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DO WRAPAROUND SERVICES MEDIATE ACADEMIC ACHIEVEMENT  
FOR “AT RISK” LATINX YOUTH?

by

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THESIS

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ABSTRACT

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Maslow's hierarchy of needs theory provides the framework to examining the academic outcomes of at-risk students at a Latinx-serving Title 1 charter school in Houston, Texas which models itself as a Full Service Community School (FSCS). In this nonexperimental study, quantitative data was collected from student records and reports at the charter school and consolidated into a comprehensive database by a team of graduate and undergraduate students from the University of Houston Clear Lake (UHCL), under the supervision of the principal investigator, Dr. Desdamona Rios. Chi square and regression analyses were run to test six measures of academic achievement, including grade point averages (GPA) and performances on standardized tests, so as to assess the impact wraparound services have on mediating risk factors for students at this school. Findings indicate that gender, at-risk status, being an English Language Learner

(ELL), and participating in In-School Programs (ISP) most significantly predicted academic outcomes on these measures. This study contributes to the growing literature on FSCSs and concludes that the role these schools have in providing vital resources to at-risk students, who are often lacking certain basic needs, is critical to their success in their academics.

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## CHAPTER I: INTRODUCTION

According to Maslow's hierarchy of needs theory, for an individual to become "self-actualized," or to realize their full potential, they must first have their four basic needs met in order of necessity: physiological (food, rest), safety, love and belonging, and self-esteem (Maslow, 1958). Because these needs are hierarchically structured, when one set of basic needs has not been sufficiently met, those that follow will also be stifled and insufficiently met. This theory is a basic tenet of psychology and has been used to explain a variety of individual and group disparities. Maslow's theory is especially useful for explaining some of the economic and educational disparities that exist for marginalized and underserved groups and communities across the world.

There is a growing movement in education that emphasizes the need to take a more holistic-approach to educating students, especially ones who are already marginalized and underserved in society. Full-service community schools (FSCS) take an alternative approach to educating underserved students by first recognizing the needs of the "whole" student, including nutritional and safety needs, which must be addressed before educational ones can be prioritized. FSCSs have been found to mediate adverse social conditions for "at-risk" student populations by providing access to resources and extended support systems through partnerships with community stakeholders (Min, Anderson, & Chen, 2017). My thesis hypothesizes that one Latinx<sup>1</sup>-serving full-service community school located in Southeast Houston mediates at-risk factors for 6 through 12 grade Latinx students by providing wraparound services that aim to meet some of their basic needs. These wraparound services alleviate many stressors (e.g. hunger, safety

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<sup>1</sup> Latinx is a term intended to disrupt the gender binary and to demonstrate inclusivity of transgender members of the Latino/Hispanic community.



issues) and enhance students' academic self-concepts, which then leads to higher academic performance. My work adds to the growing literature on the benefits of FSCSs by providing a link between students' participation in full-service programs and academic achievement.

### **Literature Review**

The Latinx population is one of the most marginalized and underserved groups in the United States. The Pew Research Center estimates that as of 2018, the Latinx population represented the largest minority group in the U.S. with approximately 60 million individuals, or 18% of the total U.S. population (Flores, Lopez, & Krogstad, 2019). The majority of these are of Mexican origin (Bustamante, 2019; Bustamante, Flores, & Shah, 2019) and Latinxs are also the second largest growing population in the U.S. after Asian Americans (Flores, Lopez, & Krogstad, 2019), which makes addressing their needs and the systemic disparities they disproportionately experience even more critical to the overall growth and progress of the country.

Socioeconomic status (SES) and poverty are some of the most significant predictors of several life outcomes including educational attainment, vocational opportunities, and even health outcomes and mortality rates. Poverty is especially pervasive for Latinxs, with Pew reporting that as of 2017, 19% or around 1 in 5 Latinxs, were living in poverty in the U.S. (Bustamante, Flores, & Shah, 2019). Despite decreasing unemployment rates and increasing incomes, Latinxs' median household incomes are still significantly lower than their White counterparts (Fontenot, Semega, & Kollar, 2018), making the state of the economy one of the leading issues of concern among Latinxs (Lopez, Barrera, & Krogstad, 2018). Latinxs also experience high rates of racism and prejudice, with 78% report having experienced some form of discrimination; be that institutional such as denied employment or having unpleasant

interactions with law enforcement, or interpersonal ones such as being called a slur or otherwise insulted because of their ethnicity (Neel, 2017). Additionally, immigration and documented or “legal” status is a major source of anxiety and concern for some Latinxs. Pew estimates that as of 2017, there are around 10.5 million undocumented immigrants in the US and around 4.9 million of those are from Mexico (Passel & Cohn, 2019). Texas has the second largest population of undocumented immigrants, after California (Bustamante & Flores, 2019), and Houston alone is estimated to have an undocumented immigrant population of approximately 500,000 individuals (Passel & Cohn, 2017).

Academic disparities and achievement gaps are also a source of struggle for the Latinx community. According to a report done by the McCourt School of Public Policy at Georgetown University using data from the U.S. Census Bureau, Latinxs rank last in high school graduation and postsecondary education attainment, behind Whites and Blacks, and these gaps are only compounded when considering disparities in gender and socioeconomic status (Carnevale & Fasules, 2017). Pew also reports that despite Latinxs having the most dramatic decline in high school dropout rates over the past 20 years, they are still dropping out significantly more than their White, Black or Asian counterparts (Gramlich, 2017). Additionally, according to the National Center for Education Statistics (NCES), a federal entity which is a part of the U.S. Department of Education's Institute of Education Sciences (IES), achievement gaps between Latinx and White students' math and reading scores has persisted over the last 20 years, despite significant improvements in Latinxs' performance on these assessments (Hemphill, Vanneman, & Rahman, 2011). Pew also reports that 10%, or nearly 5 million students enrolled in public schools in the U.S. are English language learners (ELL), with the most common first language being Spanish (Bialik, Scheller, & Walker, 2018); and that 7.3% of all kindergarten through

12<sup>th</sup> grade students, or nearly 4 million, have at least one parent that is undocumented (Passel & Cohn, 2016).

In regards to the stress experienced by Latinx youth in educational settings, students have reported high rates of racism and discrimination that they perceived was the result of prejudice from their peers and educators (Fisher, Wallace, Fenton, 2000; Benner & Graham, 2011). They have also reported a lower sense of belonging within their school context when asked to consider their ethnic identity (Mallett, Mello, Wagner, Worrell, Burrow, & Andretta, 2011). Though Latinx youth have been found to participate less in extracurricular activities, those that do report a greater sense of connectedness to their school (Brown & Evens, 2002). Additionally, while conducting our research at a Latinx-serving school in Houston, I learned from administrators and staff that unlike their White middle-class counterparts, there are several non-academic demands placed on Latinx youth, such as working to supplement their family's income or childcare for younger siblings. Non-academic commitments such as employment can have significant negative impacts on students' academics, including their grades and attendance (Marsh & Kleitmen, 2005), and this may be useful in explaining some of the achievement gaps that exists between Latinxs and other groups. Fortunately, educators are beginning to recognize the need to address the unique challenges Latinx youths' face, and the importance of fulfilling their basic needs as a means of encouraging academic success.

### **A Lack of Basic Needs Puts Latinx Youth “At Risk”**

A student is considered “at-risk” if they are in danger of dropping out of school because of difficulties they experience in their academics (McMillan & Reed, 1994). The Texas Education Agency (TEA) determines that a student is “at-risk” if they meet at least one of 13 criteria, including not advancing a grade, not meeting standardized testing

requirements, being pregnant or a parent, being an English language learner (ELL), and nine others concerning academic or personal/living circumstances. Kaufman, Bradbury, and Owings (1992) produced one of the earliest comprehensive studies on at-risk students for the National Center for Education Statistics (NCES), and they identified some of the primary factors that contribute to students being at-risk including race/ethnicity, SES, family composition, and academic history. They found that failing to meet basic standards of proficiency in key subjects such as math or reading significantly contribute to students becoming at-risk of failure or dropout. Lucio, Hunt, and Bornovalova (2012) also conducted a study which identified 12 school related factors including academic engagement, school safety, grade retention, and deviant behavior that put students at a greater risk for academic failure, which they quantified as having a grade point average (GPA) of less than “2.00”. Their research found that students who experience at least two risk factors were at a much greater risk of academic failure and dropout than those who experience only one or none of them. The consequences of academic failure or drop-out as the result of “at-risk” factors can be devastating, especially for Latinx youth who are already subjected to institutional inequalities and disparities in employment, the legal system, and under a constant threat of violence or discrimination.

