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The Role of Social Context on Future Orientation and College Preparatory Behaviors Among Texas High School Students: Latino-White Differences

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The Role of Social Context on Future Orientation and College Preparatory Behaviors Among Texas High School Students: Latino-White Differences

by

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The Role of Social Context on Future Orientation and College Preparatory Behaviors Among Texas High School Students: Latino-White Differences

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Prior research shows a positive correlation between years of education and overall health. Historically, Latinos have had lower levels of educational attainment than Whites and other ethnic groups in the United States. The current study explored how a student's social context in sophomore year is associated with his/her college aspirations and college expectations, and how these factors then influence subsequent college preparatory behaviors and college application in senior year. Differences in the role of social context were explored in Latino students and White students. Secondary data analysis was conducted using the Texas Higher Education Opportunity Project (THEOP) dataset, which provided longitudinal data for 2,875 Texas high school students. Hopes and Fears theory of future orientation was used as the guiding framework for the analysis of future orientation. Bivariate and multivariate logistic regression analyses were used to address the research questions. College preparatory behaviors and college application at senior year had the strongest associations with the social contextual variables at sophomore year that were most proximal to the students, namely family and friends. For all students,

grade point average, graduation track, parent education in sophomore year were all significant predictors of college preparatory behaviors and college application in senior year. Parental encouragement to go to college in sophomore year was a significant predictor of college preparatory behaviors and college application at senior year among Latino students, but not among White students. Conversely, having more than three friends who planned to attend college or having a sibling who dropped out of high school was predictive of college preparatory behaviors and college application among White students, but not among Latino students. Implications for interventions and future research are discussed.

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Introduction

There are now over 52 million Latinos living in the US, which represents 16.7 percent of the entire US population (US Census Bureau, 2012). Latinos accounted for more than half of the total population growth in the US from 2000 to 2010 (Passel et al., 2011). In New Mexico, Texas, California, Arizona and Nevada, five of the twelve states where Latinos make up the largest share of the population, more than one in four residents is Latino (Passel et al., 2011). A relatively high proportion of Latinos are of school age. In 2012, 38.9 percent of Latinos were under the age of 21, compared to 28.1 percent in the general US population (US Census Bureau, 2012).

Throughout the 1970s, drop out rates for 16 to 24 year-old Latinos remained around 32 percent compared to 14 percent among Whites and 21 percent among Blacks (NCES, 2013). Rates of enrollment at two-year and four-year postsecondary institutions were also lower for Latinos in the 1970s: 13-20 percent compared to 25-27 percent among Whites and 15-22 percent among Blacks (NCES, 2013). Since the 1990s, however, Latinos have made significant progress in narrowing the education gap. From the early 1990s to 2012, the rate of Latino 25-29 year-olds with a high school diploma or its equivalent increased from 58 to 75 percent (NCES, 2013). For the same period, the rate for bachelor's degree attainment increased from 8 to 15 percent (NCES, 2013). Despite recent progress, Latinos still lag behind other racial and ethnic groups in indicators of educational attainment such as high school graduation, college enrollment and college graduation, and have yet to show improvements in attainment of advanced degrees (NCES, 2013).

Consequences of Low Educational Attainment

Research shows a positive correlation between the level of education and overall health (Ross & Wu, 1995). High school dropouts have a life expectancy that is nearly one decade shorter than high school graduates (Guralnik et al., 1993). The evidence also suggests that the relationship between education and health is at least partially causal (Cutler & Lleras-Muney, 2005). Pathways by which education affects health can be sorted into three categories: social and psychological resources, working and economic conditions, and health behaviors (Ross & Wu, 1995).

Social and psychological resources.

Human capital refers to skills that are conducive to health behaviors. Education affects health through the use of problem solving and decision making skills developed during formal education (Mirowsky & Ross, 2003). Less developed decision making skills can lead to more undesirable health outcomes resulting from less treatment adherence and poorer self-care skills (Street Jr. et al., 2012). Other skills such as health literacy and information seeking are specific to the health domain and also positively correlate with years of education (Gazmararian et al., 1999). Those individuals with lower health literacy and low levels of information seeking have less knowledge of their illnesses and treatments (Williams et al., 1998) resulting in poorer health, increased hospitalizations, incorrect drug use, low responsiveness to health education and a low uptake of disease prevention services (Berkman et al., 2011). More education may give more value to disease prevention and have a better understanding of the risks associated

with health-compromising behaviors. The National Science Foundation (2000) found that those with a college degree or higher were three times as likely to support technological advances in science compared to those who did not, indicating a higher level of trust in modern medical technologies.

Additionally, those with lower levels of education may be exposed to more stressors and have less effective stress-coping strategies (Adler & Stewart, 2010). Among the most valuable resources for dealing with stress is social support. The benefits of social support, however, are not just limited to stress management. The social networks of highly educated individuals tend to be larger (Berkman, 1995; Schöllgen et al., 2011) and typically, are also highly educated, which especially enriches the quality of the instrumental and informational support (Schöllgen et al., 2011).

Working and economic conditions.

Education is conventionally thought of as job preparation. As such, education affects health through mechanisms related to occupation and income. Individuals with higher-ranking jobs, those requiring more education, feel more control over their lives and more fulfillment from their work (Clougherty et al., 2010), leading to lower levels of stress. Additionally, individuals in jobs that require less education are more likely to be exposed to physical and chemical hazards such as heat, noise, radiation and trauma, and are more likely to suffer from on-the-job injury (Clougherty et al., 2010).

As the minimum educational requirements for a job decrease, so do the wages and benefits. Data released in February of 2014 by the Pew Research Center show that the

earnings gap between high school graduates and college graduates continues to grow (Suh, 2014). Workers already at higher risk of on-the-job injury may also have limited access to health care and other health resources. Those with less education are less likely to be insured than those with more education. For example, the Economic Policy Institute (2010) found that in 2008, 68% of college graduates working at least half-time in the private sector were covered by employer-provided health insurance while only 50% of high school graduates had this benefit. In addition, jobs available to those with less education yield increased economic hardships (Elliot et al., 2012), the stress of which can result in undesirable health outcomes (Rios & Zautra, 2011).

Individuals with lower levels of education are also more likely to be unemployed. The unemployment rate among those 25 years and over with less than a high school diploma is 10.2 percent, compared to 6.8 percent among high school graduates (no college) and 3.7 percent among those with a bachelor's degree or higher (Bureau of Labor Statistics, 2013). These statistics suggest a dose-response relationship between educational attainment and rates of employment. Additionally, a higher level of education greatly increases the likelihood of re-employment among those currently unemployed (Riddell & Song, 2011).

Health behaviors and social consequences.

Education directly and indirectly affects health through the engagement of certain health-promoting and health-compromising behaviors. For example, education is associated with vegetable consumption (Satia et al., 2002). In their analysis of multiple

large-scale, nationally representative datasets, Cutler & Lleras-Muney (2010) found negative relationships between years of education and cigarette smoking and binge drinking; and positive relationships between years of education and vigorous physical activity, cancer screenings, seat-belt use and use of smoke detectors. Other studies have found negative associations between education and cigarette smoking and physical inactivity (Lantz et al., 1998). The association between health-promoting behaviors and education is, at least partially, the result of having access to more resources and an increase in cognitive ability, which allows for better a understanding of health behaviors and their respective benefits (Cutler & Lleras-Muney, 2010).

Low educational attainment is associated with numerous undesirable outcomes that are indirectly related to health. For example, Pettit and Western (2004) found a strong link between level of education and rates of incarceration with over 90% of incarcerated men in state prisons never having attended college. Those with higher levels of education are less likely to be rearrested after having been adjudicated as a minor. Additionally, among those who are rearrested, crimes committed by individuals with less education tend to be significantly more serious compared to crimes committed by individuals with higher levels of education (Blomberg et al., 2011).

Explanation for the Latino Education Gap

Educational policies such as affirmative action, uniform admission laws and financial aid have contributed to narrowing the education attainment gap between Latinos and Whites in the United States. Universities with affirmative action admission policies

and states with uniform admission laws, or laws that guarantee admission to top performing students from in-state schools, have increased college admission of Latinos (Domina, 2007; Harris & Tienda, 2010). Federal and state funded financial aid lowers the financial burden of going to college, primarily for students from low-income households. However, Latino students are awarded financial aid less often and in lower amounts compared to students of other races and ethnicities (NCES, 2008).

Multiple characteristics of the school context have been studied in relation to the Latino education gap. For example, Latino students are more likely than white students to attend high schools with a disproportionate number of noncertified teachers, poor academic achievement, less challenging classes, greater rates of grade retention, higher drop out rates and lower rates of college matriculation (Valencia, 2000). Latinos are also disproportionately subjected to organizational level determinants such as lack of extracurricular activities offered by the school (Gándara, 2004) and less school safety (Kewal Ramani et al., 2007). Furthermore, it has been suggested that teachers can impact Latino educational attainment and academic performance through lower expectations of students (Minicucci & Olsen, 1992), perceived discrimination (Alfaro et al., 2009) and less academic support (Alfaro, 2006).

The influences of culture and family on educational attainment among Latino children are interrelated. More than half of all foreign-born residents in the US immigrated from Latin America and the Caribbean. Among the foreign born population, those residents from Central and South America are the least likely to report speaking only English at home, and the most likely to report speaking English “not at all” or “not

very well" (US Census Bureau, 2010). This may set Latino students back at a very young age, as limited English proficiency (LEP) acts as a barrier to academic achievement in the early years of schooling. Children who are learning English as a second language consistently score lower on achievement tests, even when compared to native English speakers of the same SES (Puma et al., 1997). Findings suggest that pre-literacy skills and initial reading instruction should be given in the language that the child knows best (Slavin & Cheung, 2005).

Like language, acculturation specifically affects those racial and ethnic minorities whose families more recently immigrated to the US. Acculturation in Latino secondary school students has been found to predict college attendance, mediating the positive association between generational status and college attendance (Hurtado & Guavain, 1997). Fuller at al. (1996) found that Latino parents are less likely to enroll their children in preschool because *familism*, or a social pattern whereby individual interests, decisions, and actions are conditioned by a network of relatives thought in many ways to take priority over the individual (Desmond & Turley, 2009), runs counter to many preschool programs. Sending a child to preschool may relieve the mother of her primary family contribution, to raise and nurture the children.

