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School Counselors and Academic Outcomes Among Secondary School Students in One Southeastern District

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SCHOOL COUNSELORS AND ACADEMIC OUTCOMES AMONG SECONDARY SCHOOL STUDENTS IN ONE SOUTHEASTERN DISTRICT

by

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Dedication

This dissertation is dedicated to my family who has supported me every step of the way along this circuitous journey.

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Abstract

The purpose of this study is to explore the relationship between school counselor ratios, and Tennessee Comprehensive Assessment Program [TCAP] English Language Arts and Mathematics scores. This study will also consider school level characteristics and student level characteristics in one large, public, urban school district in the southeastern United States. This study will merge two archival data sets from the 2018-2019 school year. Both data sets were downloaded from the Tennessee Department of Education's website and are publicly available. The first data set contains demographic information listed by school. The second data set contains TCAP testing score reports by school. The Tennessee Department of Education sets expectations for student's and uses the TCAP as a measure of student's learning and progressing (TNDOE, 2020). This study aims to add to the literature by exploring if a relationship between school counselor to student ratios and academic outcomes exists in one district, and by examining how school level characteristics and student level characteristics influence this relationship. Implications, considerations for future research, and limitations will be provided.

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School Counselors and Academic Outcomes Among Secondary School Students in One Southeastern District

Chapter 1: Introduction

The purpose of this study is to determine the relationship between school counselor to student ratios and academic outcomes for secondary school students in one large, public, urban school district in the southeastern United States. This study aims to add to the literature by exploring if a relationship between school counselor to student ratios and academic outcomes exists and by examining how school level characteristics and student level characteristics, including per pupil expenditure, percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students influence the relationship. Chapter 1 will introduce the study by providing an overview of the relevant literature covering the topic and the research problem. The chapter is organized into the following sections: (a) background information, (b) statement of the problem, (c) significant of the study, (d), definition of terms, (e) research questions, and (f) organization of the study.

Background of Study

School counselors have been advocating for their role and speaking out about how they can assist students with finding success in school for many years (Shi & Brown, 2020). School counselors meet student's academic, career, and social/emotional needs, as well as serve as an influential resource for helping students grow and develop (American School Counseling Association [ASCA], 2016, Carrell & Carrell, 2006, Gysbers & Henderson, 2001, Lapan et al., 2001, Lapan et al., 2012). School counselors contribute to academic and educational outcomes by enhancing student engagement and performance (ASCA, 2019, Carey & Harrington, 2010a,

Carey & Harrington, 2010b). School counselors are a critical part of the school's educational leadership team and are able to maximize their effectiveness when they build and develop a comprehensive school counseling program as outlined by ASCA (2012).

Educational initiatives including No Child Left Behind Act of 2001 (U.S. Department of Education [USDOE], 2001) and Every Student Succeeds Act [ESSA] (USDOE, 2015a) have recently emphasized the significance of educational outcomes as a direct measure of school success; therefore, more research should be conducted regarding the school counselor's role in promoting positive student achievement outcomes (ASCA, 2019). Along with these initiatives, educational trends have included a variety of movements to address the multitude of academic and non-academic needs of K-12 students (Gagnon & Mattingly, 2016). Comprehensive school counseling programs and the ASCA National Model are designed to help effectively shift school counselor's roles into activities that ensure every student's success in order to enhance student outcomes (Cinotti, 2014; Fye et al., 2018). ASCA also supports a recommended student to school counselor ratio is 250:1 (ASCA, 2019). This recommended ratio is not a reality for many schools; however, school counselors can still fulfill an influential role with students, especially with the proper time and resources (Gysbers & Henderson, 2001).

To promote positive outcomes in a variety of ways, students should be seen through an expansive lens that acknowledges their ecological environment, including all the intersecting systems students experience. Bronfenbrenner's Ecological Model provides a framework to view human growth and development by explaining how humans are affected by different types of environmental systems (Bronfenbrenner & Morris, 2006). Among the multiple levels of systems, the child's immediate environmental system is the Microsystem, which includes the school environment (Bronfenbrenner & Morris, 2006). Just as the child is a part of numerous systems,

the school counselor is a part of the school system and has the potential to positively influence student outcomes (Gysbers & Henderson, 2001).