According to the Center for Research on the Education of Students Placed At-Risk (CRESPAR), around 15% of high schools in the U.S. produce approximately 50% of the nation’s dropouts, and what these schools have most in common are high percentages of students living in poverty. These schools also tend to be located in more urban settings and have a majority population of minority students (Balfanz & Legters, 2004). Latinx youth experience higher rates of poverty than their White counterparts (Patten & Krogstad, 2015), especially in urban settings where they can be vulnerable to food insecurity and environmental unsafety. Several health and well-being related

conditions, including inadequate access to healthy food, a greater consumption of fast food and soda, poor sleep quality, and feeling unsafe in one's neighborhood, have been found to put Latinx youth at a greater risk of failing to meet minimum requirements for standardized tests (Ickovics, Carroll-Scott, Peters, Schwartz, Gilstad-Hayden, & McCaslin, 2014). Students who live in lower-income neighborhoods are more vulnerable to experience violence or community unrest (Bowen & Chapman, 1996; Schmitz, 1992), and the impact can be devastating on a student's ability to focus or even find value in their education. Battin-Pearson, Newcomb, Abbott, Hill, Catalano, and Hawkins (2000) found that deviant behavior such as violence or drug use, antisocial friendships, and poverty directly and significantly predicted early dropout, in addition to 6 other predictors that mediated low academic achievement including early dropout. Students feeling safe in school is also a major concern for educators. According to Hughes, Gaines, & Pryor (2015), Latinx youth reported the highest levels of concern for bullying as a major reason for avoiding school and skipping classes.

A lack of basic needs means Latinx students are exceptionally at risk of academic failure, dropout, and other disparities. The federal government recognizes these disparities, as well as the role schools must have in providing assistance that will meet some of these students' basic needs. For example, the National School Lunch Program provides students who are living at or below the poverty line with a free or reduced lunch during school (USDA Food and Nutrition Service, 2018). The U.S. Department of Education (2015) also allows schools with at least 40% of students that are low-income, be eligible for Title 1 federal funding for other targeted programs that are geared toward addressing these students' academic needs. As educators are increasingly recognizing the systemic and environmental factors that contribute to educational disparities among Latinx youth, there is a growing movement that is working to develop alternative models

of education which emphasize more holistic and comprehensive approaches to addressing the needs of vulnerable and at-risk students.

### **Full-Service Community Schools**

Berry (1993) argues that schools must go beyond addressing academic or curricular disparities among students by considering factors outside the school setting. Full-service community schools (FSCS) are a growing initiative in education designed to address the needs of the “whole” student, particularly among those in urban schools with large populations of racial or ethnic minorities or low SES groups (Biag & Castrechini, 2016). One objective of the FSCS model is to facilitate collaborative partnerships between the school and its surrounding community (Min, Anderson, & Chen, 2017; Peebles-Wilkins, 2004). Because these schools are designed to address the specific needs of individual communities, there is not a single operational definition of FSCSs in the literature (Min, Anderson, & Chen, 2017). The U.S. Department of Education (2018) describes these schools as providing comprehensive academic programs such as remedial education and enrichment activities, family engagement, mentoring and youth development, vocational and community service opportunities, nutrition and healthcare services, counseling, adult and language educational programs, and many more. Because the FSCS model is still a growing movement within education, research is limited on how effective they are on students’ educational and vocational outcomes (Min, Anderson, & Chen, 2017). However, there is some evidence that demonstrates the positive impact this model of education can have on marginalized and underserved students.

Biag and Castrechini (2016) found that FSCSs improve attendance rates and grades for at-risk Latinx students. Houser (2016) also found that students who attend FSCSs and participate in more community and school-sponsored programs tend to have higher end-of-year GPAs than those that don’t participate in these programs. Some full-

service initiatives include services not intended to directly address students' academic needs, but still end up having a positive impact on students' academic and educational experiences. For example, programs designed to provide youth-development and mental health services to students of color have been found to lead to higher GPAs (Parchment, Jones, Del-Villar, Small, & McKay, 2016). For Latinx students specifically, addressing English-language learner (ELL) students' social-emotional needs has also been shown to improve their grades, even more than programs that address their English-language proficiency (Castro-Olivo, Preciado, Sanford, & Perry, 2011). Participation in extracurricular activities has also been found to promote a sense of belonging and school connectedness for at-risk urban youth (Daly, Buchanan, Dasch, Eichen, & Lenhart, 2010). Newton, Thompson, Oh, and Ferullo (2017) posited that for students considered at-risk, community-school partnerships can provide resources and opportunities to build their social capital within their own community. They found that by fostering students' social capital through these partnerships, students reported greater feelings of hope in their academics as well as a general sense of belonging to their school. When students are given the resources and opportunities to partner with their community, grow their social capital and feel a sense of belonging to their school, they become more active and engaged within their school and are further incentivized to succeed in their academics. By working to address at-risk Latinx students' basic needs, including providing them with a space that makes them feel safe, engaged, and part of a community, FSCSs can help to improve their academics as well as their overall development and put them on a path toward a more promising future.

### **An Example from Houston**

George Sanchez Charter School is a Latinx serving school in Southeast Houston, Texas, whose mission is to empower and provide necessary resources to its students and

the greater community it serves. The school was established in 1973 by the Association for the Advancement of Mexican Americans (AAMA) in response to vulnerable Latinx youths in Houston's East End. AAMA has since opened one satellite location in Northeast Houston, as well as in other areas of Texas, including San Antonio and Laredo. AAMA also provides a multitude of other services, such as healthcare and adult-education programs. For services they don't directly provide, such as legal or employment assistance services, they collaborate with local businesses and community organizations.

George Sanchez Charter School currently serves over 700 students, including pre-kindergarteners and students grades 6 through 12. The majority of their students are considered at-risk for reasons such as poverty, low academic performance, behavioral and substance abuse issues, and being English language learners. George Sanchez is considered a Title 1 "alternative" school and many of their students have been referred to them by other schools or by the juvenile court system. Although it is a charter school, no student is turned away so long as the school has the space and resources to accommodate them. The school serves a large portion of immigrant students from Mexico and Central America, as well as their parents and other members of their households. The school's administrators, faculty and staff are trained to provide an intimate, welcoming, and encouraging environment and to establish a positive rapport with all students. In addition to improving their students' academics, their goals are to provide a refuge from outside stressors by addressing the unique and daunting challenges they face in their everyday lives. The school provides a number of what they refer to as "wraparound services", or programs and services used to provide many of the students' basic and academic needs. These services and programs function as buffers for some of the economic and social



adversities the students regularly experience, while also preparing and empowering them for life after they graduate.

## CHAPTER II: CURRENT STUDY

The present study was conceived as the result of an ongoing collaborative relationship between George Sanchez Charter School and Dr. Desdamona Rios, Associate Professor of Psychology and Director of Latinx and Latin American Studies at the University of Houston Clear Lake (UHCL). Data collection was coordinated with the help of key staff and administrators at George Sanchez, which was then entered into a comprehensive database by a team of graduate and undergraduate research assistants from UHCL's psychology program under the supervision of Dr. Rios. The goals of this project were developed through initial meetings with George Sanchez's administration, members of their staff, Dr. Rios, and the two graduate lab managers of the study, Elizabeth Rainey and me. Permission to conduct the study on the charter school's campus was granted by AAMA's Chief Executive Officer, Beatriz Garza, and the charter school's Superintendent, Margaret Rodriguez, and principle, John De La Cruz, and research assistants and lab managers were vetted through AAMA's volunteer application process. The study was approved by UHCL's Committee for the Protection of Human Subjects.

My role in the project was substantial. I joined Dr. Rios's research lab in Fall 2015, my first semester of graduate school and right as this project was beginning. The first year of the project, from Fall 2015 to Spring 2016, was dedicated exclusively to data collection wherein Dr. Rios, Elizabeth, and myself would visit the George Sanchez campus twice a week for 4 hour data collection and entry sessions. Preliminary analyses from this first year of data was used to present at UHCL's 22<sup>nd</sup> Annual Student Conference for Research and Creative Arts in April 2016, and at The Society for the Psychological Study of Social Issues (SPSSI) conference in June 2016. The second

academic year, six undergraduate research assistants (RAs) joined the project and assisted us in entering data from student files. At this point, Elizabeth and I were promoted to lab managers wherein we were tasked with directing and training RAs and supervising the overall progress of the project. Upon completing the data entry phase, we began the data cleanup and analysis phase in the Fall 2017. Elizabeth completed her role as co-manager to focus on her clinical studies, and I became the lead lab manager of the project. In this role I oversaw the data cleanup phase, which included at least 2 weekly lab meetings where I would instruct new and continuing RAs on the process of recoding variables in Microsoft Excel and the Statistical Package for the Social Sciences (SPSS), the statistical program used for this project. Research assistants were trained to identify variables they were interested in analyzing, and I instructed and supervised them on the recoding process, interpreting results within the context of the project, and assisted them in developing and writing symposium presentations for a student conference. My final role in the project was to finish any remaining data that needed to be cleaned or recoded, which I completed in the Summer 2019. The database is now being used by a team of professors and researchers from UHCL for manuscript writing, of which I am a co-author, with the goal of having these manuscripts published in professional academic journals.