Family SES and parental education are some of the strongest predictors of a student's educational attainment (Desmond & Turley, 2009; Fuller et al., 1996). Exposure to family poverty during childhood is associated with lower educational attainment (Brooks-Gunn, Klebanov & Duncan, 1996) and high school drop out. The drop out rate among the bottom quintile of family income in 2009 was more than twice as

high as the rate for the middle three quintiles and more than five times as high as the highest quintile (US Census Bureau, 2009). Latino children are disproportionately affected by poverty. The Department of Education found that in 2011, 27.6% of Latino children under the age of 18 were living in poverty compared to 10.3% of Whites and 17.9% in the general population (US Census Bureau, 2013). Guo and Harris (2000) propose five mechanisms through which poverty effects childrens' intellectual development and subsequent educational success: physical environment at home, mothers' involvement with child, cognitive stimulation at home, child health and child care quality. By creating barriers to educational attainment, poverty becomes a self-perpetuating cycle.

Latino adolescents consistently report that getting a job to help support the family is the primary reason for dropping out of high school or not attending college (Behnke et al., 2010; Pew Hispanic Center, 2009). When looking at multiple sources of academic motivation, Alfaro et al (2006) found support from either parent to have a statistically significant impact on the Latino student's academic motivation. Highly educated parents or other members of a student's social network provide more fortuitous relationships (Stanton-Salazar & Spina, 2005). Fortuitous relationships are those relationships with peers, teachers, parents or mentors with knowledge about the college process or the preparation necessary to transition to college (Stanton-Salazar & Spina, 2005). Use of these resources is positively correlated with college attendance (Hurtado & Guavain, 1997).

Internal processes and individual factors can also influence educational attainment. Characteristics such as academic motivation (Behnke et al., 2010), class rank (Lloyd et al., 2009) AP course completion (Furstenburg, 2010), grade point average (Lloyd et al., 2009) and standardized test scores (Alon & Tienda, 2007) all predict college attendance. A student's knowledge of college opportunities can also influence his/her decision to apply. Lloyd and colleagues (2009) found that not all of the students who qualified for automatic admission to the public universities in their state under the uniform admissions law were even aware that they had qualified. Those who had knowledge of their class ranking and of the uniform admission law were more likely to apply and attend college (Lloyd et al., 2009). A college-going habitus, or unconscious assumption that one will attend college in the future, has also been shown to predict college attendance (Grodsky & Riegel-Crumb, 2010).

Similar to habitus, but less subconscious and passive, is future orientation. Future orientation is the synthesis of all these factors, both real and perceived. Because multiple theories of future orientation exist, definitions of the construct may vary. Educational aspirations and educational expectations are often measured as a proxy for future orientation: does a student aspire to go to college and does he/she think that he/she will actually go to college. College aspiration is a strong predictor of educational attainment both historically and among Latinos of different generational status (Buriel & Cardoza, 1988). Bohon et al (2006) find that, consistent with previous studies, Latinos have both lower college aspirations and expectations than their white counterparts. Minority students may become less motivated throughout their educational careers as they

encounter and perceive barriers that exist because of their minority status (Ogbu, 1991). Minority students whom Ogbu refers to as "involuntary immigrants," or those students who did not anticipate and subsequently choose their minority status by immigrating to the US, may have lower expectations because they may not expect that educational attainment will result in upward mobility (Ogbu, 1991). In addition, aspirations are not always consistent predictors of educational attainment when compared across racial and ethnic groups. Even when aspirations across racial/ethnic groups are almost equal, educational attainment differences still exist (Kao & Tienda, 1998). This supports the idea that environmental forces influence both aspirations and the path between aspirations and educational attainment (Kao & Tienda, 1998).

Overview of Hopes and Fears Theory of Future Orientation

In his earlier work, Finnish psychologist Jari-Erik Nurmi found that most adolescents' goals and hopes concerned expected life events such as work and school (Nurmi, 1987). To explain the cognitive processes associated with orientation of the future, he incorporated elements of action theory, cognitive psychology and life-span approach to form a modern future orientation framework (Nurmi, 1989a). Nurmi's Hopes and Fears theory posits that future orientation is a process broken into three distinct components: *motivation, planning* and *evaluation*. This theory is unique as it was the first to combine cognitive processes with behaviors associated with planning and realizing goals (Beal, 2011).

Motivation refers to the interests, aspirations and goals an individual has for the future and is informed by knowledge and values about future possibilities. Adolescents hold both ideal views of the future they would like to attain (i.e., hopes) and undesirable views of the future they would like to avoid (i.e., fears) (Markus & Nurius, 1986). In order to set realistic goals, general motives and values have to be compared to knowledge concerning the future (Nurmi, 1989b). In other words, the adolescent must have a minimum amount of knowledge to form a specific, attainable goal for the future. With respect to college aspirations, this may come from encouragement from family, peers, teachers and counselors.

Following motivation, the *planning* process is initiated in order to realize the future goal. In this stage, problem-solving skills and knowledge moderate the adolescent's ability to set subgoals and construct plans (Nurmi, 1989b). It is at this point in the framework that cognitions drive behavior, as execution of the plan also occurs during this stage. Well-constructed plans will allow the adolescent to take steps in the direction of his/her goal. Strong planning skills allow for assessment and necessary adjustments should the plan stray from the intended goal. Planning tasks for the realization of college aspirations may include "scheduling a visit with the counselor," taking the SAT" or "filling out a college application."

The final stage, *evaluation,* assesses the realizability of the goal and the plan. This stage is influenced by the adolescent's attribution style (e.g., internal and controllable) and his/her affect (e.g., optimistic) concerning future events (Weiner, 1985). Successful future goal formation and attainment is contingent on the evaluation of whether or not the

opportunities and resources are available to realize the plan and goal. This is consistent with Ogbu's (1991) theory that minority students' expectations may lower as a result of perceived and real barriers created as a result of control, discrimination and exploitation by the dominant race and ethnicity. For college expectations, a student may decide that he/she is unable to complete the steps necessary to go to college. Subsequent behaviors are determines by this evaluation (e.g., taking the SAT or not taking the SAT).

Although Nurmi's research primarily involved adolescents from Finland (Nurmi 1987, 1989a, 1989b), other research has evaluated future orientation in different populations such as adults (Nurmi, 1992), racial and ethnic minorities in the US (Behnke et al., 2004; Hirschman et al., 2004; McCabe et al., 2000), children with HIV (Zhang et al., 2009), youth with problem behaviors (Robbins & Bryan, 2004) and youth around the world (Corral-Verdugo & Pinhiero, 2006; McKay et al., 2013; Seginer & Halabi-Kheir, 1998). A variety of outcomes have been looked at as well: substance use (McKay et al., 2013; Robbins & Bryan, 2004), violent behaviors (Stoddard et al., 2011) and environmentally sustainable behaviors (Carmi, 2013; Corral-Verdugo & Pinheiro, 2006).

In a qualitative analysis of educational and occupational aspirations Latino parents and adolescents reported LEP as a barrier to the realization of their aspirations, (Behnke et al., 2004). Parents emphasized the lack of time as the biggest barrier to helping their children realize their educational goals. Both parents and adolescents expressed a lack of knowledge about the path to their aspirations (Behnke et al., 2004). Hirschman et al. (2004) found that Hispanics had the third lowest rates of college aspirations after American Indians and Pacific Islanders in the Pacific Northwest. The

lowered aspirations appeared to be attributed to lower-SES and lack of encouragement from family, peers and others (Hirschman et al., 2004).

In a qualitative analysis, Yowell (2000) investigated future orientation and possible selves in Latino adolescents. The findings were consistent with those from studies of non-Latino adolescents: the future orientation domain on which the adolescents placed the most emphasis was related to education. In a separate study, Yowell explored the relationship between future orientation in Latino adolescents and their risk status for high school drop out (Yowell, 2002). In this study she found "feared" selves to be the best predictor of high school status drop out, compared to "hoped for" and "expected" selves. To the researcher's knowledge, however, no studies have used Nurmi's three-stage model to analyze the multiple components of future orientation in Latino adolescents in the US.

For the purposes of this study, Nurmi's theoretical framework will guide the analysis of the association of future orientation-related constructs and the outcome of college application. Undesirable views of the future, or *fears*, will not be considered as college application is the only outcome variable of interest. A detailed understanding of the behavioral process that underlies goal attainment might allow us to determine the specific reasons for which Latinos are less likely to apply to college. Additionally, the theory will be applied in the context from which it originated: adolescents' educational future orientation.

As previously mentioned, aspirations may be formed using a minimal amount of information about a specific goal. Aspirations are therefore influenced by the context that

surrounds the adolescent. An adolescent observes others complete normative life events and forms aspirations to also complete those life events (e.g., a sibling graduates from high school). Nurmi refers to this as "schemata" provided by the social context. With respect to college aspirations, encouragement and expectations from parents, siblings, friends, teachers and counselors or the educational attainment of significant others may form this schemata. Descriptive norms, such as whether or not friends and siblings graduate high school or plan to attend college, also make up part of these schemata. Parents especially may serve as models for "hoped for" or "feared selves" for adolescents who will soon be entering adulthood.

Research Questions

To explore the how social context is correlated with future orientation and how both of these concepts influence college preparatory behaviors, the following questions will be explored in a longitudinal sample of Texas high school students:

1 - Are family, friend and school factors associated with college aspirations and college expectations during sophomore year?

2 - How do college aspirations and college expectations in sophomore year predict college preparatory behaviors and college application during senior year?

3 - How do family, friend and school factors in sophomore year predict college preparatory behaviors and college application during senior year?

4 - How do predictors of college preparatory behaviors and college application differ for Latinos and Whites?

Methods

Sample and Procedures

The current study analyzed the public-use dataset made available by the Texas Higher Education Opportunity Project (THEOP; Tienda & Sullivan, 2002-2004). The THEOP employed a longitudinal, two-cohort design to collect data related to high school students' future orientations with an emphasis on higher education. One hundred eight schools were selected based on a stratified random sample of all the public high schools in Texas. Stratification criteria were metropolitan area status, racial/ethnic composition, feeder school status (to University of Texas at Austin or Texas A&M University), and size of the school. Of the identified schools, 86 took an in-class survey, 12 were surveyed by mail, 7 did not participate and 3 were excluded as they exclusively served students with special needs.