Within the school system, school counselors are uniquely positioned in their role to support the diverse array of needs that students present daily. In order to do this, school counselors offer direct and indirect services to help students develop positive skills, mindsets, and behaviors that promote academic achievement (ASCA, 2016). Direct services are defined as in person interactions with students, and indirect services are services that are provided on behalf of students as a direct result of the school counselors' interactions with others (ASCA, 2016). The impact that school counselors may have on student outcomes are as diverse as the number and nature of outcomes that can be assessed. There are a variety of school level indicators that are used to measure growth and progress related to student's academic success and achievement, which include national and state specific benchmarks (Swaak, 2018; Shi & Brown, 2020). Although the school counseling literature suggests that there is a relationship between student to school counselor ratios and academic outcomes, a large majority of these studies have been conducted with high school student populations (Lapan et al., 2012a; Lapan et al., 2012b; Parzych et al., 2019). To address this shortcoming, this study will analyze from secondary schools within one racially and ethnically diverse school district. This study will analyze the per pupil expenditure, percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students with regards to Tennessee Comprehensive Assessment Program (TCAP) ELA and Math scores within one school district.

Statement of the Problem

There is a dearth of literature exploring school counselor ratios and academic outcomes in secondary schools. To date, only one study has examined school counselor to student ratios at the district level and it did not analyze the relationship between academic outcomes and school counselor to student ratios (Akos, et al., 2019). Utilizing data from the largest school district in North Carolina, the focus of this early work was on comparing student outcomes in Recognized ASCA Model Program (RAMP) and non-RAMP schools (Akos, et al., 2019). Although this study provides a foundation for examining student outcomes in a single large district, additional research is warranted regarding school counseling ratios and academic outcomes at the secondary school level particularly with regard school and student characteristics.

Significance of Study

The proposed study intends to examine the relationship between school counselor ratios and student academic outcomes, including a focus on differences related to per pupil expenditure, percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students enrolled in the secondary school environment. The results will inform the direction of future research related to school counseling and academic outcomes since the role of the school counselor includes meeting student's academic needs (ASCA, 2016).

Definition of Terms

The definition of terms originally provided in Chapter 1 is copied here to assist the reader Students who Fail the TCAP include two Levels: Level 1 Below and Level 2 Approaching:

(1) High School: High School is defined by a school within the district that serves students in grades 9-12

(2) Middle School: Middle School is defined by a school within the district that serves students in grades 6-8

(3) Secondary School: Secondary School is defined by a school within the district that serves students in grades 6-12

(4) TCAP Level 1 Below: The student has a minimal understanding and ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(5) TCAP Level 2 Approaching: The student is approaching understanding and has a partial ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(6) TCAP Level 3 On Track: The student has a comprehensive understanding and has a thorough ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(7) TCAP Level 4 Mastered: The student has an extensive understanding and has an expert ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(8) TCAP Failing Score: This category includes students in the Level 1 Below and the Level 2 Approaching categories.

(9) TCAP Passing Score: This category includes students in the Level 3 On Track and the Level 4 Mastered categories.

(10) Title 1 School: Federally funded programs in high poverty schools that target children with low achievement.

Research Questions

Two primary research questions drive this work:

(1) What is the average school counselor ratio for secondary schools within Shelby County?

(2) What is the relationship between the number of school counselors and school and student characteristics on the TCAP ELA and Math scores?

Organization

This research study is presented in the format of five chapters. The first chapter contains the background of the study, a statement of the problem that is going to be researched, the significance of the study, definitions of key terms included in the study, and research questions. The second chapter includes a review of the relevant literature including pertinent information on the role of the school counselor, academic outcomes, and other variables that may impact student success. The third chapter details the research methodology of the study including the research questions, instrumentation, and the procedures that will be utilized. The fourth chapter includes the results and findings of the study and analysis. The fifth chapter includes a discussion of the results, the implications of the study, the limitations of the study, and considerations for future research in the field.

Chapter 2: Literature Review

This literature review explores existing peer reviewed research related to school counselor ratios, academic outcomes, and variables that may impact student achievement. Public school systems are complex and host many challenges and obstacles that face children today; therefore, there is not a simple solution to meet the myriad of problems. Educational trends include a variety of movements that address the multitude of needs that students must have met in addition to academic support (Gagnon & Mattingly, 2016).