### **Participatory Action Research**

This study was conducted using the principles and methods of participatory action research (PAR). PAR is thought of as community-oriented research where there is a collaborative effort between the researchers and the members of the community being researched in developing the goals and methods of the research project. Some basic tenants of PAR include working to equalize the power imbalance between the researcher and those being researched, and to engage communities that have been historically

oppressed or marginalized with the ultimate goal of pursuing real social change for the community (Miller, 2001). We let these principles inform the core ethos of how we conducted our research and this proved invaluable when it came to defining the goals and scope of the project, as well as our ability to establish trust and work collaboratively with the school.

The administration and staff at George Sanchez were interested in better understanding and documenting how their wraparound services were benefitting their students academically and otherwise. They sought this information so as to better understand how they could most effectively and efficiently serve their students, where they should focus their limited resources, and provide documented evidence of their successes when applying for grants and other sources of funding. They knew the services they provide their students were working, as demonstrated by dramatic improvements in graduation rates from 50% in 2010 to 89% in 2015, and reduced dropout rates of 24% in 2010 to 8% in 2015 (TEA School Report Card, 2011; TEA School Report Card, 2016), and were interested in a detailed analysis of the improved academic outcomes. In one of the first meetings we had with Mr. De La Cruz, he expressed frustration over their struggles to reach students before it was “too late.” Therefore, the partnership between the charter school and UHCL researchers sought to provide insight on predictors of academic success.

### **Procedure**

The quantitative data used in this study came from standard student data collection required by the Texas Education Agency (TEA) as well as the school’s internal records on students’ participation in wraparound services. As we acquired greater familiarity and understanding of the school, the students, and the data we were collecting, data collection and entry procedures evolved and were adjusted according to the

broadening scope of the project and continued collaboration with the school. This meant that data collection took several iterations over two academic years, and the project itself encompassed several different phases.

We identified over 70 variables related to student demographics, academic measures and participation in wraparound services. The intention of identifying these specific variables was to examine relationships between demographic variables, at-risk factors, wraparound services, and academic outcomes. All data entered remained at the charter school's campus, meaning the research team would schedule weekly on-site data-entry days, which included reserving work rooms and computers with the school's administrative assistants. We did not interact directly with students, but rather our role was to collect reports from various units on the campus and consolidate them into a comprehensive database on the students. A database was created using Microsoft Access and was designed by the school's information technology (IT) department, in collaboration with the principal investigator and two lab managers. This database was securely stored in the charter school's server, which meant it could only be accessed through a login procedure by computers that were connected to the school's server on campus. The database allowed us to create profiles for each student that had been enrolled during the 2015-2016 academic year. These profiles were distinguished from each other using student identification numbers that the UHCL research team generated for them, and that could not be traced back to the students themselves. The research team went to great lengths to ensure the data was kept safe and that the identities of the students were protected and confidential throughout the data-entry phase, and this diligently continued once we began to cleanup and analyze the data.

Research assistants were trained using instructional materials developed by Elizabeth Rainey and myself. These materials included guidelines on how to request and

enter data from various sources and reports, information on appropriate and professional on-site conduct, the sensitive nature of the project and the importance of confidentiality, and finally on the principles and practices of participatory action research. It was also important that we emphasized the collaborative nature of the project to the research team, that they understood we were guests at the school, and we needed to be courteous and flexible with how the school was able to accommodate us.

Given that we were working with many different types of data and reports, it was also important that a consistent and standardized procedure of data collection and entry was implemented. A data-entry manual was created by Elizabeth and me, which gave instructions on how to log into the server to access the database, sign-out computers for use, request materials from members of the school's staff, as well as how to enter the data from different units on campus. A progress tracker was also created to keep track of the reports and files we were accessing, and this ensured that any discrepancies or deviations from the standardized procedures could be easily identified and immediately corrected. Research assistants were also given a copy of the codebook that was created by the principal investigator and lab managers, which included descriptions of the variables and the corresponding codes. Some of the codes were ones that were created by AAMA, the TEA, and others were created by the lab managers and principle investigator.

### **Analytic Plan**

I used chi square, multiple linear regression, and logistic regression to test my hypotheses. My hypotheses were developed from prior research which demonstrates that girls tend to get better grades in school (Voyer & Voyer, 2014; Lucio, Hunt, & Bornovalova, 2012) and perform better in standardized tests for reading (Husain & Millimet, 2009); whereas boys tend to perform better on standardized tests for mathematics (Fryer & Levitt, 2009; Husain & Millimet, 2009). White students also tend

to do better academically than Latinx students, including receiving higher GPAs and standardized test scores (Hemphill, Vanneman, & Rahman, 2011; White, Stepney, Hatchimonji, Mocer, Linsky, Reyes-Portillo, & Elias, 2016). Regarding participation in after school and in-school activities and programs, Meier, Hartmann, and Larson (2018) found that boys tend to participate less in extracurricular activities, although boys and girls are increasingly participating equally in sports-oriented activities, and girls participate more in academically-oriented ones. Darling, Caldwell, and Smith (2005) also found that White students participate in more extracurricular activities than Latinxs, but Latinxs that do participate report a greater sense of connection to their school (Brown & Evans, 2002), and have better academic outcomes (Riggs & Greenberg, 2004). Research on the impact of participation in in-school services and programs has on academic measures is difficult to find in the literature, because these vary for each school, therefore analyses on these will be exploratory.

### **Chi Squares**

Chi-square analyses were conducted to test for significant differences between groups for each variable including differences of academic outcomes for gender, race, socioeconomic status (SES), at-risk and English Language Learner (ELL) status, and participation in After School Programs (ASP) and In-School Programs (ISP). Using this method of analysis, I tested the following hypotheses.

Hypothesis 1 (Gender): There will be a significant gender difference for GPA and STAAR scores. Girls will have be more likely to have passing GPAs and Reading and English STAAR scores compared to boys; and boys will be more likely to have passing Math and Algebra STAAR scores compared to girls.

Hypothesis 2 (Gender): There will be significant gender differences for participation in wraparound services, with girls participating more in both ASPs and ISPs than boys.

Hypothesis 3 (Race): There will be significant race differences for GPA and STAAR scores. Students who identify as White will be more likely to have passing GPAs and STAAR scores than students who identify as Native American or Other.

Hypothesis 4 (Race): There will be significant race differences for participation in wraparound services, with students who identify as White participating more in both ASPs and ISPs, than students who identify as Native American or Other.

### **Multiple and Logistic Regression**

Multiple and logistic regression analyses were used to determine if gender, race, SES, at-risk and ELL status, and participation in ASPs and ISPs could predict GPA and STAAR scores. The difference between multiple and logistic regression, and the reason both were used in my analyses, pertains to the type of data that can be appropriately used as a dependent variable for either analysis. For multiple regression, the dependent variable must be continuous, meaning it can be any value between 0 and infinity, and the numbers themselves are not coded or representative of anything other than as a measurement of what is being observed. For logistic regression, the dependent variable must be dichotomous, meaning it has to be binary in nature and the numbers are coded, or representative of, two different and usually opposite outcomes (e.g. pass/fail). Both were used because we were given students' raw end-of-year GPA scores which could be used for multiple regression analyses, as well as STAAR scores that were based on a 4-point scoring system, which was then recoded into dummy pass/fail variables that could be used for logistic regression analyses.