Baseline data (Wave 1) were collected in the Spring of 2002 from both the senior and the sophomore cohorts. In total, Wave I yielded 13,808 responses from high school seniors and 19,969 responses from high school sophomores. The sophomore Wave 1 survey consisted of 64 questions and required approximately 30 minutes to complete. Project staff trained and assisted teachers with the administration of the in-class survey, which occurred during the period dedicated to English class. Passive parental consent and written student assent was used in all but two of the school districts from which schools participated; the other requested written parental consent. Parental refusals averaged five cases per school. At the schools that chose not to administer the surveys during class

time, mail surveys were sent to the homes of students and included information for their parents and a $5 pre-incentive for completion and return of the survey.

Only data from the sophomore cohort were used for the current study. Among sophomores, the mail-in survey response rate was 45% (994 responses) compared to 80% (18,975 responses) for the in-class survey. The overall response rate for the sophomore cohort was 78%.

Follow-up data (Wave 2) were collected for 3,092 subjects from the sophomore cohort in 2004, during the students' senior year of high school. Project staff attempted to contact all students who provided some sort of contact information on the Wave 1 survey. Project staff used a computer-assisted-telephone interviewing (CATI) questionnaire that lasted approximately 20 minutes. Attrition analysis showed no apparent differences among Wave 2 respondents and Wave 2 non-respondents with respect to gender, race/ethnicity, foreign-born status and language spoken at home. A subset of 2875 students was created by excluding cases for which gender and/or ethnic background was not available. A list of sample characteristics can be found in Table 1.

Measures

Individual characteristics.

Demographic variables collected in sophomore year included race/ethnicity and gender. A *Latino* variable was created by aggregating those students who self-reported as "Mexican/Mexican American/Chicano" or "Other Hispanic." Grade point average was calculated based on self-reported grades in the core courses of Math, Science, English

and Social Studies. Grade point averages ≥3.0 were coded as "1" as this is typically the minimum GPA required for college admission. All other grade point averages were coded "0." *Graduation track* referred to whether a student was enrolled in "college prep" or "distinguished achievement" track. Either of these tracks wouldl ensure that the student met the minimum course requirements for college admission. Students were coded as "1" if they planned to complete a graduation track that would ensure they met the minimum coursework required for college application.

Contextual variables.

Eleven contextual variables were assessed in sophomore year. Each variable was dichotomized and coded "1" for the presence of the condition and "0" for the absence of the condition. Parent education represented the highest level of education completed by either parent, with a "1" indicating at least one parent had attended school beyond high school. The six variables regarding encouragement or discouragement to attend college were created from a single item, "Since you began high school, have any of your guidance counselors/high school teachers/parents or guardians encouraged you or discouraged you about going to college?" Students could choose one of the three responses: "Have encouraged me," "haven't said anything," and "have discouraged me." "Have encouraged me" responses were coded as "1" for the encouragement variables. "Have discouraged me" responses were coded as "1" for the discouragement variables. A single item asked how many of the student's brothers and sisters (including adopted, step- and half-) had left high school before graduating. Responses "one left school" and "two

or more left school" were coded as "1." One item assessed the number of the student's friends that he/she spends time with who planned to attend college. Responses ranged from "none" to "three or more." "Three or more" was coded as "1," all else coded as "0."

Whether or not the counselor provided information regarding college options was assessed using a single item: "During high school, have your guidance counselors usually provided you with information about college options?" Students were coded "1" if they responded "yes" to this item. Students were coded "1" if they responded "once," "twice" or "three" to a single item that asked, "During your sophomore year, how many times did you talk to your guidance counselor about your long-term educational plans?"

Future orientation variables.

Aspiration to go to college was assessed in sophomore year with a single item: "How far would you like to go in school?" Responses ranged from "high school graduation only" to "Ph.D., M.D. or other professional degree." Students who responded that they would like to continue studying beyond high school were coded "1" for college aspirations. Students who responded, "high school graduation only" or "don't know" were coded "0."

Expectation to go to college was assessed at sophomore year with a single item: "How far do you think you will go in school?" Responses ranged from "high school graduation only" to "Ph.D., M.D. or other professional degree." Students who responded that they expect to study beyond high school were coded "1." Students who responded, "high school graduation only" or "don't know" were coded "0." Those students who did

not have college aspirations were prompted to skip the item assessing college expectations. Therefore, a portion of the students (4.7%) were labeled "not applicable" and were also considered to not have college expectations.

Outcome variables.

College preparatory behaviors were assessed at both sophomore and senior years using multiple items related to college admissions testing. A dichotomous variable was created so that each student was considered to have performed college preparatory behaviors if he/she responded "have taken" the PSAT, PLAN, SAT I or ACT by sophomore year. When assessed at senior year, students reporting having taken the SAT I or ACT were coded "1."

College application was assessed during senior year only. Students who expressed expectations to go to college in senior year were then asked which colleges they would most prefer to go to and if they had applied to college. Students were coded as "1" if they reported applying to one or more colleges, all other responses were coded "0."

Statistical Analyses

Separate bivariate logistic regression analyses were conducted using the future orientation variables (sophomore year college aspiration, college expectation) and outcome variables (college preparatory behaviors, and senior year college preparatory behaviors and college application) as the dependent variables. These variables were regressed on the individual characteristics (gender, race/ethnicity, GPA and graduation

track) and contextual variables (parent education level, parent encouragement, parent discouragement, siblings have dropped out of high school, more than three friends plan to attend college, teacher encouragement, teacher discouragement, counselor encouragement, counselor discouragement, counselor provided information regarding college options and student discussed long-term education plans with counselor). In addition, we used bivariate logistic regression analyses to test the associations between sophomore year future orientation variables (sophomore year college aspiration, college expectation and college preparatory behaviors) and the outcome variables (senior year college preparatory behaviors and college application).

For the multivariate logistic regression analyses we tested multiple models using sequential regression. Using the total sample, we regressed senior year college preparatory behaviors on the individual characteristics (1), the contextual variables (2), sophomore year college aspiration (3), and sophomore year college expectation (4). Each variable was introduced to the model according to its order in Nurmi's future orientation model. The theory suggests that planning (i.e., college preparatory behaviors) is the abstract identification of the steps needed to realize the aspiration and it precedes evaluation (i.e., college expectation). We included college expectation before college preparatory behaviors, however, because the former indicates a cognitively based construct and the latter indicates a behavioral construct. For the purposes of the current study, this order better reflected the transition from cognition to behavior.

For the second sequence of multivariate logistic regression models with the total sample, the dependent variable was college application in senior year. We again

introduced the variables in blocks: individual characteristics (1), contextual variables (2), sophomore year college aspiration (3) and sophomore year college expectation (4). For this analysis, we introduced a fifth block that included sophomore year college preparatory behaviors. In addition to following the theoretical guidelines, we introduced the variables in this manner in order to see each block's unique ability to predict future behaviors that are necessary for college enrollment. Additionally, we were interested to see how well the contextual and future orientation variables predicted the senior year behaviors after controlling for variables such as GPA, graduation track and parent education, variables theorized to be strong predictors.

We repeated both sets of sequential multivariate logistic regression analyses after stratifying the sample by Latino and White ethnic background. This allowed us to identify any differential effects that may offer a partial explanation for the differential levels of college enrollment among Latinos and Whites. For these sets of` analyses, the parent, teacher and counselor discouragement variables were excluded, as the small number of affirmative responses was so low that it provided no variability.

Results

Sample Characteristics

Females represented 54.7% of the sample (Table 1). Latinos made up the largest racial/ethnic group in the sample (37.9%), the majority of which identified as Mexican or Mexican American (32.8% of the total sample). Whites made up the second largest racial/ethnic group with 37.3% of the sample, followed by Blacks (13.7%), Asians (6.5%), Native American (0.7%) and other (3.9%). One in six students was foreign-born (16.7%). Nearly two-thirds of students surveyed (61.7%) reported that they had a GPA of 3.0 or higher in math, science, history and English classes and two-thirds (67.0%) of students reported that they were enrolled in a graduation track that would ensure that they meet the minimum course requirements for college admissions.

Over half (53.9%) of the sample had at least one parent who studied beyond high school. Encouragement to go to college was highest among parents (91.0%), followed by teachers (76.4%) and counselors (54.5%), while the percentage of students who reported discouragement to attend college from parents, teachers or counselors was low across the three items (1.3%, 1.4% and 1.1%, respectively). The percentage of students who had at least one older sibling who had dropped out of high schools was 17.8%. Three-quarters (75.3%) of students reported having more than three friends who planned to attend college. Just under half of the students reported that they had discussed long-term education plans with guidance counselors (44.3%) or that the counselors had provided them with information regarding college options (47.3%).

A high percentage of students reported having college aspirations during their sophomore year (84.7%) and senior year (88.3%). The percentage of students reporting college expectations was 86.7% in sophomore year and 88.4% in senior year. The percentage of students reporting having taken the PSAT, PLAN, SAT or ACT by the Spring of their sophomore year was 36.7%, and 65.0% by the Spring of senior year.