For instance, the passing of the ESSA in 2015 brought increased attention and awareness to educating the whole child. Students should be viewed through a wide lens that recognizes their ecological environment. Bronfenbrenner's Ecological Model explains how human growth and development is influenced and impacted by different types of environmental systems (Bronfenbrenner & Morris, 2006). This ecological approach looks beyond development on an individual level and considers the overall impact of the totality of environments in which a person is situated, postulating that the individual is influenced by a variety of systems that interact with one another. These systems are detailed in a number of contexts in relation to their proximity to a particular individual and include the microsystem, mesosystem, exosystem, macrosystem and the chronosystem (Bronfenbrenner & Morris, 2006). The microsystem is the child's immediate environment and those who have direct contact with the child, which includes the child's school. The mesosystem contains the relationships between the groups from the microsystem, for example the parent-teacher relationship. The exosystem involves factors that may affect the child's life but do not have a direct relationship with the child, for example the company where one or both parents' work. The macrosystem contains cultural elements like religion or cultural values. The chronosystem was added later on by Bronfenbrenner, and it refers

to the developmental stage of life an individual in, for example if young person experiences the death of a loved one, they would handle it differently than if they were older. To illustrate the relevance of Bronfenbrenner's Ecological Model, consider the fact that students who live in poverty may benefit from more intensive school support as they are more likely to come from less stable homes and/or be exposed to more violent environments (APA, 2020). Just as each child should be considered in the context of larger systems in which they are a part, a variety of factors within the child should be considered as well.

Additionally, it is imperative to address the cognitive and non-cognitive challenges that students face in school settings (Gagnon & Mattingly, 2016). There is a wealth of research indicating how school counselors can play an effective and instrumental role in the student development. According to ASCA, research shows that the implementation of a comprehensive school counseling program has a positive impact on a variety of outcomes (Gysbers & Henderson, 2012; ASCA, 2012). School counselors are uniquely positioned as a part of the school's leadership team to address student's academic, career and social/emotional development (ASCA, 2012). Schools counselors offer direct and indirect services to assist students in developing positive skills, mindsets, and behaviors that promote academic achievement (ASCA, 2016).

Additionally, there are a variety of school level indicators that are used to measure student's academic success and achievement (Swaak, 2018; Shi & Brown, 2020). National and state specific data regarding academic outcomes will be presented to provide context for the study. Other relevant variables including per pupil expenditure, percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students will be discussed. The role of the school counselor will

be detailed along with an overview of a comprehensive school counseling program as outlined by ASCA (2016).

Role of the School Counselor

For many years, school counselors have been advocating for their role and speaking out about how they can help students be successful in school (Shi & Brown, 2020). School counselors are tasked with meeting student's academic, career, and social/emotional needs, and can serve as an influential resource for helping students grow and develop (ASCA, 2016; Carrell & Carrell, 2006; Gysbers & Henderson, 2001; Lapan et al., 2001; Lapan et al., 2012a). School counselors contribute to academic and educational outcomes by enhancing student engagement and performance (ASCA, 2019; Carey & Harrington, 2010a; Carey & Harrington, 2010b). School counselors are an imperative part of the educational team and can maximize their effectiveness when they build and develop a comprehensive school counseling program as outlined by ASCA. Recently, educational initiatives including No Child Left Behind Act of 2001 and ESSA have emphasized the importance of educational outcomes as a direct measure of school success (ASCA, 2019). Overall, comprehensive school counseling programs and the ASCA National Model help shift school counselor's roles into activities that ensure every student's success (Cinotti, 2014; Fye et al., 2018).

School Counselor vs. Guidance counselor

The role of the school counselor has evolved over the past several decades from one that primarily provided guidance services to one that administers a comprehensive counseling program that targets academic, career, and social/emotional development through leadership, advocacy, collaboration, and accountability (ASCA, 2012; Education Trust, 2009; Perusse & Goodnough, 2001). For the last several decades, school counselors have provided service

delivery through a comprehensive program and framework (Gysbers & Henderson, 2012; Fye et al., 2018).