Some important things to note about the predictor variables used in these analyses; all predictor variables, except for “In-School Programs (ISP),” were coded dichotomously. The predictor variable “Female” was coded as 1= female and 0= male. The reference category for examining race identification was “White,” therefore the predictor variable “Native American” was coded as 1= Native American and 0= White or Other. The “Other” predictor variable was coded as 1= Black, Native Hawaiian/Pacific Islander, or Multiracial, and 0= White or Native American. “Low-socioeconomic status (SES),” “At-Risk” status, and “English Language Learner (ELL)” status were coded as 1= qualifies as and 0= does not qualify as. “After School Programs (ASP)” were coded as 1= participates and 0= does not participate. Because 100% of students participated in “In-School Programs (ISP)” and this led to an issue with variability in the analyses, an alternative linear variable was created based on how many programs students participated in, from 1 to 7. Using these codes and methods of analyses, I tested the following hypotheses.

Model 1: Gender, race, and socioeconomic status (SES) as predictors of academic outcomes.

Hypothesis 5: Girls, White students, and students who are not economically disadvantaged will have better academic outcomes, including higher GPAs and be more likely to pass the STAAR Reading and English exams, than boys, students who identify as Native American or Other, and are economically disadvantaged.

Model 2: Being at-risk and an English Language Learner (ELL) as predictors of academic outcomes.

Hypothesis 6: Students who are not at-risk and students who are not ELL will have better academic outcomes, including higher GPAs and be more

likely to pass the STAAR exams, than students who identify as Native American or Other, economically disadvantaged students, students not at-risk and not ELL.

Model 3: Participation in After School Programs (ASP) and In-School Programs (ISP) as predictors of academic outcomes.

Hypothesis 7: Those who participate in ASPs and ISPs will have better academic outcomes, including higher GPAs and be more likely to pass the STAAR exams, than those that do not participate in these services.

### **Measures**

Data and analyses were derived from a sample of 516 students, grades 6 through 12, who were enrolled for the full 2015-2016 academic school year at George Sanchez.

#### **Demographics.**

Demographic data such as students' gender, race/ethnicity, and socioeconomic status (SES) were collected from student records, including admission applications and other reports provided by the charter school. Of the 516 students who were included in these analyses, 52% identified as female and 48% identified as male, no non-binary or transgender options were provided. Most students were also considered to be at or below the poverty line, with approximately 91% qualifying for free or reduced lunch or other food assistance services. This means that most students were low-SES, which designates George Sanchez as a Title I charter school. Approximately 83% of students were also considered at-risk, meaning they were more vulnerable to dropout because they met at least one of 13 criteria, as determined by the Texas Education Agency (TEA).

The majority of students, approximately 97%, were identified by the school as Latinx. Included in students' admissions applications was a form that asked them to identify their race. They were given the options: "White," "American Indian/Alaska

Native,” “Asian,” “Black/African American,” and “Native Hawaiian/other Pacific Islander”. Each option was designated a code for the purpose of data entry and some students selected multiple options so were therefore coded as multiracial. No students identified themselves as “Asian,” so this category was eliminated from consideration. I collapsed race into three categories with the largest group sizes. Those that identified as “White” were coded as White; those that identified as “American Indian/Alaska Native” were coded as Native American; and those that identified as “Black/African American,” “Native Hawaiian/Pacific Islander,” and multiracial were coded as Other. Within those categories, 53% identified as White, 40% identified as Native American, and 7% identified as Other.

### **Wraparound Services.**

Wraparound services is an umbrella term George Sanchez uses to describe the comprehensive services and programs they provide to their students that assist them with many of their basic needs. These include academic and non-academically oriented services, as well as those provided either directly through the school, through outside community partnerships with the school, or by adjacent projects headed by AAMA. We obtained student participation information from reports and rosters provided by George Sanchez’s office of student records. Our database identified 24 wraparound services. For the purpose of my analyses, I consolidated these into two categories: In-School Programs (ISPs), or those that were provided during regular school hours; and After School Programs (ASPs), or those that were provided outside of regular school hours, such as after-school or on weekends. Eleven programs and services were grouped into the ISP category, and some examples include free/reduced lunch, counseling, child care, and pullout tutorials (see Appendix A for descriptions of each program and service included within the ISP category). Thirteen programs and services were grouped in to

the ASP category, including such examples as Credit Recovery, Cheerleading/Dance Team, and the Science Club (see Appendix B for descriptions of each program and service included within the ASP category). Dummy variables were then created for both the ASP and ISP categories. If a student's records indicated that they had participated in or received services from one or more of the ASP or ISP services, they were given a code of 1 to represent they had received these services; if their records did not indicate they had participated in or received a service for either an ASP or ISP service, they were given a code of 0 to represent they hadn't received these services. An additional linear variable was created for the ISP category, which added up the number of programs and services each student was receiving. Participation in ASPs or ISPs were included as predictors of academic outcomes in the regression analyses.

### **Academic Outcomes.**

For the purpose of this study's analyses, six different measures were used to assess academic outcomes based on 2015-2016 data. Those include end-of-year grade point averages (GPA) and standardized test scores. Raw GPA scores were used for multiple regression models but for the chi-square analyses, GPAs were recoded into a pass/fail dummy variable. As cited previously, Lucio, Hunt, and Bornovalova (2012) found that those with GPAs of less than 2.00 were at a greater risk of dropout and academic failure. For the purposes of my analyses, those with a GPA of 2.01 or higher were given the code 1 to indicate passing, and those with a GPA of 2.00 or lower were given the code 0 to indicate not passing. Overall, approximately 88% of students were receiving a passing GPA.

Regarding the standardized tests that I used for my analyses, the Texas Education Agency (TEA) is responsible for administering the State of Texas Assessments of Academic Readiness (STAAR) exams, which are used to assess students' achievements

and knowledge learned in each grade level. Middle schoolers grades 6 through 8 are required to pass general “core subject” exams each year, including Math and Reading, so as to advance to their next grade. High schoolers grades 9 through 12 are required to pass End of Course (EOC) exams, including English 1, English 2 and Algebra 1, so as to meet requirements for graduation. We were not provided with students’ raw exam scores. Instead, students’ exam performances were presented based on a four-point scoring system that categorized them as having not met standards, approached standards, met standards, or mastered standards. I recoded this four-point scoring system into pass/fail dummy variables for each exam. Therefore, the STAAR exams were recoded with those that approached, met, or mastered standards given the code 1 to represent having passed the exam, and those who didn’t meet standards were given the code 0 to represent having not passed the exam. These recoded binary variables were used for both the chi square analyses, and as dependent variables for the logistic regression analyses.

## CHAPTER III:

### RESULTS

Chi square and regression analyses were performed to test the hypotheses. Results of these are presented here, followed by a discussion of their implications and how they connect to previous literature.

#### **Chi Square Results**

When examining differences in students' GPAs and STAAR scores, 505 students were considered for these analyses because 11 had to be removed due to missing or incomplete data. Among those, approximately 90% or a total of 454 students, had a passing GPA of 2.01 or higher. Regarding STAAR exams, approximately 50% of the 124 students who took the Reading exam passed; 38% of the 114 students who took the Math exam passed; 29% of the 132 students who took the English 1 exam passed; 35% of the 116 students who took English 2 passed and finally, 50% of the 80 students who took Algebra 1 exam passed. These numbers indicate what administrators, teachers and staff already knew; that despite success in some academic measures, passing standardized exams was a significant challenge for students at George Sanchez. When examining differences in students' participation in After School Programs (ASP) and In-School Programs, complete data was available for all 516 students and therefore, none had to be removed for these analyses. The data indicates that 46% of students participated in or received After School Programs (ASP) and services, and 100% of students were participating in or receiving In-School Programs (ISP) and services. These participation rates clearly demonstrate that the students are utilizing the services and programs that are provided to them at George Sanchez.

Chi-square analyses were used to examine the differences between boys' and girls' GPAs and STAAR scores. Among the 454 that were passing, 55% were girls and

45% were boys, and the difference between these two was statistically significant,  $\chi^2 (2, n = 454) = 13.79, p = .00$  (see Table 1), meaning girls were more likely to have passing GPAs than boys (see Table 2 for crosstabs). There were also differences in STAAR scores between boys and girls with more boys who passed the Reading and Math exams than girls; and more girls who passed the English 1, English 2, and Algebra 1 exams than boys, but none of these differences were statistically significant.

Table 1:

*Gender Differences in Academic Outcomes*

	% Female	% Male	$\chi^2$	Sig.	V
Passing GPA (n = 454)	55	45	13.79	.00*	.17
Passing STAAR Reading (n = 62)	45	55	.03	.86	.02
Passing STAAR Math (n = 43)	49	51	.47	.49	.06
Passing STAAR EOC English 1 (n = 38)	58	42	.68	.41	.07
Passing STAAR EOC English 2 (n = 41)	59	41	.90	.34	.09
Passing STAAR EOC Algebra 1 (n = 40)	57	43	.80	.37	.10

*Note.* For each measure of academic outcome, a Pearson chi-square was used to test the significance of the difference between male and female students.