Table 1 – Sample characteristics of Texas high school students surveyed in the Spring of sophomore (2002) and senior (2004) years

Variable	Valid N	%
Individual characteristics		
Female	2875	54.7
Ethnic background	2875	
Mexican/MA		32.8
Other Hispanic		5.1
White		37.3
Black		13.7
Asian/PI		6.5
Native Am.		0.7
Other		3.9
Foreign-born	2851	16.7
GPA (≥ 3.0)	2785	61.7
Graduation track	2875	66.6
Context		
Parent education (1 parent > high school)	2851	53.9
Parent encouraged college	2851	94.1
Parent discouraged college	2484	1.3
Siblings have dropped out	2855	17.7
Friends plan to attend college (>3)	2848	75.3
Teacher encouraged college	2855	78.6
Teacher discouraged college	2851	1.4
Counselor encouraged college	2875	55.1
Counselor discouraged college	2848	1.1
Counselor provided college info	2875	47.3
Counselor discussed plans	2875	42.9
Future orientation		
College aspiration	2852	84.7
College expectation	2712	86.7
College preparatory behaviors	2875	36.7
College aspiration (2)	2674	88.3
College expectation (2)	2650	88.4
College preparatory behaviors (2)	2672	65.0
College application (2)	2630	65.8

Source: Texas Higher Education Opportunity Project (THEOP) Sophomore Cohort (2002, 2004)
-Data for all variables were collected at Wave 1 unless labeled "(2)"
-Graduation track indicates the student's track will ensure that he/she takes all courses necessary for college admission

Bivariate Analysis

Females were significantly more likely than males to report college aspirations (OR=1.53, CI=1.25-1.88, p<.001), college preparatory behaviors (OR=1.20, CI=1.03-1.40, p<.05) and college expectations (OR=1.45, CI=1.16-1.81, p<.01) in their sophomore year (Table 2). Additionally, females were more likely than males to report having applied to college during their senior year (OR=1.32, CI=1.12-1.55, p<.01). Latinos were half as likely as non-Latinos to report college aspirations (OR=0.49, CI=0.40-0.61, p<.001), college preparatory behaviors (OR=0.49, CI=0.41-0.57, p<.001) and college expectations (OR=0.49, CI=0.39-0.61, p<.001) in their sophomore year. College application by the Spring of senior year was 27.0% lower for Latinos compared to non-Latinos (OR=0.73, CI=0.62-0.86, p<.001). Grade point average was strongly associated with all future orientation variables; students with a GPA of 3.0 or higher during sophomore year were more than 2.5 times as likely to report college aspirations (OR=2.69, CI=2.17-3.34, p<.001), college preparatory behaviors (OR=2.70, CI=2.28-3.20, p<.001) and college expectations (OR=2.71, CI=2.14-3.42, p<.001) in that same year, compared to students with a GPA below 3.0. Those students with a GPA at or above 3.0 in their sophomore year were also more than 3.5 times as likely to report college preparatory behaviors as seniors (OR=3.59, CI=3.03-4.26, p<.001) and 2.5 times as likely to report having applied to college by their senior year (OR=2.71, CI=2.29-3.21, p<.001). Graduation track was positively and significantly associated with all future orientation variables at both sophomore and senior year (p<.001). Those students following a graduation track in their sophomore year that ensured that they would meet

the minimum course requirements for college application were more than twice as likely to report having applied to college in their senior year (OR=2.28, CI=1.92-2.71).

Family, peer and school level influences had varying levels of association with college aspirations, college preparatory behaviors, college expectations and college application. Having at least one parent who studied beyond high school was significantly associated with all of the future orientation variables ($p<.001$). Students who reported having at least one parent who studied beyond high school were also twice as likely to report having applied to college by their senior year (OR=2.12, CI=1.76-2.52, $p<.001$). While encouragement from parents, teachers and counselors was positively and significantly associated with all the future orientation variables in sophomore year and the future orientation-related behaviors in senior year, parent encouragement yielded the strongest association. Of the three sources of encouragement assessed during sophomore year, parent encouragement had the largest association with college preparatory behaviors during senior year (OR=2.76, CI=1.95-3.91, $p<.01$). Students who reported encouragement from parents, teachers or counselors during their sophomore year were more likely to apply to college by their senior year (parent: OR=2.76, CI=1.94-3.91, $p<.001$; teacher: OR=1.55, CI=1.28-1.89; counselor: OR=1.31, CI=1.12-1.55, $p<.01$).

Students who during their sophomore year reported having more than three friends who planned to attend college were significantly more likely to report college aspirations, college preparatory behaviors and college expectations in their sophomore year. These students were also three times as likely to report college preparatory behaviors in their senior year (OR=2.94, CI=2.44-3.54, $p<.001$) and more than twice as

likely to report having applied to college in their senior year (OR=2.28, CI=1.43-3.63, p<.001). Conversely, students who by their sophomore year had an older sibling drop out of high school were 41.0% less likely in their sophomore year to report that they would like to attend college (OR=0.59, CI=0.46-0.75, p<.001), 51.0% less likely to report college preparatory behaviors (OR=0.49, CI=0.39-0.61, p<.001), and 43.0% less likely to report college expectations (OR=0.57, CI=0.40-0.74, p<.001). The impact was even greater for college preparatory behaviors (OR=0.40, CI=0.32-0.49, p<.001) and college application (OR=0.50, CI=0.41-0.62, p<.001) in their senior year.

Students who reported in their sophomore year that counselors had provided them with information regarding college options were more likely to report that they would like to go to college in their sophomore year (OR=1.43, CI=1.16-1.76, p<.01), that they took college admission tests or practice tests during sophomore year (OR=1.14, CI=0.98-1.33, p<.05) and that they had applied to college by their senior year (OR=1.22, CI=1.03-1.43. p<.05). Having discussed long-term education plans with a counselor was also associated with college aspirations (OR=1.82, CI=1.46-2.26, p<.001), college preparatory behaviors (OR=1.33, CI=1.14-1.55, p<.001) and college expectations (OR=1.49, CI=1.18-1.88, p<.01) during sophomore year, but was not predictive of college preparatory behaviors or college application in senior year.

All bivariate relationships between the future orientation variables with all other future orientation variables were significant at the p<.001 level. Students who reported that they expected to go to college as sophomores were almost twice as likely to report having applied to college as seniors (OR=1.71, CI=1.34-2.19). Students who reported

having taken the SAT or ACT by the Spring of senior year were more than seven times as likely to report having applied to college in their senior year (OR=7.22, CI=6.03-8.65).

Table 2 – Bivariate logistic regression analysis calculating associations between all variables among high school students in Texas (2002, 2004)

	College aspiration (1) OR (CI)	College expectation (1) OR (CI)	College preparatory behaviors (1) OR (CI)	College preparatory behaviors (2) OR (CI)	College application (2) OR (CI)
Individual characteristics					
Female	1.53***(1.25-1.88)	1.45** (1.16-1.81)	1.20* (1.03-1.40)	1.16 (0.99-1.36)	1.32** (1.12-1.55)
Latino	0.49***(0.40-0.61)	0.49***(0.39-0.61)	0.49***(0.41-0.57)	0.49***(0.41-0.58)	0.73***(0.62-0.86)
GPA (≥ 3.0)	2.69***(2.17-3.34)	2.71***(2.14-3.42)	2.70***(2.28-3.20)	3.59***(3.03-4.26)	2.71***(2.29-3.21)
Graduation track	5.23***(4.21-6.50)	3.93***(3.13-4.93)	3.29***(2.74-3.95)	3.39***(2.85-4.03)	2.28***(1.92-2.71)
Context					
Parent education level	2.24***(1.76-2.86)	2.41***(1.85-3.14)	2.12***(1.80-2.51)	2.84***(2.35-3.38)	2.12***(1.76-2.52)
Parent encouraged college	4.73***(3.41-6.56)	3.83***(2.62-5.60)	2.42***(1.65-3.56)	2.76** (1.95-3.91)	2.76***(1.94-3.93)
Parent discouraged college	0.29***(0.15-0.57)	0.34** (0.15-0.75)	0.60 (0.30-1.26)	0.70 (0.34-1.44)	0.30** (0.14-0.62)
Siblings dropped out	0.59***(0.46-0.75)	0.57***(0.44-0.74)	0.49***(0.39-0.61)	0.40***(0.32-0.49)	0.50***(0.41-0.62)
Friends plan to attend college	2.92***(2.36-3.62)	2.51***(1.99-3.18)	2.13** (1.76-2.58)	2.94***(2.44-3.54)	2.01***(1.67-2.43)
Teacher encouraged college	2.02***(1.61-2.53)	1.67***(1.30-2.15)	1.54***(1.27-1.87)	1.28* (1.05-1.55)	1.55***(1.28-1.89)
Teacher discouraged college	0.31** (0.16-0.61)	0.19***(0.09-0.40)	0.42 (0.19-0.92)	0.42* (0.21-0.82)	0.66 (0.33-1.34)
Counselor encouraged college	2.08***(1.69-2.56)	1.87***(1.50-2.35)	1.47***(1.26-1.72)	1.23* (1.05-1.45)	1.31** (1.12-1.55)
Counselor discouraged college	0.24***(0.12-0.50)	0.83 (0.25-2.99)	0.59 (0.26-1.33)	0.28** (0.12-0.63)	0.70 (0.32-1.53)
Counselor provided college info	1.43** (1.16-1.76)	1.21 (0.97-1.52)	1.14* (0.98-1.33)	1.02 (0.87-1.20)	1.22* (1.03-1.43)
Counselor discussed plans	1.82***(1.46-2.26)	1.49** (1.18-1.88)	1.33***(1.14-1.55)	1.05 (0.89-1.23)	1.17 (0.99-1.38)
Future orientation					
Wave 1					
College aspiration	---	24.8***(18.6-32.9)	1.94***(1.54-2.45)	2.74***(2.19-3.43)	1.88***(1.49-2.36)
College expectation	---	---	2.12***(1.65-2.74)	2.23***(1.75-2.84)	1.71***(1.34-2.19)
College preparatory behaviors	---	---	---	4.08***(3.37-4.93)	2.51***(2.10-3.00)
Wave 2					
College preparatory behaviors	---	---	---	---	7.22***(6.03-8.65)

Source: Texas Higher Education Opportunity Project (THEOP) Sophomore Cohort (2002, 2004)
-Data for all variables were collected at Wave 1 unless labeled "(2)"
-Graduation track = student's track will ensure that he/she takes all courses necessary for college admission
-Parent education level = at least one parent studied beyond high school
-Friends plan to attend college = student has more than three friends who planned to attend high school
*p < .05, **p < .01, ***p < .001 CI = 95% confidence intervals

Multivariate Analysis

Full Sample.

In the full sample, being female was the only one of the four individual characteristics that did not predict college preparatory behaviors in the senior year (Table 3). Latinos were 40.0% less likely than non-Latinos to take the SAT or ACT by the Spring of their senior year (OR=0.60, CI=0.49-0.73, p<.001). Even after considering parent, peer and school factors, Latinos were 21.0% less likely to take the SAT or ACT by senior year (OR=0.79, CI=0.63-0.99, p<.05).