The role of the school counselor has shifted throughout history from a predominately guidance-focused role to a multi-faceted position that includes providing responsive services, including mental health counseling (Whiston et al., 2011). In a historical context, the term "guidance counselor" has been used to refer to a counselor working within a school. Since the turn of the 21st century, however, this "guidance" counselor role has changed and evolved to reflect the much broader nature of the position (Carrell & Carrell, 2006). Providing school counseling core curriculum lessons is one of the roles of a school counselor, but the position is much more expansive and comprehensive in order to meet the needs of the student population.

The previous primary role of the counselor was largely focused on providing services to high school students. More specifically, services focused on vocational and occupational information (Gysbers & Henderson, 2012). This role and purpose of the school counselor has significantly evolved over the last decade, with more of an emphasis on student assessment, classroom developmental guidance, consultation, and mental health prevention and intervention (Gysbers & Henderson, 2012; Goodman-Scott et al., 2018).

As roles and responsibilities of school counselors, and the resulting language surrounding this profession have shifted over the past decade, there are still many school districts that embody the outdated view of school counselors. When searching for current school counselor ratios for the purpose of this study, the terminology used to address school counselors (e.g., school counselor or guidance counselor) is often indicative of the school districts' perspective. For example, is the district less evolved and using the term "guidance counselor," or have they

adopted a more current, comprehensive school counseling program and use the correct, current terminology, "school counselor?"

The magnitude of this seemingly slight difference is much more profound than it may first appear. To illuminate this significance, a study was conducted in 2019 on a total of 276 school counselors who were given a measure of school counseling competencies and standards. About half of the participants were asked to complete a version with the term "Guidance Counselor" and the other half completed a version of the assessment using the term "School Counselor." The results revealed that participants who completed the survey using the term Guidance Counselor were less likely to believe that they were able to perform 25 tasks on the survey, revealing that School Counselors' own self-efficacy is directly related to the terminology used to describe their position in PK-12 settings (Zyromski et al., 2019). To fully understand the role of the school counselor, one should have knowledge surrounding the ASCA National Model and the framework it provides for building and developing a comprehensive school counseling program.

ASCA National Model

The ASCA National Model provides a framework that enables counselors to develop a comprehensive school counseling program that recommends data-driven methods to inform and evaluate programming, interactions, and competencies that are foundational for school counselors (ASCA, 2019). The National Model outlines duties that are and are not appropriate for school counselors, thus allowing the school counselor to clearly define what does and what does not fall within the scope of the role. Decades of research has noted that too often school counselors are tasked with duties that are unrelated to their job description and are responsible for high numbers of students (ASCA, 2012; Pyne, 2011). The ASCA National Model

recommends that school counselors spend 80% or more of their time in direct or indirect student services in an effort to best meet student needs (ASCA, 2012).

Comprehensive school counseling programs consist of four primary components including:

- Define, which is focused on student outcomes, meeting competencies, and maximizing learning for students.
- Manage, which is focused on assessment, evaluation and building plans for action.
- Deliver, which looks at providing beneficial services to stakeholders.
- Assess, which finds ways to show the impact of the work of the school counselor and works to improve shortcomings (ASCA, 2019).

ASCA (2019) states that school counselors should create and implement strategies that help students learn academic strategies, understand and manage their emotions, develop interpersonal skills, and plan for their path beyond high school, whether they pursue higher education or an alternate route. In order to achieve these goals, school counselors employ a variety of methods to help maximize their potential to reach students. Specific methods may include individual counseling, classroom-based lessons, individual academic planning and/or goal setting, referrals for students who need long term support, collaboration with stakeholders, advocating on behalf of students during IEP meetings, and using data to drive their comprehensive program (ASCA, 2016).

School counselors have the ability to create a positive ripple effect in schools, affecting relationships and outcomes throughout the school (Gagnon & Mattingly, 2016). For example, a school counselor may find data that shows the students in the school need education and training

around developing appropriate social connections. Through working with school administrators, the counselor may be able to secure funding for a program that they will teach in school, host training for parents, and develop a video series for those who are unable to attend. This one intervention may likely have other positive effects on the school community through targeting that one need.

However, not all students receive the same attention from their school counselor because of the varying ratios of students to school counselors. Evidence shows that when students have access to their school counselor, they have more positive outcomes, including higher graduation rates and fewer disciplinary incidents (Akos et al., 2019; Gagnon & Mattingly, 2016; Goodman-Scott et al., 2018). Additionally, other improvements in academic, emotional, and social performance exist; however, more research is needed to provide additional evidence supporting these claims (Gagnon & Mattingly, 2016).