\* $p < .05$ .

Table 2:

*Gender and Passing GPA Crosstab*

	Female		Male	
	Freq.	%	Freq.	%
Not Passing GPA	14	5	37	15
Passing GPA	249	95	206	85
Total	263	100	242	100

Differences were also found for participation in ASPs and ISPs between boys and girls. More girls participated in ASPs, with 55% of girls compared to 45% of boys; as well as ISPs, and 52% of girls compared 48% of boys. However, these differences were not found to be statistically significant (see Table 3).

Table 3:

*Gender Differences in Participation*

	% Female	% Male	$\chi^2$	Sig.	V
After-School Participation (n = 238)	55	45	1.67	.20	.06
In-School Participation (n = 515)	52	48	1.07	.30	.05

*Note.* For each measure of participation, a Pearson chi-square was used to test the significance of the difference between male and female students.

\* $p < .05$ .

No significant differences in GPAs or STAAR exams were found between White students, Native American students, and students who identified as Other (see Table 4). Of the 454 students who had passing GPAs (see Table 5 for crosstabs), 54% identified as White, 41% identified as Native American, and 5% identified as Other however, these differences were not statistically significant. Similar patterns can be found with the STAAR exams, where more White students were passing compared to Native American and Other students, although none of these differences were statistically significant. The only exception is the STAAR English 1 exam, where of the 38 students who passed that exam, 50% identified as Native American, 47% identified as White, and 5% identified as Other. The differences for the STAAR English 1 exam were not found to be statistically significant.



Table 4:

*Race Differences in Academic Outcomes*

	% White	% Native America	% Other	$\chi^2$	Sig.	V
Passing GPA (n = 454)	54	41	5	3.30	.19	.08
Passing STAAR Reading (n = 62)	63	32	5	1.73	.42	.12
Passing STAAR Math (n = 42)	58	37	5	.07	.97	.03
Passing STAAR EOC English 1 (n = 38)	47	50	3	.75	.69	.08
Passing STAAR EOC English 2 (n = 41)	61	39	0	.64	.73	.07
Passing STAAR EOC Algebra 1 (n = 40)	55	40	5	.05	.97	.03

*Note.* For each measure of academic outcome, a Pearson chi-square was used to test the significance of the difference between White, Native American, and Other students.

\* $p < .05$ .

Table 5:

*Race and Passing GPA Crosstab*

	White		Native American		Other	
	Freq.	%	Freq.	%	Freq.	%
Not Passing GPA	27	10	18	9	6	19
Passing GPA	243	90	186	91	25	81
Total	270	100	204	100	31	100

No significant differences were found in participation in ASPs and ISPs among White, Native American, and Other students (see Table 6). Among the 238 that participated in ASPs, 54% identified as White, 39% identified as Native American, and 7% identified as Other. Among the 515 students that participated in ISPs, 53% identified as White, 40% identified as Native American, and 7% identified as Other. These two trends indicate that more White students participated in ASPs and ISPs compared to Native American and Other students, though Pearson chi square analyses did not find these differences statistically significant.

Table 6:

*Race Differences in Participation*

	% White	% Native America	% Other	$\chi^2$	Sig.	V
After-School Participation (n = 238)	54	39	7	1.26	.53	.05
In-School Participation (n = 515)	53	40	7	1.48	.48	.05

*Note.* For each measure of academic outcome, a Pearson chi-square was used to test the significance of the difference between White, Native American, and Other students.  $p < .05$ .

### Multiple Regression Results

Multiple regression analyses were performed to test the impact gender, race, socioeconomic status (SES), at-risk and English Language Learner (ELL) status, and participation in After School Programs (ASP) and In-School Programs (ISP) have on students' end-of-year GPAs. Model 1 tested gender, race, and SES as predictors of GPA; model 2 tested gender, race, SES, at-risk and ELL as predictors of GPA; and model 3 tested gender, race, SES, at-risk, ELL, and participation in ASPs and ISPs as predictors of GPA. Table 7 summarized the descriptive statistics and Table 8 provides the results of the regression analyses.

All three models produced significant regression equations, with the first model producing,  $F(4, 474) = 8.105$ ,  $p = .00$  and an  $R^2$  of .064; the second model producing,  $F(6, 318) = 8.18$ ,  $p = .00$  and an  $R^2$  of .13; and the third model producing,  $F(8, 318) = 6.76$ ,  $p = .00$  and an  $R^2$  of .15. For all three models, gender was found to be a significant predictor of GPA, with girls more likely to have higher GPAs ( $M = 2.99$ ,  $SD = .59$ ) than boys ( $M = 2.67$ ,  $SD = .68$ ). For the first model, gender positively predicted GPA ( $B = .32$ ,  $t(4) = 5.53$ ,  $p = .00$ ); as well as for the second ( $B = .27$ ,  $t(6) = 4.12$ ,  $p = .00$ ); and the third ( $B = .28$ ,  $t(8) = 4.24$ ,  $p = .00$ ). Models 2 and 3 indicate that being at-risk and being an English Language Learner (ELL) significantly predict GPA as well. For the second

model, being at-risk predicted GPA ( $B = -.34$ ,  $t(6) = -3.51$ ,  $p = .00$ ); as well as for the third model ( $B = -.33$ ,  $t(8) = -3.39$ ,  $p = .00$ ). These results indicate that those who were not at-risk were more likely to have higher GPAs ( $M = 3.30$ ,  $SD = .53$ ), than those that were at-risk ( $M = 2.75$ ,  $SD = .63$ ). Being an ELL student also predicted GPA ( $B = -.16$ ,  $t(6) = -2.20$ ,  $p = .03$ ) for the second model; and the third ( $B = -.16$ ,  $t(6) = -2.26$ ,  $p = .03$ ). These indicate that students who were not ELL were more likely to have higher GPAs ( $M = 2.96$ ,  $SD = .62$ ), than those who were ELL, ( $M = 2.70$ ,  $SD = .62$ ). The final significant predictor of GPA was participation in ISPs ( $B = -.06$ ,  $t(8) = -2.04$ ,  $p = .04$ ). This indicates that students who participated in fewer ISPs had higher GPAs ( $M = 2.85$ ,  $SD = .66$ ) than those who participated in more ISPs ( $M = 2.82$ ,  $SD = .64$ ). Race, SES, and participation in ASPs were all found to not significantly predict GPA across any of the three models.

Table 7:

<i>GPA Summary Statistics</i>		
	M	SD
Female (n= 263)	2.99	.59
Male (n= 242)	2.67	.68
White (n= 270)	2.86	.65
Native American (n= 204)	2.83	.65
Other (n= 31)	2.63	.69
Not low-SES (n= 17)	2.66	.69
Low-SES (n= 462)	2.86	.64
Not At Risk (n= 75)	3.30	.53
At Risk (n= 421)	2.75	.63
Not ELL (n= 182)	2.96	.62
ELL (n= 166)	2.70	.62
Not ASP (n= 270)	2.82	.68
ASP (n= 235)	2.86	.62
>= 2 ISP (n= 265)	2.85	.66
=>3 ISPs (n= 239)	2.82	.64

Note: Passing was coded as 0 = not passing (GPA  $\leq 2.00$ ) and 1 = passing (GPA  $\geq 2.01$ )

Table 8:

*Multiple Regression Predicting GPA*

	Model 1 (n= 479)			Model 2 (n= 325)			Model 3 (n= 325)		
	B	SE B	$\beta$	B	SE B	$\beta$	B	SE B	$\beta$
Female	.32	.06	.25*	.27	.07	.22*	.28	.07	.23*
Native American	.03	.06	.03	.04	.07	.03	.05	.07	.04
Other	.09	.17	.02	.18	.22	.04	.17	.22	.04
Low SES	.18	.16	.05	.25	.18	.08	.31	.18	.09
At Risk				-.34	.10	-.20*	-.33	.10	-.20*
ELL				-.16	.07	-.13*	-.16	.07	-.13*
ASP							.05	.07	.04
ISP							-.06	.03	-.11*

Note: Each predictor variable is dichotomous with the exception of ISP, which is continuous. See *Multiple and logistic regression* under **Hypotheses and Analyses** for coding.

\* $p < .05$

### **Logistic Regression Results**

Logistic regression analyses were used to test the contributions of gender, race, socioeconomic status (SES), at-risk and ELL status, as well as participation in After School Programs (ASP) and In-School Programs (ISP) in predicting the likelihood of passing the STAAR exams. The same coding system and models were used for the predictor variables as was used for the multiple regression analyses.