People most proximal to the student (i.e., family and friends) had the biggest impact on college preparatory behaviors at senior year. Even when controlling for gender, race/ethnicity, GPA, graduation track, and parental influences, students who had siblings that had dropped out were 42.0% less likely to report having taken the SAT or ACT in their senior year (OR=0.58, CI=0.44-0.76, p<.001). Similarly, students with more than three friends who planned to attend to college in sophomore year were nearly twice as likely to report having taken the SAT or ACT by senior year (OR=1.78, CI=1.38-2.29, p<.001). Unexpectedly, parental discouragement reported during sophomore year had a positive effect on college preparatory behaviors during senior year (OR=4.62, CI=1.35-15.8, p<.05). All variables accounting for school-level influences (i.e., teacher and counselor) did not predict college preparatory behaviors during senior year. Similarly, students who, in their sophomore year, reported that they would like to go to college or that they expect to go to college were no more likely to engage in college preparatory

behaviors in their senior year compared to students who did not aspire or expect to go to college.

When considering the other individual characteristics, being female was no longer significantly associated with college application in senior year (Table 3). Latino students were not significantly less likely to report having applied to college by their senior year of high school. GPA and graduation track were significant predictors of college application in senior year (OR=2.30, CI=1.87-2.83, $p<.001$ and OR=1.94, CI=1.56-2.41, $p<.001$, respectively). As with college preparatory behaviors, family and friend influences were significant predictors of college application by senior year. Students who were encouraged to go to college by their parents during sophomore year were twice as likely to apply to college by their senior year (OR=2.15, CI=1.17-3.94, $p<.05$). Unlike with college preparatory behaviors, parental discouragement was not a significant predictor of college application (OR=1.51, CI=0.84-4.77, $p=.478$). Neither college aspirations nor college expectations at sophomore year predicted college application at senior year, however those who reported taking the PSAT, PLAN, SAT or ACT by their sophomore year were almost twice as likely to report having applied to college by their senior year (OR=1.73, CI=1.39-1.48, $p<.001$).

Table 3 – Multivariate logistic regression analysis predicting college preparatory behaviors and college application at senior year among the full sample of high school students in Texas (2002, 2004)

	College preparatory behaviors				College application				
	1 OR (CI)	2 OR (CI)	3 OR (CI)	4 OR (CI)	1 OR (CI)	2 OR (CI)	3 OR (CI)	4 OR (CI)	5 OR (CI)
Individual characteristics									
Female	0.91	0.92	0.92	0.92	1.08	1.09	1.09	1.09	1.09
	(0.74-1.12)	(0.75-1.14)	(0.75-1.14)	(0.74-1.14)	(0.90-1.32)	(0.89-1.34)	(0.89-1.33)	(0.89-1.33)	(0.89-1.33)
Latino	0.60***	0.79*	0.79*	0.79*	0.89	1.12	1.12	1.12	1.17
	(0.49-0.73)	(0.63-0.99)	0.63-0.99)	(0.64-0.99)	(0.72-1.09)	(0.89-1.39)	(0.90-1.40)	(0.90-1.40)	(0.94-1.47)
GPA (≥ 3.0)	2.44***	2.29***	2.28***	2.26***	2.30***	2.08***	2.08***	2.08***	1.95***
	(1.98-3.01)	(1.84-2.84)	(1.84-2.84)	(1.82-2.81)	(1.87-2.83)	(1.68-2.58)	(1.68-2.57)	(1.68-2.57)	(1.57-2.41)
Graduation track	2.59***	2.17***	2.13***	2.11***	1.94***	1.63***	1.60***	1.60***	1.48**
	(2.08-3.22)	(1.73-2.73)	(1.69-2.69)	(1.67-2.66)	(1.56-2.41)	(1.30-2.04)	(1.28-2.02)	(1.27-2.02)	(1.17-1.87)
Context									
Parent education level		1.76***	1.76***	1.75***		1.66***	1.66***	1.66***	1.61***
		(1.41-2.18)	(1.42-2.19)	(1.41-2.17)		(1.34-2.05)	(1.35-2.05)	(1.34-2.05)	(1.30-1.99)
Parent encouraged college		2.23*	2.19**	2.16*		2.15*	2.12*	2.12*	2.07*
		(1.21-4.13)	(1.18-4.06)	(1.17-4.01)		(1.17-3.94)	(1.16-3.89)	(1.15-3.88)	(1.13-3.90)
Parent discouraged college		4.62*	4.59*	4.61*		1.51	1.50	1.50	1.41
		(1.35-15.8)	(1.34-15.8)	(1.34-15.9)		(0.48-4.77)	(0.48-4.73)	(0.48-4.73)	(0.45-4.49)
Siblings dropped out		0.58***	0.58***	0.58***		0.71*	0.71*	0.71*	0.74*
		(0.44-0.76)	(0.44-0.76)	(0.44-0.76)		(0.54-0.92)	(0.54-0.92)	(0.54-0.92)	(0.56-0.96)
Friends plan to attend college		1.78***	1.76***	1.76***		1.37*	1.36*	1.36*	1.34*
		(1.38-2.29)	(1.37-2.72)	(1.36-2.26)		(1.07-1.76)	(1.06-1.75)	(1.06-1.75)	(1.04-1.72)
Teacher encouraged college		0.79	0.80	0.80		1.15	1.15	1.15	1.16
		(0.59-1.06)	(0.59-1.07)	(0.59-1.07)		(0.88-1.51)	(0.88-1.51)	(0.88-1.51)	(0.88-1.52)
Teacher discouraged college		0.35	0.34	0.35		1.60	1.60	1.60	1.77
		(0.10-1.18)	(0.10-1.18)	(0.10-1.20)		(0.46-5.61)	(0.45-5.64)	(0.46-5.66)	(0.50-6.31)
Counselor encouraged college		0.94	0.93	0.92		0.95	0.95	0.95	0.92
		(0.72-1.23)	(0.71-1.21)	(0.71-1.20)		(0.74-1.22)	(0.74-1.22)	(0.74-1.21)	(0.72-1.18)
Counselor discouraged college		0.41	0.41	0.40		1.21	1.23	1.23	1.18
		(0.11-1.57)	(0.11-1.60)	(0.10-1.54)		(0.28-5.20)	(0.29-5.32)	(0.28-5.30)	(0.27-5.15)
Counselor provided college info		0.95	0.95	0.96		1.07	1.07	1.07	1.10
		(0.74-1.21)	(0.75-1.21)	(0.75-1.22)		(0.85-1.35)	(0.85-1.36)	(0.85-1.36)	(0.87-1.40)
Counselor discussed plans		0.93	0.93	0.93		1.11	1.10	1.11	1.07
		(0.74-1.18)	(0.73-1.18)	(0.73-1.18)		(0.88-1.39)	(0.88-1.39)	(0.88-1.39)	(0.85-1.35)
Future orientation									
College aspiration			1.23	1.10			1.17	1.16	1.16
			(0.86-1.76)	(0.73-1.66)			(0.82-1.66)	(0.78-1.72)	(0.77-1.72)
College expectation				1.24				1.02	1.02
				(0.85-1.80)				(0.70-1.48)	(0.70-1.48)
College preparatory behaviors				---				---	1.73***
				---				---	(1.39-2.15)
Valid N				**2056**	**Valid N**				**2030**

Source: Texas Higher Education Opportunity Project (THEOP) Sophomore Cohort (2002, 2004)
*p < .05, **p < .01, ***p < .001 -CI = 95% confidence intervals
-Graduation track = student's track will ensure he/she takes all courses necessary for college admission
-Parent education level = at least one parent studied beyond high school
-Friends plan to attend college = student has more than three friends who planned to attend high school

Multivariate Analysis

Whites Only.

Among only White students, gender was neither predictive of college preparatory behaviors nor college application in senior year, when controlling for other individual characteristics (Table 4). White students with a GPA of 3.0 or higher and students were enrolled in a graduation track that would ensure that they completed the minimum coursework required for college application were two and four times as likely have take the ACT or SAT by Spring of their senior year (OR=2.32, CI=1.59-3.38, p<.001 and OR=3.99, CI=2.75-5.77, p<.001, respectively). These relationships remained significant even after controlling for family, friend and school contextual variables. Only three contextual variables were significant predictors of taking the SAT or ACT by senior year among White students: having at least one parent who studied beyond high school (OR=1.90, CI=1.32-2.74, p<.01), having a sibling who dropped out of high school (OR=0.31, CI=0.19-0.52, p<.001) and having more than three friends who planned to attend college (OR=2.37, CI=1.49-3.77, p<.001). White students who reported that they aspired or expected to go to college in their sophomore year were not significantly more likely to take the SAT or ACT by the Spring of their senior year.

Both GPA and graduation track in sophomore year were significant predictors of college application for White students in their senior year (OR=2.66, CI=1.86-3.81, p<.001 and OR=2.56, CI=1.78-3.67, p<.001, respectively) (Table 4). Similarly, White students in sophomore year who reported having at least one parent who studied beyond high school or more than three friends who planned to attend college were more likely to

apply to college in their senior year (OR=1.63, CI=1.16-2.29, p<.01 and OR=1.94, CI=1.24-2.98, p<.01, respectively). White students who had one or more siblings drop out of high school were 69.0% less likely to reporting having applied to college in their senior year (OR=0.31, CI=0.19-0.53, p<.001). The magnitude and level of significance of the relationship between graduation track and college application dropped when the contextual variables were introduced to the model (OR=1.97, CI=1.34-2.90, p<.01). While aspirations and expectations to go to college in sophomore year were not significant predictors of college application in senior year, White students who reported college preparatory behaviors at sophomore year (i.e., taking the PLAN or PSAT) were nearly two times as likely to report applying to college by their senior year (OR=1.88, CI=1.36-2.62, p<.01).

