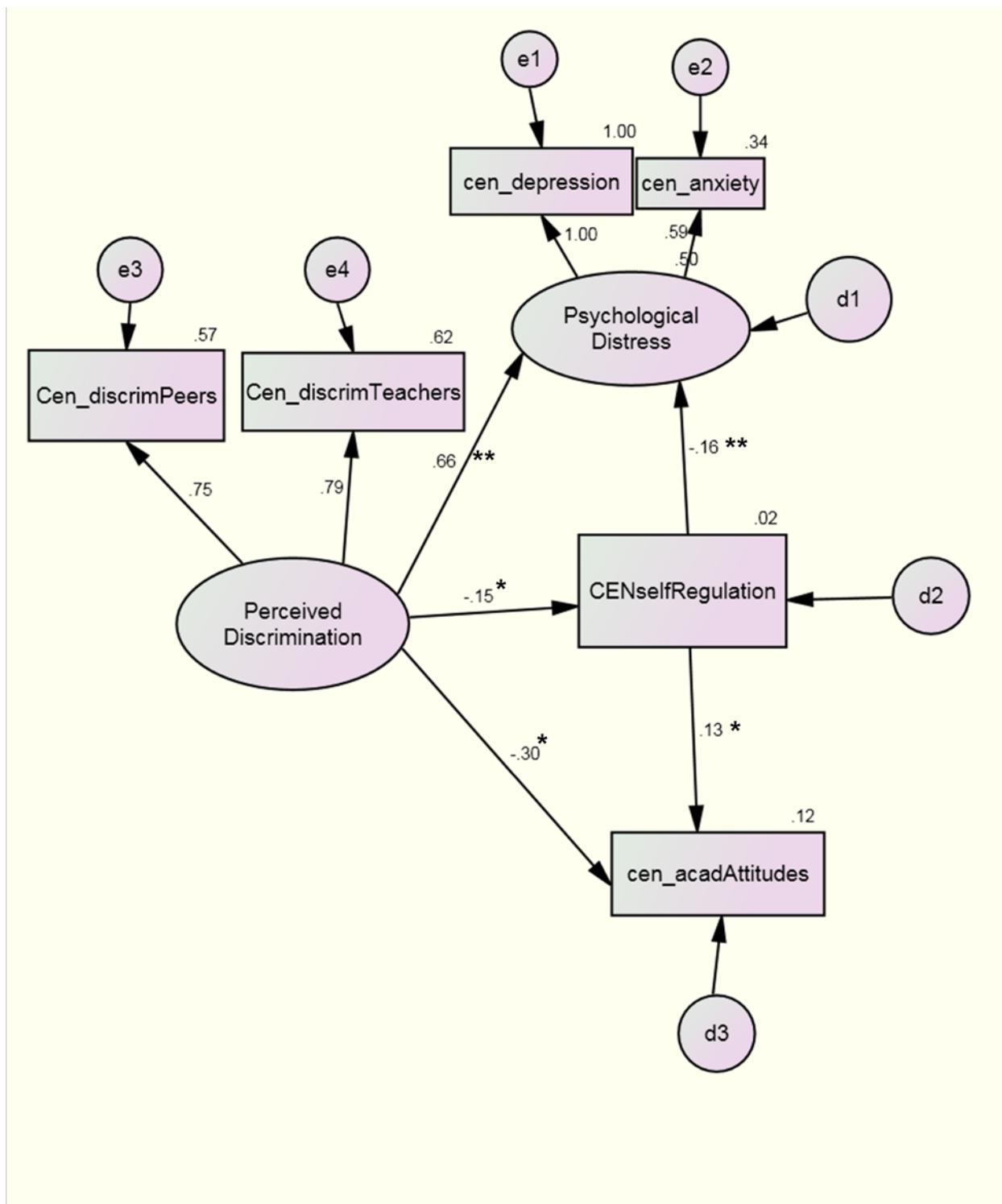


Alternative Model

Because the previous model indicated that self-regulation seemed to be related to psychological distress and discrimination, but in ways that were not previously predicted, an alternative model was explored post hoc. This model is illustrated in Figure 4 (shown below with standardized estimates). As before, this model included an exogenous variable, perceived discrimination (latent) and three endogenous variables, academic attitudes (observed), psychological distress (latent), and self-regulation (observed). As in the previous models, psychological distress consisted of two observed variables, anxiety and depression and total perceived discrimination consisted of the two observed variables, discrimination by peers and discrimination by teachers. The alternative model fit the data adequately with $\chi^2(152) = 15.9, p = 0.025, \chi^2/\text{df} = 2.282, \text{CFI} = .779, \text{GFI} = .952, \text{SRMR} = .0537$ and $\text{RMSEA} = 0.092$, with 90% CI of .03-.153.