For the Reading exam, results from models 2 and 3 indicate that being an English Language Learner (ELL) significantly predicted the likelihood of passing the exam, with students who were not ELL more likely to pass than those who were ELL by a factor of .16, Wald(1, n= 91)= 11.40,  $p = .00$  for model 2; and by a factor of .15, Wald (1, n= 91)= 11.59,  $p = .00$  for model 3 (see Table 9). Chi square analyses confirmed that these differences were significant, with 75% of students who were not ELL having passed and just 25% of students who were ELL passed,  $\chi^2 (1, n= 96) = 23.98, p = .00$  (see Table 10 for crosstab). Gender, race, SES, at-risk status, and participation in ASPs and ISPs were not found to significantly predict passing the exam across any of the models.

For the Math exam, results were similar to the Reading exam. Models 2 and 3 indicate that being ELL is the only significant predictor of passing, with students who were not ELL more likely to pass than those who were ELL by a factor of .19, Wald (df= 1, n= 82)= 6.91,  $p = .009$  for model 2; and by a factor of .18, Wald (df= 1, n= 82)= 7.23,  $p = .008$  for model 3 (see Table 11). Chi square analyses confirmed that these differences were significant, with 56% of students who were not ELL having passed and just 17% of students who were ELL passed,  $\chi^2 (1, n = 86) = 13.60, p = .00$  (see Table 12 for crosstab). No other variables were found to significantly predict passing this exam across any of the three models.

Table 9:

*Logistic Regression Predicting Passing STAAR Reading Exam*

	Model 1 (n= 119)			Model 2 (n= 91)			Model 3 (n= 91)		
	B	SE	Odds ratio	B	SE	Odds ratio	B	SE	Odds ratio
Female	-.15	.40	.86	-.30	.54	.74	-.23	.56	.79
Native American	-.76	.42	.47	-.69	.55	.50	-.83	.59	.44
Other	-.98	1.25	.38	-20.39	40192.97	.00	-20.06	40192.97	.00
Low SES	1.03	1.26	2.80	-.06	1.65	.94	.40	1.67	1.49
At Risk				-1.40	.86	.25	-1.36	.87	.26
ELL				-1.82*	.54	.16	-1.89*	.56	.15
ASP							-.52	.61	.60
ISP							-.31	.36	.74

Note: STAAR Reading was coded as 1= *passing* and 0= *not passing*. Each predictor variable is dichotomous with the exception of ISP, which is continuous. See *multiple and logistic regression* under **Hypotheses and Analyses** for coding.

\* $p < .05$

Table 10:

*ELL and STAAR Reading Crosstab*

	Not ELL		ELL	
	Freq.	%	Freq.	%
Didn't Pass	12	25	37	75
Passed	35	75	12	25
Total	47	100	49	100

Table 11:

*Logistic Regression Predicting Passing STAAR Math Exam*

	Model 1 (n= 110)			Model 2 (n= 82)			Model 3 (n= 82)		
	B	SE	Odds ratio	B	SE	Odds ratio	B	SE	Odds ratio
Female	.18	.43	1.20	.56	.58	1.76	.63	.59	1.17
Native American	-.06	.45	.95	.94	.62	2.56	.99	.64	2.72
Other	-.29	1.26	.75	-18.70	40192.97	.00	-18.50	40192.97	.00
Low SES	.23	1.24	1.25	-1.39	1.53	.25	-.99	1.55	.37
At Risk				-.98	.68	.38	-.99	.69	.37
ELL				-1.67*	.64	.19	-1.73*	.65	.18
ASP							.35	.64	1.42
ISP							-.47	.37	.63

Note: STAAR Math was coded as 1= *passing* and 0= *not passing*. Each predictor variable is dichotomous with the exception of ISP, which is continuous. See *multiple and logistic regression* under **Hypotheses and Analyses** for coding.

\* $p < .05$

Table 12:

*ELL and STAAR Math Crosstab*

	Not ELL		ELL	
	Freq.	%	Freq.	%
Didn't Pass	20	44	34	83
Passed	25	56	7	17
Total	45	100	49	100

Analyzing the likelihood of passing the STAAR End-of-Course (EOC) exams high school students are required to pass in order to graduate, the same predictor variables and models were used in these logistic regressions. Being ELL was the only significant predictor of passing the English 1 exam, as indicated by models 2 and 3. Both models indicate that students who were not ELL were more likely to pass than those who were ELL by a factor of .32, Wald (1, n= 86)= 5.34,  $p$ = .02 for model 2; and by a factor of .30, Wald(1, n= 86)= 5.48,  $p$ = .02 for model 3 (see Table 12). Chi square analyses confirmed that these differences were significant, with 51% of students who were not ELL having passed and just 21% of students who were ELL having passed,  $\chi^2$  (1, n = 91) = 8.77,  $p$  = .00 (see Table 13 for crosstabs). No other variable were found to significantly predict passing the English 1 exam.

For the English 2 exam, logistic regression also reveals that being ELL was the only significant predictor of passing. Models 2 and 3 both demonstrate that students who were not ELL were more likely to pass by a factor of .10, Wald (1, n= 90)= 14.88.34,  $p$ = .00 for model 2; and by a factor of .10, Wald (1, n= 90)= 14.40,  $p$ = .00 for model 3 (see Table 14). Chi square analyses confirmed that these differences were significant, with 60% of students who were not ELL having passed and just 9% of students who were ELL having passed,  $\chi^2$  (1, n = 92) = 27.69,  $p$  = .00 (see Table 15 for crosstabs). No other variable were found to significantly predict passing the English 2 exam.

Lastly for the Algebra 1 exam, logistic regressions found that no variables significantly predicted students passing it (see Table 16). Regarding at-risk status, this variable was removed from models 2 and 3 by SPSS when the analyses were run because of an issue with variability. A crosstab table reveals that 100% of students included in these models were considered at-risk (see Table 17 for crosstabs). This variable could



Table 12:

*Logistic Regression Predicting Passing STAAR EOC English 1 Exam*

	Model 1 (n= 129)			Model 2 (n= 86)			Model 3 (n= 86)		
	B	SE	Odds ratio	B	SE	Odds ratio	B	SE	Odds ratio
Female	.18	.40	1.91	.12	.51	1.11	.13	.53	1.14
Native American	.24	.40	1.27	.67	.52	1.95	.64	.52	1.90
Other	-20.08	20085.66	.00	-19.47	40192.97	.00	-19.28	40192.97	.00
Low SES	-.92	.85	.40	-1.20	.98	.30	-1.10	1.01	.33
At Risk				-21.09	40192.99	.00	-20.97	40192.88	.00
ELL				-1.18*	.51	.32	-1.20*	.51	.30
ASP							-.05	.54	.96
ISP							-.14	.28	.87

Note: STAAR EOC English 1 was coded as 1= *passing* and 0= *not passing*. Each predictor variable is dichotomous with the exception of ISP, which is continuous. See *multiple and logistic regression* under **Hypotheses and Analyses** for coding.

\* $p < .05$

Table 13:

*ELL and STAAR EOC English 1 Crosstab*

	Not ELL		ELL	
	Freq.	%	Freq.	%
Didn't Pass	17	49	44	79
Passed	18	51	12	21
Total	35	100	56	100

Table 14:

*Logistic Regression Predicting Passing STAAR EOC English 2 Exam*

	Model 1 (n= 114)			Model 2 (n= 90)			Model 3 (n= 90)		
	B	SE	Odds ratio	B	SE	Odds ratio	B	SE	Odds ratio
Female	.33	.40	1.40	.39	.59	1.48	.35	.61	1.42
Native American	-.04	.41	.96	.21	.58	1.23	.22	.59	1.24
Other	-20.43	40192.97	.00	-18.67	40192.97	.00	-18.50	40192.97	.00
Low SES	-.27	.95	.77	.27	1.29	1.31	.71	1.38	2.04
At Risk				-21.27	16339.03	.00	-21.01	16363.31	.00
ELL				-2.30*	.60	.10	-2.30*	.61	.10
ASP							.24	.62	1.27
ISP							-.46	.33	.63

Note: STAAR EOC English 2 was coded as 1= *passing* and 0= *not passing*. Each predictor variable is dichotomous with the exception of ISP, which is continuous. See *multiple and logistic regression* under **Hypotheses and Analyses** for coding.