Table 4 – Multivariate logistic regression analysis predicting college preparatory behaviors and college application at senior year among White high school students in Texas (2002, 2004)

	College preparatory behaviors				College application				
	1 OR (CI)	2 OR (CI)	3 OR (CI)	4 OR (CI)	1 OR (CI)	2 OR (CI)	3 OR (CI)	4 OR (CI)	5 OR (CI)
Individual characteristics									
Female	0.88	0.88	0.89	0.88	1.05	1.04	1.04	1.04	1.02
	(0.62-1.23)	(0.62-1.27)	(0.62-1.27)	(0.62-1.28)	(0.77-1.43)	(0.75-1.45)	(0.75-1.44)	(0.75-1.44)	(0.74-1.42)
GPA (≥ 3.0)	2.32***	2.10***	2.12***	2.03**	2.66***	2.34***	2.33***	2.35***	2.32***
	(1.59-3.38)	(1.41-3.13)	(1.42-3.17)	(1.35-3.04)	(1.86-3.81)	(1.61-3.41)	(1.60-3.40)	(1.60-3.44)	(1.58-3.40)
Graduation track	3.99***	3.10***	3.19***	3.13***	2.56***	1.97**	1.93**	1.94**	1.69*
	(2.75-5.77)	(2.08-4.62)	(2.13-4.78)	(2.09-4.69)	(1.78-3.67)	(1.34-2.90)	(1.31-2.86)	(1.31-2.87)	(1.13-2.53)
Context									
Parent education level		1.90**	1.89**	1.86***		1.63**	1.64**	1.64**	1.65**
		(1.32-2.74)	(1.31-2.72)	(1.29-2.69)		(1.16-2.29)	(1.16-2.30)	(1.16-2.31)	(1.17-2.34)
Parent encouraged college		1.77	1.81	1.66		1.27	1.26	1.29	1.29
		(0.56-5.61)	(0.57-5.72)	(0.52-5.34)		(0.42-3.86)	(0.41-3.82)	(0.42-3.98)	(0.43-3.92)
Siblings dropped out		0.31***	0.31***	0.31***		0.30***	0.31***	0.31***	0.31***
		(0.19-0.52)	(0.19-0.52)	(0.19-0.52)		(0.18-0.51)	(0.18-0.51)	(0.18-0.51)	(0.19-0.53)
Friends plan to attend college		2.37***	2.35***	2.37***		1.94**	1.96**	1.96**	1.93**
		(1.49-3.77)	(1.48-3.74)	(1.49-3.77)		(1.24-2.98)	(1.25-3.07)	(1.25-3.07)	(1.23-3.04)
Teacher encouraged college		0.82	0.81	0.82		1.10	1.11	1.11	1.11
		(0.50-1.33)	(0.49-1.32)	(0.50-1.34)		(0.72-1.70)	(0.72-1.71)	(0.72-1.71)	(0.72-1.71)
Counselor encouraged college		0.97	0.97	0.96		0.96	0.96	0.96	0.93
		(0.62-1.50)	(0.62-1.51)	(0.62-1.50)		(0.64-1.43)	(0.64-1.43)	(0.64-1.43)	(0.62-1.40)
Counselor provided college info		0.85	0.84	0.84		1.06	1.06	1.07	1.07
		(0.56-1.27)	(0.56-1.26)	(0.56-1.26)		(0.73-1.53)	(0.73-1.54)	(0.74-1.54)	(0.73-1.56)
Counselor discussed plans		0.91	0.91	0.92		1.27	1.26	1.26	1.20
		(0.60-1.36)	(0.61-1.37)	(0.61-1.38)		(0.88-1.84)	(0.87-1.83)	(0.87-1.83)	(0.82-1.75)
Future orientation									
College aspiration			0.73	0.55			1.26	1.32	1.46
			(0.36-1.48)	(0.24-1.24)			(0.69-2.30)	(0.66-2.65)	(0.72-2.93)
College expectation				1.71				-0.90	0.84
				(0.84-3.49)				(0.45-1.81)	(0.42-1.70)
College preparatory behaviors				---				---	1.88***
				---				---	(1.36-2.62)
Valid N				**856**	**Valid N**				**844**

Source: Texas Higher Education Opportunity Project (THEOP) Sophomore Cohort (2002, 2004)
*p < .05, **p < .01, ***p < .001 -CI = 95% confidence intervals
-Graduation track = student's track will ensure he/she takes all courses necessary for college admission
-Parent education level = at least one parent studied beyond high school
-Friends plan to attend college = student has more than three friends who planned to attend high school

Multivariate Analysis

Latinos Only.

Among Latino students, being female was not a significant predictor of college preparatory behaviors or college application at senior year when controlling for the other individual characteristics (Table 5). Grade point average and graduation track were significant predictors of college preparatory behaviors at senior year (OR=2.43, CI=1.76-3.35, p<.001 and OR=1.84, CI=1.31-2.58, p<.001, respectively). The only contextual variable that was predictive of college preparatory behaviors among Latinos at senior year was parent education level. Latino students with at least one parent who studied beyond high school were almost twice as likely to report having taken the SAT or ACT by their senior year, even when taking into account sophomore year college aspirations and expectations (OR=1.84, CI=1.30-2.60, p<.01). Peer, sibling and school contextual factors, along with college aspirations and college expectations at sophomore year, were not significant predictors of college preparatory behaviors at senior year.

Grade point average and graduation track at sophomore year were predictive of college application among Latinos at senior year (OR=2.07, CI=1.49-2.88, p<.001 and OR=1.48, CI=1.05-2.10, p<.001, respectively) (Table 5). However, when the contextual variables were added to the model, the relationship between graduation track and college application became non-significant (p=.257). Latino students with at least one parent who studied beyond high school and Latino students who received parental encouragement to go to college were more likely to apply to college by the Spring of senior year. (OR=1.75, CI=1.22-2.50, p<.01 and OR=2.36, CI=1.16-4.78, p<.05, respectively).

College aspirations, college expectations and college preparatory behaviors among Latino students at sophomore year were not significant predictors of college application at senior year, and they did not affect the relationships between parental influences and college application.

Table 5 – Multivariate logistic regression analysis predicting college preparatory behaviors and college application at senior year among Latino high school students in Texas (2002-2004)

	College preparatory behaviors				College application				
	1 OR (CI)	2 OR (CI)	3 OR (CI)	4 OR (CI)	1 OR (CI)	2 OR (CI)	3 OR (CI)	4 OR (CI)	5 OR (CI)
Individual characteristics									
Female	0.81	0.80	0.80	0.80	0.97	0.96	0.96	0.95	0.95
	(0.59-1.23)	(0.58-1.27)	(0.58-1.12)	(0.57-1.11)	(0.70-1.35)	(0.67-1.34)	(0.69-1.34)	(0.68-1.32)	(0.68-1.32)
GPA (≥ 3.0)	2.43***	2.25***	2.26***	2.25***	2.07***	1.90***	1.91***	1.90***	1.84***
	(1.76-3.35)	(1.61-3.13)	(1.62-3.15)	(1.61-3.14)	(1.49-2.88)	(1.36-2.67)	(1.36-2.68)	(1.35-2.67)	(1.31-2.60)
Graduation track	1.84***	1.56*	1.52*	1.50*	1.48***	1.24	1.22	1.20	1.17
	(1.31-2.58)	(1.09-4.62)	(1.05-2.18)	(1.04-2.16)	(1.05-2.10)	(0.86-1.73)	(0.84-1.76)	(0.82-1.74)	(0.81-1.70)
Context									
Parent education level		1.84**	1.83**	1.83**		1.75**	1.74**	1.74**	1.69**
		(1.30-2.60)	(1.30-2.59)	(1.29-2.59)		(1.22-2.50)	(1.22-2.49)	(1.22-2.49)	(1.18-2.43)
Parent encouraged college		1.69	1.66	1.67		2.36*	2.34*	2.36*	2.32*
		(0.84-3.42)	(0.82-3.36)	(0.83-3.38)		(1.16-4.78)	(1.15-4.74)	(1.16-4.80)	(1.14-4.72)
Siblings dropped out		0.97	0.98	0.97		1.16	1.16	1.15	1.17
		(0.65-1.45)	(0.66-1.46)	(0.65-1.45)		(0.77-1.75)	(0.77-1.75)	(0.76-1.74)	(0.77-1.77)
Friends plan to attend college		1.35	1.32	1.31		1.25	1.23	1.22	1.21
		(0.94-1.94)	(0.92-1.90)	(0.01-1.89)		(0.86-1.80)	(0.85-1.76)	(0.84-1.77)	(0.83-1.75)
Teacher encouraged college		0.80	0.80	0.80		1.31	1.31	1.30	1.28
		(0.50-1.28)	(0.50-1.28)	(0.50-1.28)		(0.82-2.08)	(0.83-2.09)	(0.82-2.08)	(0.80-2.04)
Counselor encouraged college		0.83	0.81	0.80		0.72	0.70	0.69	0.68
		(0.55-1.27)	(0.53-1.23)	(0.52-1.22)		(0.47-1.10)	(0.46-1.08)	(0.45-1.07)	(0.44-1.05)
Counselor provided college info		1.19	1.21	1.22		1.14	1.14	1.16	1.18
		(0.80-1.77)	(0.81-1.79)	(0.82-1.81)		(0.76-1.70)	(0.76-1.71)	(0.77-1.73)	(0.79-1.76)
Counselor discussed plans		1.13	1.13	1.13		1.22	1.22	1.22	1.21
		(0.77-1.65)	(0.77-1.65)	(0.77-1.65)		(0.83-1.79)	(0.83-1.79)	(0.83-1.80)	(0.83-1.78)
Future orientation									
College aspiration			1.37	1.24			1.17	1.00	0.99
			(0.80-2.33)	(0.68-2.27)			(0.68-2.03)	(0.54-1.86)	(0.53-1.83)
College expectation				1.21				1.35	1.37
				(0.70-2.08)				(0.78-2.36)	(0.78-2.30)
College preparatory behaviors				---				---	1.29
				---				---	(0.88-1.88)
Valid N				**690**	**Valid N**				**679**

Source: Texas Higher Education Opportunity Project (THEOP) Sophomore Cohort (2002, 2004)
-Graduation track = student's track will ensure he/she takes all courses necessary for college admission
-Friends plan to attend college = student has more than three friends who planned to attend high school

*p < .05, **p < .01, ***p < .001 -CI = 95% confidence intervals
-Parent education level = at least one parent studied beyond high school

Discussion

The current study explored the relationships between family, peer and school factors, college aspirations and college expectations, and college preparatory behaviors and college application among Texas high school students with the purpose of identifying predictors of college preparatory behaviors and college application in senior year. Overall, results indicated that those contextual factors at sophomore year that were most proximal to the student, namely family and friends, had the biggest influence on college preparatory behaviors and college application during senior year. In addition, the way in which context influenced college preparatory behaviors differed between Latino students and White students.