In the alternative model, contrary to the previous models, psychological distress and academic outcomes were treated as two distinct outcomes. Perceived discrimination was directly associated with both psychological distress (.66, $p < .001$) and academic attitudes (-.30, $p = .002$). In addition, perceived discrimination was indirectly associated with psychological distress and academic attitudes through its link with self-regulation. Specifically, perceptions of discrimination negatively predicted self-regulation (-.154, $p = .081$), such that children who perceived more discrimination were less capable of regulating their attention and inhibitory control. In turn, children who were less able to self-regulate reported more psychological distress (-.16, $p = .018$) and lower academic attitudes (.127, $p = .085$).

Figure 4. Alternate Theoretical Model: Dual Process with Psychological Distress and Academic Attitudes as the Outcomes through Self-regulation



Chapter Four

Discussion

This thesis examined three main research questions. The first question assessed whether ethnic identity was positively, and perceived discrimination was negatively, associated with academic attitudes. As hypothesized, children who had stronger, more positive ethnic identities had more positive academic attitudes. This supports previous research (Sellers, Chavous, & Cooke, 1998; Spencer, Noll, Stolzfus, & Harpalani, 2001; Chavous et al., 2003; Oyserman, Harrison, & Bybee, 2001; Wong, Eccles, & Sameroff, 2003) and suggests that children who consider their ethnicity to be a central part of their self-concept also find school to be important, enjoyable, and valuable (Fuligni et al., 2005). Immigrant students from an ethnic minority group – who face negative stereotypes about their academic abilities and who are culturally distinct from the school's majority culture – may require more effort and motivation to value and excel in school relative to ethnic majority children (Fuligni, 1998; Fuligni, 2001). As suggested by Phinney (1990), valuing one's ethnic and cultural background can add meaning to one's individual goals and motivations. Thus, students who value their ethnicity and culture, despite the negative academic stereotypes, may be particularly motivated to excel at academics.

As hypothesized, the current study also found that children who perceived more peer and teacher discrimination had more negative academic attitudes. This finding is consistent with previous studies in which adolescents who perceived more teacher discrimination were more likely to be disengaged from school (Katz, 1999) and more likely to devalue school (Wong, et al., 2003). In addition, previous research has shown that children who are teased or picked on by their peers at school are more likely to do

poorly in school, have low self-esteem, and feel lonely than are children who are not victimized (Ladd, 1990; Wentzel & Asher, 1995). Discrimination by their peers and teachers appears to lead students to feel devalued as individuals and disconnected from school, thus promoting eventual academic disengagement (Eccles, 1993; Goodenow & Grady, 1993; Jessor et al., 1995; Wentzel, 1997). Future research should continue to explore the association between discrimination, ethnic identity, and academic attitudes. Not only has research shown perceived discrimination to relate to concurrent academic attitudes, it has also been shown to relate to later dropping out of school (Fine, 1991; Oakes, 1985; Rumberger, 1987, 1995). Further, Chavous and colleagues (2003) found that educational beliefs emphasizing the importance of school to future success and educational efficacy were related to high school completion. As research indicates that academic attitudes and achievement levels as early as first grade are related to educational outcomes in high school (Alexander et al., 1997; Huston & Ripke, 2006; Stipek, 2005), the elementary school-aged Latino students in this study who endorse less positive academic attitudes may also be at greater risk for dropping out in high school.