\* $p < .05$

Table 15:

*ELL and STAAR EOC English 2 Crosstab*

	Not ELL		ELL	
	Freq.	%	Freq.	%
Didn't Pass	15	40	49	91
Passed	23	60	5	9
Total	28	100	54	100

not be recoded, as it was only presented dichotomously in the original at-risk reports. This rendered it unusable in the models, and that's why it is excluded from the table.

### **Discussion**

Using Maslow's hierarchy of needs theory (1958) as a framework to examine wraparound services provided to students enrolled in a Latinx-service Title 1 charter school that modeled itself as a Full Service Community School (FSCS), the current study sought to evaluate how certain immutable factors such as gender and race, as well as mutable ones such as participation in After School Programs (ASP) and In-School Programs (ISP), might have impacted students' outcomes on six measures of academic performance. Results from the chi-square and regression analyses yielded five key takeaways.

Chi square analyses revealed significant differences between boys' and girls' rates of receiving passing GPA scores, which was defined as a GPA of 2.01 or higher, with girls more likely to have passing GPAs than boys. A multiple regression analysis also found gender to be a significant predictor of GPA, with girls receiving higher GPAs than boys. These findings are consistent with previous research which has found that girls tend to receive higher grades from teachers (Voyer & Voyer, 2014), as well as overall higher GPA scores across all major subjects in school (Lucio, Hunt, & Bornoalova, 2012; Buddin, 2014). Findings like these have led to concerns over what some call the "boy crisis" in education, or this idea that male students have recently been underachieving in their academics compared to their female classmates (Husain & Millimet, 2009). However, as Voyer and Voyer (2014) discover in their met-analysis of teacher's marks on students' grades, these differences are generally small, have been observed consistently across many countries, and have remained stable over the last 100 years that this type of research has been conducted. They speculate that these

Table 16:

*Logistic Regression Predicting Passing STAAR EOC Algebra 1 Exam*

	Model 1 (n= 80)			Model 2 (n=80)			Model 3 (n= 49)		
	B	SE	Odds ratio	B	SE	Odds ratio	B	SE	Odds ratio
Female	.44	.47	1.55	.43	.61	1.54	.74	.67	1.23
Native American	-.13	.47	.88	-.18	.60	.84	-.16	.63	.06
Other	.96	1.29	2.60	-20.52	40192.97	.00	-20.45	40192.97	.00
Low SES	-1.14	1.19	.32	-1.46	1.23	.23	-1.40	1.33	1.12
ELL				-.51	.60	.60	-.54	.64	.58
ASP							-.96	.71	.38
ISP							-.44	.39	.64

Note: STAAR EOC Algebra 1 was coded as 1= *passing* and 0= *not passing*. Each predictor variable is dichotomous with the exception of ISP, which is continuous. See *multiple and logistic regression* under **Hypotheses and Analyses** for coding.  
 \*p < .05

Table 17:

*ELL and STAAR EOC Algebra 1 Crosstab*

	Not At Risk		At Risk	
	Freq.	%	Freq.	%
Didn't Pass	0	0	40	51
Passed	1	100	37	49
Total	1	100	77	100

differences could be due to different learning strategies between girls and boys, or differences in academic motivation and priorities between girls and boys. They believe there is no crisis for educators to be concerned over, but also stress that these trends should not be ignored and additional research is needed to investigate the phenomenon further. In the case of the students at George Sanchez, given the fact that 88% had passing GPAs, it is clear that most students are thriving in their classes and benefiting from George Sanchez's wraparound services and holistic-approach to educating them.

The second key takeaway from this study also came from the multiple regression analysis, which found that being at-risk was a significant predictor of GPA for George Sanchez students, with those who were at-risk more likely to have lower GPAs than those who were not at-risk. Previous research has demonstrated that at-risk students tend to be less participatory and engaged in their academics (Finn, 1993), but those who are engaged tend to display more traits of resiliency (McMillan & Reed, 1994; Finn & Rock, 1997), which mediates some of their at-risk factors and lead to better academic performances. At-risk students also tend to have higher rates of absenteeism (Genao, 2015), and more issues related to their mental and socio-emotional health (Roeser, Eccles, & Strobel, 1998; Becker & Luthar, 2002), which can contribute to worse academic outcomes. Lower performances on academic measures are key indicators for many of these risk factors, which is why it is crucial that schools be vigilant in recognizing them and provide the necessary interventionary services. The majority of students at George Sanchez are considered at-risk, which is a challenge administrators, faculty, and staff meet head-on and seek to fully understand, especially since it helps inform them of how to best serve their students and where to allocate their resources. Administrators and faculty understand the consequences can be devastating when a student slips through the cracks. George Sanchez models itself as a Full Service

Community School because they recognize the difficult lived and academic-experiences of at-risk students, and provide them with comprehensive services through community partnerships which help alleviate some of those risk factors and improve their academic outcomes.

Being an English Language Learner (ELL) is listed as one of the 13 at-risk qualifiers identified by the Texas Education Agency (TEA) and is considered a risk factor for academic failure and dropout. This reveals the third key takeaway from this study, which multiple regression analysis found that being ELL was a significant predictor of GPA for students at George Sanchez, with ELL students more likely to have lower GPAs than non-ELL students. Logistic regression analyses also found ELL to be a significant predictor of performance on four of the five STAAR exams, including Reading and Math for middle schoolers, and English 1 and 2 for high schoolers. Students who were ELL were less likely to pass these exams than students who were not ELL. These findings are in line with previous research, which has also found that ELL students tend to earn lower grades and lower scores on math and reading tests. Researchers have recently reported that achievement gaps between ELL and non-ELL students has widened over the last several years (Polat, Zarecky, & Schreiber, 2016). Bailey and Huang (2011) argue that even ELL students who meet certain English proficiency standards might still struggle in their comprehension of course materials, such as textbooks and class assignments, as well as in their abilities to communicate their knowledge and understanding of subjects in “academic English.” Research has also found that students who are ELL struggle to feel a sense of belonging to their school (Shi & Watkinson, 2018), and tend to have higher rates of depression and anxiety than their non-ELL peers because they are less likely to seek mental health services (Bauer, Chen, & Alegria, 2010). Each of the aforementioned variables can exacerbate systemic inequalities that ELL students often encounter in the

American educational setting, making students more vulnerable to academic failure or dropout. George Sanchez provides ELL students with additional instruction in their classes, as well as ELL tutorials during and after school. These are just two examples of the services they provide to assist students and try to mediate some of their risk factors. Still, it is clear from the analyses that even with these services, ELL students are struggling to earn passing GPAs and STAAR exam scores compared to their non-ELL classmates.

The fourth and most surprising key takeaway of this study also came from the multiple regression analyses, which found that students who participated in more In-School Programs (ISP) were likely to have lower GPAs than students who participated in fewer ISPs. Research on this variable was exploratory because, to my knowledge, no prior studies consolidated services provided to students during regular school hours. I hypothesized that increased participation in ISPs would mediate students' risk factors and lead to better academic outcomes, but results indicated worse outcomes. These results make sense within an at-risk framework, because it is likely that students who require more assistance during school do so because they are struggling more in their academic or personal lives than those that need less assistance and fewer services. Niehaus and Adelson (2014) found similarly unexpected results in their study of ELL students. They hypothesized that ELL students who attended schools which offered more support services would have better socio-emotional outcomes and thus better academic achievement. However, their analyses found the opposite, or rather that ELL students who attended these schools had worse socio-emotional outcomes and therefore worse academic achievement. They argued that this likely has to do with school characteristics which are commonly associated with lower rates of achievement, such as a higher concentration of poverty among students, making it difficult to disentangle non-school

related variables from support services provided to students during school hours.

Although in-school services provide needed support for vulnerable students, non-school factors that put students at-risk can have a significant impact on their academic achievement.