Correlates – Context and Future Orientation at Sophomore Year

Our initial task was to determine which, if any, future orientation and college preparatory behavior variables were associated with the contextual factors. Cross-sectional bivariate logistic regression analyses showed that the strongest associations existed between future orientation variables and those variables whose influences were most proximal to the student. Students who reported having a 3.0 GPA or higher, being enrolled in a graduation track that would prepare them for college, receiving parent, teacher or counselor encouragement to go to college and having at least three friends who planned to attend college, were more likely to report having college aspirations and college expectations during sophomore year. Furthermore, as expected, college aspirations and college expectations were strongly correlated. Students who would like to

go to college also think they will go to college and are more likely to take preparatory steps to get to college.

Our findings are consistent with previous research that established cross-sectional associations between context and college aspirations and expectations. These findings support the research of Alexander and Cook (1979), who claim that educational aspirations do not reflect a student's motivation to achieve, rather they reflect the availability of resources to achieve. In compliance with the notion proposed by Alexander and Cook, Ogbu (1991) suggests that marginalized groups have lowered educational aspirations because of real or perceived barriers to achievement and may not expect that educational attainment will lead to economic success. Although Ogbu's research focuses mainly on racial and ethnic minority groups, his theory can also be applied to students of low-SES backgrounds who may face many of the same barriers as other marginalized groups. Overall it is clear in our study, and in past studies, that Latino students had lower college aspirations than White students (Kao & Tienda, 2008).

Also consistent with prior research is the finding that proximal factors had stronger associations with students' college aspirations than factors that were more distal to the student. Mixed findings exist regarding the effect of counselors on student's educational aspirations (Grubb, 1996; McDonough 1997; Rosenbaum, Diel-Amen, & Person, 2006). On the other hand, previous research has found consistent, positive associations between parents and college aspirations and college preparatory behaviors (Hossler, Schmit, & Vesper, 1999; Klasik, 2012). Distal influences (e.g., counselors or

peers) may assume a more influential role in the absence of a helpful parent (Ceja, 2006; Perez & McDonough, 2008).

Predictors – Context at Sophomore Year and College Preparatory Behaviors and College Application at Senior Year

In the bivariate analyses, eight of the eleven contextual factors measured at sophomore year were significantly correlated with reporting having taken the SAT/ACT at senior year. The magnitude and level of significance were greatest for the relationship between college preparatory behaviors and parental influences, followed by college preparatory behaviors and sibling and friend influences, and finally by college preparatory behaviors and teacher and counselor influences. The difference in strength and significance between proximal and distal factors was even more pronounced when predicting college application. These findings reiterate the results from the cross-sectional bivariate analyses: the factors that are more proximal to the student have stronger associations with his/her college preparatory behaviors.

Far fewer of these relationships maintained statistical significance when all variables were included in the same model. However, even after controlling for all other variables, students' GPA and graduation track at sophomore year were important predictors of both taking college admissions tests and college application during senior year. This finding echoes the findings of previous studies.

Prior research has found academic achievement (i.e., GPA) to be among the strongest predictors of college application and enrollment even after controlling for

demographic and socioeconomic factors (Lopez-Turley, Desmond & Bruch, 2010). In addition to predicting college admissions testing and college application, achievement has also been found to predict other important steps in the college application process such as meeting with the counselor and applying for financial aid (Klasik, 2012). Students who are already inclined to do well in school may receive extra encouragement from family, peers and educators to go to college (Hossler, Schmit, & Vesper, 1999). Alternatively, students who underperform typically see school as less desirable (Finn, 1989) and are therefore less likely to want to continue their education. These contrasting school experiences can set students on diverging paths of cumulative advantage and cumulative disadvantage, respectively.

Little research is available regarding the effect of graduation track on college preparatory behaviors. Steele (2008) found that among students who aspired to go college in sophomore year, being enrolled in a graduation track that would ensure they would meet the minimum course requirement for college admission was associated with slightly lower odds of college application (OR=0.92, $p<.001$) after controlling for a variety of demographic and contextual variables. Among students who did not aspire to go to college in sophomore year, graduation track had no effect on college application (Steele, 2008). Although, graduation track was measured the same way in our study, our findings were very different. We found that being enrolled in a graduation track that would ensure the student met all the coursework necessary for college application in sophomore year was a strong positive predictor of college application in senior year. This topic merits more research as the Texas School Board is implementing less stringent graduation track

policies for high school students in the 2014-2015 school year (Weiss, 2014). Starting in the Fall of 2014, local school districts and students themselves will have the opportunity to plan their coursework for their four years of high school. This may be problematic for students and parents who do not have college aspirations before, or shortly after, entering high school.

With respect to a student's social context, parents seem to have the biggest impact on college preparatory behaviors and college application in senior year. In the overall sample, parents having studied beyond high school, parental encouragement to go to college and parental discouragement to go to college were all predictive of taking college admissions tests and applying to college in senior year even after controlling for all other contextual factors and future orientation variables.

The path connecting college aspirations and college application is complicated. Sufficient knowledge of this process includes knowing what the steps are and knowing the order and time at which they must be completed. Parents and significant others can be key sources of cultural and social capital for high school students by guiding them through the college application process (Klasik, 2012). However, students whose parents have less education may receive less guidance, encouragement and information about the college application process (Kao & Tienda, 1998).

The impact of parents on their child's college application is a combination of how capable they are to help (generally represented by parental education) and their expectations (generally represented by parental expectations or encouragement). It seems that both conditions must be present for a parent to positively influence a student's

college application. Prior research has documented lower odds of college application associated with both parents who want their child to go to college, but do not know how to navigate the college application process (Calaff, 2008), and parents who may be able to help their child navigate the college application process, but do not wish for their child to go to college (Lopez-Turley, Desmond & Bruch, 2010). The results from the current study show that both having a parent who studied beyond high school and having been encouraged by a parent to go to college were predictive of college application in senior year.

Influences of siblings and friends during sophomore year also predicted college preparatory behaviors and college application in senior year, while controlling for all other variables. This finding reinforces both conventional and empirical claims that peers matter (Stanton-Salazar & Spina, 2005). In a qualitative study of Chicano high school students in California, Ceja (2006) found many cases in which siblings replaced parents as information sources when parents could not assist their children with the college application process. By expanding their peer networks, students may connect with friends who are better informed about the college application process, or whose parents are more capable of providing assistance in navigating the college application process (Stanton-Salazar & Dornbusch, 1995). This may explain the finding that having more than three friends who planned to attend college was predictive of college application in the total sample and among White students.

One of the primary responsibilities of a high school counselor is to provide students guidance and encouragement throughout the college application process.

Approximately half of all the students in our study reported having met with a counselor in their sophomore year for reasons relating to educational plans. The bivariate analysis showed that students who discussed long-term educational plans with counselors or received encouragement to go to college from counselors were more likely to report college aspirations and expectations in sophomore year. However, when taking into account all of the other variables, these students were no more likely than other students to apply for college. This is in contrast to prior studies that have found a link between college application and communication with counselors. Bryan et al. (2011) found that the timing of communications with counselors was especially important as those students who had contact with a counselor by sophomore year were more likely to apply to college than students who visited a counselor after sophomore year. Additionally, students who visited a counselor by senior year were more likely to apply to college than students who had never visited a counselor. Their recommendation was that student-counselor contact be initiated early in high school (9^{th} or 10^{th} grade) so as to begin the formation of college aspirations (Bryan et al., 2011). Despite having made contact at the recommended time, students in the current study who communicated with counselors regarding future educational plans in sophomore year were not significantly more likely to apply for college during their senior year of high school. Neither the current study nor the Bryan et al. (2011) study explored the quality or details of the counselor-student interactions. However, future research is needed to explore the quality and nature of the counselor-student interactions in Texas.

Predictors – Future Orientation at Sophomore Year and College Preparatory Behaviors and College Application at Senior Year

Although the bivariate associations between the future orientation variables and college preparatory behaviors were statistically significant, the multivariate logistic regression analysis revealed that, in the overall sample, college expectations and college aspirations in sophomore year do not drive college preparatory behaviors and college application in senior year. This finding is particularly important as it suggests that whether or not a student applies to college is determined more so by family, friend and school influences (context), than by that student's educational goals (aspirations). Although prior studies find associations between college aspirations and college application (Bohon, 2006; Buriel & Cardoza, 1988; Perna, 2000), it seems clear in our study that aspirations do not drive college application when contextual factors are considered.

Perna and Titus (2005) explain that traditionally, college preparation programs aim to increase educational attainment through "developing the skills, knowledge, confidence, aspirations, and preparation that are needed to enroll in and graduate from college." Our study suggests that these intrapersonal phenomena (e.g., aspirations) may be less important than environmental factors. In support of this conclusion, in their review of college preparation programs, Gándara and Bial (2001) identified the following key components to successful programs: a close, caring relationship with a knowledgeable adult, access to college preparatory courses, peer support groups and scholarship assistance.

Ethnic Differences – Comparison of Predictors of College Preparatory Behaviors among Latino students and White students

The bivariate logistic regression analysis showed that Latino students were half as likely as non-Latino students to report college aspirations and college expectations during their sophomore year, and college preparatory behaviors at sophomore or senior year. Latino students were also 27.0% less likely to report having applied to college at senior year. Previous findings are mixed regarding educational aspirations of Latino students compared to non-Latino students. Although some studies have found that Latino students' college aspirations were comparable to non-Latino students' college aspirations, the majority of the literature has found that Latino students are less likely to aspire to go to college (Kao & Tienda, 1998; Qian & Blair, 1999).

Lower odds of reporting college preparatory behaviors and college application among Latino students in senior year, however, were accounted for when controlling for family, friend and school influences, gender, GPA, and graduation track. When all the variables were included in the model, having a 3.0 GPA or higher, having at least one parent who studied beyond high school and having been encouraged by a parent to go to college were all significant predictors of college preparatory behaviors and college application among Latino students. These findings align with prior research that established students' academic achievement (GPA) as a mediator of the influence of the parent-child relationship on college application among Latinos (Lopez-Turley, Desmond & Bruch, 2010).