The second research question examined whether psychological distress was a mediator between ethnic identity and perceived discrimination and academic attitudes. Specifically, it was hypothesized that ethnic identity would be negatively associated with psychological distress, which in turn would be associated with more positive academic attitudes. Contrary to predictions, ethnic identity was not related to psychological distress. In other words, students' attitudes about their ethnicity were unrelated to their overall rates of depressed affect and anxiety. Likely, this was a result of students' exceedingly positive ethnic identities, and overall low rates of psychological distress. Future research

should explore whether other variables mediate the relationship between ethnic identity and academic attitudes (Schwartz, Zamboanga & Jarvis, 2007). For example, self-esteem has been linked to both ethnic identity (e.g., Phinney et al., 1997; Umana-Taylor, 2004) and academic outcomes (Lane, Lane, & Kyprianou, 2004), and may be an important mediating variable.

The current study also hypothesized that perceived discrimination would be associated with more psychological distress, which in turn would be associated with more negative academic attitudes. As with ethnic identity, psychological distress was not a significant mediator between perceived discrimination and academic attitudes. Specifically, when perceived discrimination was accounted for, psychological distress was not related to academic attitudes. This can be due to a moderating variable, making academic attitudes less significant when predicted by psychological distress. One such moderator could be social support. Students who have depression and anxiety from perceiving discrimination may not have less positive academic attitudes because they have social support as a buffer. Social support is defined as “one’s perceptions of supportive behaviors from individuals in his or her social network (e.g., parents or friends), that enhance functioning and/or may buffer him or her from adverse outcomes” (Malecki & Demaray, 2002; pg 376). Social support has been found to be a protective factor, for students in high risk settings or for students under stress (Becker & Luthar, 2002; Garmezy, Masten, & Tellegen, 1984; Luthar, 1991; Luthar, Cicchetti, & Becker, 2000).

There have been several studies regarding the buffering relationship between social support and academic achievement. For example, a study by Dubow and Tisak

(1989) investigated the role of social support for children under stress and found a relationship between social support and GPA. Additionally, Gillock and Reyes (1999) found a significant relationship between GPA and teacher support in a sample of tenth-grade, low-income, Mexican American students. Levitt, Guacci-Franco, and Levitt (1994) found a significant relationship between social support and standardized test scores in a sample of multi-ethnic (African American, Hispanic American, and White) students. These studies suggest that social support does indeed play a buffering, protective-stabilizing role (Luthar et al., 2000). That is, social support may act as a stabilizing factor for students so that if a student has adequate social support in his or her life, his or her academic achievement will be less likely to be affected by perceived discrimination or other risk factors. Thus, the finding of the insignificant mediation, specifically, the insignificant relationship between psychological distress and academic attitudes, could be due to a potential buffering effect of social support on the academic attitudes of students with depression and anxiety from perceiving discrimination. Specifically, lower academic attitudes may not be predicted by students with higher levels of psychological distress because they may have strong social supports in place to as a protective factor. Further research is necessary to explore this possibility.

The third research question in the current study asked whether self-regulation moderated the relationship between perceived discrimination and psychological distress. In other words, it was hypothesized that children who were good at regulating their cognitions and emotions would be less likely to show a link between their distress levels and their amount of perceived discrimination. The hypothesized model was not supported by the data. In an attempt to better understand the relationships between the variables, an

alternate model, driven by theoretically sound hypotheses, was conceptualized post hoc. This model suggests two distinct processes through which academic attitudes and psychological distress are predicted by discrimination. First, this model indicated that perceived discrimination directly predicted academic attitudes (as described above). Perceived discrimination also directly predicted psychological distress, as hypothesized. In contrast to the hypothesis that psychological distress mediated the link to academic attitudes, however, psychological distress seems to be a independent and distinct outcome variable. As students perceived more negative treatment by teachers and peers, they were more likely to be depressed or anxious. This main effect is likely mediated by a variable not captured in the current study (such as increased feelings of rejection).

In addition, perceived discrimination was indirectly associated with psychological distress and academic attitudes via self-regulation. Specifically, perceptions of discrimination negatively predicted self-regulation, such that children who perceived more discrimination were less capable of regulating their attention and inhibitory control. In turn, children who were less able to self-regulate reported more psychological distress (as predicted in the introduction) and lower academic attitudes.