The fifth and final key takeaway from this study has to do with the many non-significant findings that resulted from my analyses. Significant differences were not found by chi square analyses between girls and boy's performances on all five of the STAAR exams, nor were they found on boys' and girls' participation in ASPs and ISPs. Chi square analyses also did not find significant differences between students who identified as White, Native American or Other, on any of the 6 academic measures, including GPA and the five STAAR exams; nor were significant differences found between these students in their participation in ASPs and ISPs. The multiple regression analyses also did not find race, SES, or participation in ASPs to be significant predictors of GPA, and the logistic regression analyses did not find gender, race, SES, at-risk status, or participation in ASPs and ISPs to be significant predictors of performance on any of the STAAR exams. There is evidence to suggest that efforts to improve minority and low-income students' standardized test performances are compromised by SES and racial factors (White et al., 2016), but these results were not found in any of my analyses. These non-significant findings might suggest a number of things about the data, as well as the students' academic outcomes at George Sanchez. Passing standardized tests is a significant challenge for these students, as demonstrated by the fact that more than half of those who took the exams were not passing most of them. Grodsky, Warren, and Felts (2008) argue that standardized tests are actually reinforcing academic achievement gaps and social inequalities among underserved and at-risk students because these students are more likely to experience inadequacies in their opportunities to learn. Put another way,



these students experience deficiencies in the educational resources which help facilitate knowledge and skill acquisition. To address disparities, George Sanchez emphasizes on the role of wraparound services to compensate for deficiencies experienced by their students. The charter school provides their students with an environment that meets their basic needs and enables academic achievement. Improving standardized test performances is a major priority for faculty and administrators at George Sanchez, and more analyses is needed.

Overall, these analyses are insightful and provided direction for future analyses pertaining to George Sanchez data. Some differences between groups were evident, but most of these were not significant which indicates that the students at George Sanchez seem to experience a unique educational environment than a more conventional public school, where these differences would likely be more pronounced. The results of this study are a testament to George Sanchez's FSCS modeling, which provides comprehensive services to allow students to prioritize their education despite the many challenges they face. There could also be issues with the data, including small sample sizes and a lack of variability. The student population at George Sanchez is smaller and more homogenous (given the fact that most students are Latinx, low-SES, at-risk, ELL, etc.) compared to other public schools in Houston. Because these students share so many traits and circumstances, it's not unusual that many of their academic struggles and outcomes would also be similar. Additional and alternative analyses, or alternative ways of coding and organizing the data, could be considered for future analyses to further examine and discover significant findings in the data.

## CHAPTER IV:

### CONCLUSIONS

The goal of this study was to contribute to the growing literature on Full Service Community Schools (FSCS) and holistically-oriented models of education that work to provide vital and comprehensive services to students who are lacking some of their most basic needs. As Maslow's hierarchy of needs theory (1958) argues, two of our basic needs are food and shelter. Those needs must be satisfied before any higher order needs, like feeling a sense of belonging or having a healthy self-esteem, can be achieved. If there are deficiencies in any of these basic needs, than an individual will not be able to become self-actualized and reach their full potential. FSCSs like George Sanchez Charter School work to ensure some of those needs are provided to their vulnerable and at-risk students. This allows their students to experience a school that is aware and attentive to the needs of the "whole" student, and not just their academic ones. George Sanchez seeks to provide assistance to their students through wraparound services and community partnerships, which help provide an enriching educational environment and facilitate students' academic achievements. Given the fact that George Sanchez's graduation rates improved 39% from 2010 to 2015, it is clear that something about this model and their approach to educating their students has worked, even if that's not been fully captured in this study. Ultimately, George Sanchez's mission to improve their students' lives and put them on a path toward success is engrained into the culture of their school, and students have exponentially benefitted from this in more ways than just their academics.

#### **Limitations**

There were several limitations of the study and the data that likely factored into the results which were ultimately found. The first being that the data used in the study

was not created by myself, the principal investigator, or the research team. Instead it was generated and collected by the charter school as a part of their standard data collection procedures and the records they keep on their students. The research team was given access to these records and consolidated that data into a single database that could be used for our analyses. Because we were not able to generate this data ourselves, we were not able to standardize those procedures to ensure all data were collected completely and consistently, and we noticed discrepancies and inconsistencies throughout the data collection phase of the project. For example, as we were going through the students' records, we often would encounter issues with missing or incomplete forms, because the student files were not static and were still being modified by school administrative assistants as we were going through them. When this would occur, we would have to leave an entry field for that data point empty, and this created issues with missing data during the cleanup and recoding phases. During the cleanup and analysis phases, we decided to leave these cells empty so that SPSS would treat them as they were, missing data. When analyses were then run, SPSS could exclude students with missing data from the models, as reflected in the different sample sizes for the different analyses.

Sample size was also another issue we ran into as the data was being cleaned and recoded, particularly for participation rates in the 24 wraparound services that were identified in our database. Throughout the course of the project, we received multiple reports of students who were receiving certain services and participating in certain programs. Some of these reports included details like hours spent participating or number of times attended, while others were just a list of names of students that were included. Some of these services and programs had very small participation rates, such as the Dual Credit/Houston Community College Healthcare Academy, which only had 11 students participating in that program according to records we received. Ideally it would

have been interesting to look at the impact these programs were having individually on students' academics, and it was for this reason programs were consolidated into two categories, the After School Programs (ASP) and In-School Programs (ISP). There are alternative ways of organizing and consolidating this data, such as by academic vs non-academic services, but for the purposes of my study I chose to consolidate them into ASPs and ISPs because I was interested in examining if those programs were having distinct impacts on students' academics.

Additionally, because the charter school was limited in resources, complete reports of participation rates in these programs and services were not provided to us. Arguably, limited access to data and partial data collection for some programs dictated types of analyses possible for this study, which likely does not capture a complete picture of the students' lives and experiences at George Sanchez from 2015 to 2016. It also became evident to us, as we spent more time at the school that much of what George Sanchez does for their students cannot easily be captured in quantitative data. We would often hear stories from administrators and staff of students who were dealing with deeply complex issues or were in situations of crisis. The school administrators, faculty, and staff would intervene immediately and do whatever was necessary to ensure the student was safe and being cared for. Examples of these were endless and part of what makes George Sanchez so unique compared to more conventional models of education, but we were not able to account for them in our data as we too were limited in the scope and resources available to us. However, the results presented in this study still provide insight and direction for future iterations of the project.

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## APPENDIX A:

### IN-SCHOOL PROGRAMS

Wraparound programs and services students' participate in during regular school hours.

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Pull-out tutorials	Subject-specific tutorial sessions that pulls students out of their regular classes.
Free/reduced lunch	Students eligible for free or reduced lunch meals meet federal poverty guidelines based on income criteria set by the National School Lunch Program (NSLP).
English Language Learner (ELL) instruction	Students who are identified to be English language learners according to standards and assessments administered by the Texas Education Agency (TEA).
Careers & Technical Education (CTE)	A program where students take courses on relevant career education and training and meet graduation requirements outlined by the TEA.
Dual Credit/HCC Healthcare Academy	Students who participated in a Dual Credit program through George Sanchez's partnership with Houston Community College would take classes that prepared them for further education and/or a career in healthcare.
Special Education	Students who receive special education services to address the educational needs of those with learning or other disabilities.
Dropout Prevention	Students who met with their assigned truancy officer for purposed of reviewing their truancy expectations.
Transitional Counseling	Students who met with a school counselor upon enrollment to review school expectations and procedures.
Communities in School (CIS)	A non-profit organization that provides counseling services to students identified as being "at-risk" for dropout.

Counselor Visits	Students who met with a school counselor over the course of a 4-week period for reasons such as crisis, non-academic personal reasons, academic and college readiness counseling, parent conferences, new student interviews, and administrative referrals.
Childcare	Student parents who received on-campus childcare services.



## APPENDIX B:

### AFTER SCHOOL PROGRAMS

Wraparound programs and services students' participate in outside of regular school hours.

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Tutorials	Subject-specific tutoring sessions that are conducted outside of regular school hours, including on Saturdays.
Credit Recovery	A program that allows students to earn credit for a course they had previously failed or dropped out of.
The Woods Project	An outdoor education and environmental awareness program.
Project Fixers	A program that allows students to learn skills by repairing items on campus.
GLAM Squad	A recreational club for students to gather to discuss and practice personal hygiene, makeup, self-care, and related topics.
Cheerleading/Dance Team	A recreational activity for students to practice dance and cheerleading routines.
Chess Club	A chess club that participates in state competitions.
Weightlifting Club	A recreational club that allows students to practice weightlifting.
Cooking Class	A recreational activity that allows students to learn and practice cooking skills.
Science Club	A recreational club that allows students to learn and practice skills related to science.
National Council for La Raza	A non-profit advocacy organization that provides leadership development and empowerment programs including Lideres, that encourages Latinxs youth to pursue leadership positions, Cultura, Aprendizaje, Servicio, Acción (CASA), a service-learning project for middle school students, and Escalera, a college- and career-readiness program for high school juniors and seniors.

Pregnant & receiving  
services (PRS)

Students who were pregnant and unable to attend their classes would receive at-home educational services by a faculty or staff member.

Casa Phoenix

A residential treatment center for boys that provides intensive and supportive counseling, life skills training, and education about alcohol, tobacco and other drugs.