Similar to Latino students, White students who reported having at least one parent who studied beyond high school and having a 3.0 GPA or higher were more likely to report having taken the ACT/SAT and having applied to college at senior year. Although being enrolled in a graduation track that ensured the student would meet the minimum course requirements for college admission was a predictor of college preparatory behaviors for both Latino and White students, it was a much stronger predictor for White students. Contrary to Latino students, graduation track predicted college application among White students. Finally, having siblings who had dropped out of high school and having more than three friends who planned to attend college were significant predictors of college preparatory behaviors and college application for White students, but not Latino students.

The role of *familism* may at least partially explain the differential effects of parental encouragement on college application between Latino and White students. Under *familism*, each member of the family is expected contribute to the good of the family, even above his/her own good (Fuller et al., 1996). Going to college (or applying to college) may satisfy the filial duties of a Latino high school student. Parental influence may be stronger in Latino families than White families if a parent knows how to navigate the college application process and would like that his/her child goes to college. As mentioned, peers and siblings of Latino students often assumed the role of guide when parents were unable to assist with the college application process (Ceja, 2006; Perez & McDonough, 2008). We were unable to explore the positive impact siblings may have

had on college preparatory behaviors and college application due to limitations in the data.

Implications for the Hopes and Fears Theory

The current study applied Nurmi's three-step future orientation process to guide the sequence of the models (Nurmi, 1991). Nurmi proposed that a student's aspirations form based on the norms, knowledge and environment by which he/she is surrounded. This step was supported by the bivariate analysis, as family, friend and school factors were associated with college aspirations. Subsequently, according to Nurmi, the student would cognitively construct a plan to realize that aspiration. We were unable to directly assess this step, as the THEOP questionnaire did not explicitly solicit this information. However, "planning" was accounted for in the following step. Next, a student would evaluate whether or not their plan would be feasible based on the resources to which he/she had access. We used college expectations as a proxy for the combination of planning and evaluation combined. A student would expect to go to college if he/she 1) cognitively created a plan of the steps necessary to go to college and 2) evaluated that plan as feasible. Bivariate analysis also supported this step as college aspirations and college expectations were highly correlated. Finally, according to the theory, the behaviors necessary to realize the goal would be executed following a positive evaluation of the plan. Bivariate analysis also confirmed this step, showing that college aspirations and college expectations were significantly associated with college preparatory behaviors and college application.

When we included all the variables in the model simultaneously, however, the relationships between college aspirations and college expectations and college preparatory behaviors and college application became nonsignificant. In other words, the results did not reflect a transition from the cognitive constructs of the theory to the subsequent behaviors that would, as the theory suggests, help the student realize the aspiration. The contextual variables were the true drivers of college preparatory behaviors and college admission, which undermines the idea that future orientation is the medium through which this happens.

Previous studies that used Hopes and Fears as a guiding framework did not follow the theory precisely. Qualitative work from Yowell (2000) and Behnke et al. (2004) explored educational aspirations and expectations among Latino adolescents, but did not explicitly study "planning" in their studies. In studies that compared the educational aspirations and expectations of different ethnic groups, Latino students consistently had lower aspirations than White students and other ethnic minorities (Hirschman et al., 2004; Kao & Tienda, 1998). More research is needed to show a link between the cognition-based constructs (i.e., aspiration, planning and evaluation) and the behaviors that they may dictate.

The results of the current study do not fully speak to the theory's ability to explain the future orientation process as it applies to the educational aspirations of high school students. First, we were reluctantly unable to incorporate emotional concepts such as *affect* and *optimism* into the models as the THEOP did not assess for these data. For this same reason, we were unable to provide a construct that appropriately represented what

Nurmi refers to as the "planning" stage. Instead we grouped "planning" with "evaluation" and used one item as a proxy for both. Primary data collection would have allowed us to ask questions specifically tailored to fit the constructs of Nurmi's theory. Finally, it was not the purpose of this study to test the theory, rather to use it as a guiding framework by which to organize the sequence of the future orientation variables. Future use of this theory should use multivariate analysis to verify whether the significance of associations between the constructs of the theory and contextual and behavioral variables are maintained when considering multiple variables.

Limitations

Though we consider the results of the current study valid and meaningful, we did encounter certain limitations. As mentioned above, the THEOP dataset did not include information regarding students' emotional status. As a result, we could not apply the theory exactly as Nurmi had proposed it. Had we been able to take emotions into account, it may have given us a better understanding of why college aspirations and college expectations did not predict college preparatory behavior and college application at senior year, when controlling for other variables. The use of self-report data is also considered a limitation. Because we performed secondary data analysis, it was impossible for us to verify students' responses. It would have been beneficial to contact parents, teachers and counselors, for example, to validate items that assessed students' interactions with parents, teachers and counselors. Similarly, we were not provided any details regarding the quality or nature of the interactions. A counselor's interactions with

students may vary greatly. For example, a counselor leading a school-wide assembly about college options and a one-on-one, counselor-student meeting to discuss college options would be represented the same way in the data. We were therefore unable to theorize *why* counselors did not predict college preparatory behavior and college application. An additional limitation was the number of college preparatory behaviors that we were able to consider was less than ideal. Other studies have included as many as nine steps in the college application process (Klasik, 2012) allowing for a more accurate look at which stage may be most problematic for students. It is worth noting that our findings were similar to those of Klasik (2012), so this may not have been a serious limitation. A considerable number of students were lost due to attrition due to the lack of complete data. It is possible that the students lost to attrition shared one or more characteristics that may have changed the results of the study had they been included. However, we made it a priority to include the variables that we believed were most important in the college application process, even if it decreased the sample size. Finally, we may have lost some of the variance in certain variables due to dichotomization. However, this allowed us to keep a parsimonious design. For example, parent education level was divided into two groups: at least one parent who studied beyond high school and no parents who studied beyond high school. By dichotomizing we sacrifice the ability to distinguish between the effects of having one parent with a at least a Bachelors degree compared to having at least one parent with a Masters degree – these two cases would fall into the same category: having at least one parent who studied beyond high school.

Strengths

Worth highlighting are the longitudinal nature of the study, the large, statewide representative sample and the number of variables we were able to include in the analysis. Preparing for college is a multi-step process that should start no later than sophomore year of high school. The THEOP two-wave cohort design provided us data related to behaviors and cognitions over time starting at the pivotal sophomore year and ending at the year by which all of the necessary college preparation steps should have been completed. The longitudinal nature and the multivariate analyses gave us the opportunity to go beyond associations and make predictions that suggest causal relationships between a student's context and his/her college preparatory behaviors. Additionally, we had complete data for over 2000 students, which allowed for the inclusion of many variables as well as the ability to stratify by ethnicity.

Implications

The overarching theme of our findings is that context matters with respect to college application. These findings have important implications for the field of higher education. Since parents were the most important contextual determinant of college application, it would behoove educators and administrators to make parents the focus of interventions that aim to facilitate college application among high school students. Latino students in particular could benefit from interventions that use parents as the agents of change as our research shows that Latino parents not only have a stronger influence on

their children, but friends and peers are less influential of college preparatory behaviors and college application among Latinos students than among White students.

Parental encouragement and discouragement to go to college are teachable behaviors. One example of a successful program that works with Latino parents is the Puente program in California (Gándara & Bial, 2001). Puente is a multi-level intervention built around a two-year college preparatory English class, a Puente counselor and a mentor program. Puente counselors work with students and parents during all four years of high school to ensure that students are completing the steps of the college preparation process and that parents have the information they need to support their child. Evaluations of the program show that students involved in the Puente program report more parental involvement and higher college enrollment rates than students who are not enrolled in the Puente program (Gándara & Bial, 2001). Students and educators attribute the program's success to the increased parental involvement and the support from the Puente counselor. A "close, caring relationship with a knowledgeable adult who monitors the student's progress" was the single most important component that successful college preparation programs had in common (Gándara & Bial, 2001).

Less modifiable predictors of college application such as parental education, GPA, and graduation track could serve as early identifiers for students who could benefit most from interventions. Although less modifiable, these factors could also be the focus of interventions. The effectiveness of college preparation programs on increasing achievement of the individual participants in unclear. However, group differences in achievement between program participants and non-participants have been found for

select programs (Gándara & Bial, 2001). Observational research suggests that achievement (i.e., GPA) mediates the relationship between the parent-child relationship and college enrollment (Lopez-Turley, Desmond & Bruch, 2010). Therefore, parent-focused interventions are likely to influence college application both directly through parental encouragement to go to college and indirectly through achievement.

Although counselor influences were not significant predictors of college preparatory behaviors and college application in our study, we acknowledge that counselors may be vital assets to students who would otherwise have nobody to help them navigate the college application process. Before exploring options to increase the number of students that have contact with counselors, additional research must be done to evaluate current barriers to success for high school counselors and why our findings may have differed from previous research that claims that counselors play a vital role of facilitating the development of college aspirations in young high school students (Bryan et al., 2011).

As mentioned above, there exists a gap (both real and theoretical) between college aspirations and expectations and college application. Approximately 85.0% of the students in our study reported having college aspirations and college expectations at sophomore year yet only two thirds of the students reported having applied to college by their senior year. Some researchers speculate that having college aspirations and expectations may have become the norm, causing a sort of "inflation" of college aspirations and expectations (Goyette, 2008). Others suggest that both real and perceived barriers of college enrollment may depress the motivation necessary to carry students

from aspirations to application (Ogbu, 1991; Lopez-Turley, Desmond & Bruch, 2010). Evidence to support or reject these hypotheses was beyond the scope of this study. Future research could investigate motivation at each stage of the college application process in order to test these theories.

Conclusion

The current study evaluated the relationships between family, peer and school influences, and college aspirations and college expectations on college preparatory behaviors and college application. Results demonstrated that the factors more proximal to the student, such as having at least one parent who studied beyond high school, parental encouragement to go to college and having more than three friends who planned to go to college in sophomore year, were strong predictors of future college preparatory behaviors and college application in senior year. Ethnic differences were also identified. Specifically, parental encouragement to go to college had a stronger impact on future college preparatory behaviors among Latino students while having more than three friends who planned to attend college and having at least one sibling who had dropped out of high school were more important in predicting college preparatory behaviors and college application among White students. While further research is still needed, these findings are important as they suggest the need to shift focus from counselors and future orientation to parents and achievement. The findings also suggest that different college preparatory interventions may be appropriate for Latino students and White students.

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