There is a lack of research examining the finding that perceived discrimination is associated with poorer self regulation. However, there is research supporting perceived discrimination and rejection and/or social exclusion to be related (Schmitt et al., 2003; Barnes, et al., 2004; Cozzarelli & Karafa, 1998; Branscombe, et al., 1999) and rejection and /or social exclusion to be associated with poorer self-regulation (Baumeister, DeWall, et al., 2005; Trentacosta & Shaw, 2009; DeWall et al., 2008). Schmitt and colleagues (2003) argue that discrimination is associated with rejection because discrimination by

the mainstream implies to the minority that one's social identity is excluded from what is considered 'normal'. Furthermore, perceived discrimination may make it difficult to create meaningful social connections with members of the majority in many different types of situations, perpetuating the feeling of rejection. This association has been found empirically using a factor analysis of a perceived discrimination scale which revealed two subscales, unfair treatment and personal rejection (Barnes et al., 2004). Mellor (2004) addresses the lack of research of what happens with targets of prejudice by exploring responses from Indigenous Australians' experiences of racism. One of the common responses involved self-regulation (i.e., efforts aimed at managing internal states by controlling or containing their reactions). Research has shown that when individuals face social exclusion they have lower self-regulatory responses or lower capacities to change oneself and one's responses. Baumeister, DeWall, and colleagues (2005) found that among college students, experimentally-manipulated social exclusion or rejection led to impairment of self-regulation. Previous research has shown that emotional distress leads to self-regulation failure (for example, Grilo et al., 1989; Keinan, 1987; Rosenthal & Marx, 1979; Sayette, 1993; Tice et al., 2001; Wegener & Petty, 1994). With previous research suggesting that there is an association with perceived discrimination and rejection and/or social exclusion, it seems as if the research supporting rejection and/or social exclusion to be associated with poorer self-regulation to support the finding from the alternate model that perceived discrimination is associated with poorer self-regulation.

The finding indicating that perceived discrimination predicts lower academic attitudes is disturbing since positive attitudes toward school have been identified as a crucial variable in maintaining a high level of academic achievement (Connell, Spencer,

& Aber, 2004; Peet et al., 1997; Steinberg et al., 1992). Previous research also supports the findings that self-regulation is related to academic attitudes. For example, self-regulation has emerged as a crucial skill that predicts children's early school success (Howse, Lange, Farran, & Boyles, 2003, Duncan et al., 2007; McClelland et al., 2006; Vitaro, Brendgen, Larose, & Trembaly, 2005). Poor self-regulation has been linked to high rates of expulsion, most dramatically in preschool classrooms (Gilliam & Shahar 2006). Specifically, inhibitory and attention control has been linked to achievement prior to formal schooling (Blair, 2002; Blair & Razza, 2007; McClelland, Cameron, Connor, et al., 2007) and throughout elementary school (Alexander, Entwistle, & Dauber, 1993; McClelland, Morrison, & Holmes, 2000; McClelland, Acock, & Morrison, 2006). In one study, kindergarteners with better attention scored significantly higher than those with poorer attention skills on reading and math achievement tests (Howse, Lange, Farran, & Boyles, 2003). Self-regulation seems to be a lasting predictor and continues to be an important factor throughout adolescence. For example, Duncan and colleagues (2007) found that after early math achievement, preschool levels of attention were the strongest predictors of math and reading achievement measured up to 9 years later. Furthermore, a study with college students who indicated that they would delay gratification (i.e., better ability to self-regulate) believed they were more likely to be successful, consider the course content more valuable, challenging and interesting, and perform well in the course (Bembenutty & Karabenick, 1998). These studies support the alternate model's finding of children who were less able to self-regulate reporting lower academic attitudes.

The current study's population of socioeconomic disadvantaged Latino children in particular may be at risk of developing poor behavioral regulation. Specifically,

children from disadvantaged backgrounds have been shown to have poorer self-regulation and academic achievement than those not experiencing such risks (Fantuzzo et al., 2005; Howse, Lange, et al., 2003; McClelland et al., 2000; Wanless, Sektnan, & McClelland, 2007). For example, children from disadvantaged backgrounds were less able to regulate their attention in goal-directed tasks than their more advantaged peers (Howse et al., 2003). One study found that disadvantaged Spanish-speaking children had significantly poorer behavioral regulation in preschool and kindergarten than English-speaking children had (Wanless et al., 2007). One explanation for this may be because Latino children may be more exposed to stressful situations associated with being a member in an underrepresented, historically disadvantaged ethnic minority group (Morales & Guerra, 2006) which is associated with increased perceived discrimination. Baumeister and colleagues (2007) found that stressful situations require constant attention to and maintenance of intense emotional information, leaving little opportunity for the intellectual exploration and learning.

Limitations and Future Directions

One limitation of this study is that the complexity of the structural equation models decreased the power of the study. In the future, studies including different ethnic compositions at different schools should use hierarchical linear modeling, where the participants are nested in their schools and classrooms to examine the effects of their environments. Another limitation is that it is a cross-sectional design which does not allow for the determination of the directionality of these factors. In addition, the findings of the current study do not generalize to children of other ages and ethnicities. Furthermore, since the study was done in a mid-sized predominantly European American

area without a comparison of Latino students in a big metropolitan area, the results do not illustrate the unique experiences of newcomer children. Future directions should expand the age groups and include a longitudinal design with multi-site studies.

The findings of the present study add to the literature on the predictors and outcomes of immigrant children in middle childhood. Garcia Coll and Marks (2009) note the fact that research on the psychosocial and academic orientation of children of immigrants has been conducted almost exclusively with adolescents, leaving many unanswered questions about developmental processes before this age. More research in this field is crucial in creating a wider research base when implementing interventions. Future studies should continue to further examine variables in not only Microsystems such as the classroom, peers and family socialization but also at the individual level such as personality traits including motivation and self-actualization. Furthermore, additional research should explore factors in the child's exosystem including school variables such as school's valuing of diversity and community such as residential segregation. In summary, the findings of the present study provide initial evidence of the various and complex ways that variables play as mediators and moderators in multidimensional relationships.

Table 1
Means, Standard Deviations and Intercorrelations for Observed Variables

<i>Measure</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Academic attitudes	3.40	.286						
2. Ethnic identity	3.78	.409	.303**					
3. Self-regulation	2.91	.414	.299**	.253**				
4. Peer disc	1.54	.623	-.182*	-.174*	-.271**			
5. Teacher disc	1.27	.482	-.278**	-.154	-.081	.515**		
6. Depression	1.71	.577	-.150	-.113	-.309**	.554**	.472**	
7. Anxiety	2.12	.636	-.156	.034	-.289**	.282**	.265**	.589**

Note: * $p < .05$, ** $p < .01$

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Education

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Professional Positions

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Society for Research on Child Development Junior Mentor	2011
American Psychological Association Graduate Students Campus Representative	2010-2012

Scholastic and Professional Honors

National Science Foundation (NSF) Graduate Research Fellowship	2010
Development Area Graduate Student Award	2011

Professional Publications

Brown, C., Bigler, R., & Chu, H. (2010). An experimental study of the correlates and consequences of perceiving oneself to be the target of gender discrimination. *Journal of Experimental Child Psychology*, 107(2), 100-117.

Presentations

Chu, H. & Brown, C.S. (2011). *The Effects of Discrimination on Academic Outcomes in a Predominantly European-American Area: Elementary Latino Students*. Poster presented at Society for Research on Child Development; Montreal, Canada.

Brown, C.S. & Chu, H. (2011). *How Discrimination and Ethnic Identity Predict the Academic Attitudes and Performance of Latino Children in a White Community*. Paper presented at Society for Research on Child Development; Montreal, Canada.

Chu, H. & Brown, C.S. (2010). *Ethnic identity and Perceived Discrimination as Predictors of Academic Outcomes: The mediating and moderating roles of psychological well-being and emotion regulation*. Poster presented at American Psychological Association; San Diego, CA.

Chu, H. & Brown, C.S. (2010). *Ethnic identity and Perceived Discrimination as Predictors of Academic Attitudes: The mediating and moderating roles of psychological distress and self-regulation*. Poster presented at Conference on Human Development; New York, NY.

Chu, H. & Brown, C.S. (2009). *Important Factors in Academic Outcomes of Immigrant Children*. Poster presented at Society for Research in Child Development; Denver, CO.

Chu, H. & Brown, C.S. (2006). *Acculturation and Ethnic Identities among Korean American Youth*. Paper presented at Psychology Undergraduate Research Conference, The University of California, Los Angeles.