The ASCA National Model and Comprehensive school counseling programs and help shift school counselor's roles into activities that ensure every student's success (ASCA, 2012; Cinotti, 2014; Fye et al., 2018). The ASCA Model defines appropriate and inappropriate duties for the school counselor in order to provide clarity surrounding the work that school counselors are prioritizing throughout their day. The ASCA National Model recommends that school counselors spend 80% or more of their time in direct or indirect student services in an effort to best meet the student's needs (ASCA, 2012). Comprehensive school counseling programming should be aligned with each school's specified outcomes with an emphasis on academic outcomes (ASCA, 2019). In order to achieve this, school counselors should prioritize student engagement and student performance. Beyond working to improve academic outcomes, school counselors are in a unique role with ample training that allows them to address an array of other

challenges that may arise including mental health issues, social struggles, family challenges, course planning, and college and career readiness (Howe, 2009).

Recommended Counselor to Student Ratios

The current recommended student to school counselor ratio is 250:1 (ASCA, 2019). Reports at the state and national level show that caseloads are much higher than this recommendation. In 2015, the national average school counselor caseload was 482 students (Gagnon & Mattingly, 2016). According to Gagnon & Mattingly (2016), median ratios in Arizona and California are over 1000 students to 1 school counselor. At the district level, only 4.2% of city districts nationwide meet the 250:1 ratio, with the reported medium size city district reporting a 499:1 ratio (Gagnon & Mattingly, 2016). Nationally, only 17.8% of school districts meet ASCA's recommended ratio (Gagnon & Mattingly, 2016). Smaller student to school counselor ratios allow school counselors to have more direct contact on students. This may lead to more positive student outcomes for students.

With the proper time and resources, school counselors possess the potential to influence positive student outcomes (Gysbers & Henderson, 2001). Although ASCA's recommended ratio of students to school counselor is 250:1, some controversy exists around this recommendation, and there is a need for additional research to support the claim (ASCA, 2015). One of the limitations within this 250:1 recommendation includes the fact that school counseling is a young and emerging field. This ratio may be too large and may prohibit individuals from making meaningful connections because of the inability to build and establish trust between 250 students and one school counselor (Gysbers & Henderson, 2001). Existing research supports the claim that humans possess the ability to maintain a maximum of 150 relationships (Dunbar, 2010; Ruiter et al., 2011). Considering the limitation that may exist between humans and their ability to

create, establish, and maintain more than 150 relationships, one should consider how this may translate to the effectiveness of the school counselor with the recommended 250:1 caseload. ASCA determined this ratio based upon the school counselor's ability to maximize program effectiveness (ASCA, 2019).

Numerous research studies have examined the 250:1 ratio; however, a majority have focused on high school student populations. For example, Woods and Domina (2014) found that students in schools with small counselor caseloads found greater success with navigating the transition from high school to college. Another study in Missouri revealed that counselor ratios matter, especially in high poverty schools showing the link between ratios and better graduation rates and lower disciplinary incidents (Lapan et al., 2012a). In Connecticut, a study focused on college and career counseling services revealed that smaller ratios benefit students (Lapan et al., 2012b).

Additionally, Parzych (2019) investigated the impact of school counselor ratios on student outcomes across three states including Indiana, Connecticut, and New York. The results indicate that the school counselor to student ratio has a significant effect on student attendance, SAT mathematics, SAT writing, and SAT verbal scores in Indiana (Parzych, 2019). In Connecticut, results reveal that student attending schools in districts with elementary school counselors demonstrate improved performance outcomes when compared to districts without school counselors (Parzych, 2019). Further, this research indicated that lower performing schools, such as those schools in lower SES status communities, maintain higher caseloads than higher-performing schools (Parzych, 2019). The existing research supports the claim that counselor to student ratios matter when measuring a variety of different outcomes. There is significant variability in counselor to student ratios across schools with different levels of SES.

Therefore, additional research looking at school counselor ratios and school SES across secondary school student population is needed. This study is intended to help fill this gap in the literature.

Student to Counselor Ratios in Tennessee Public Schools

Similar guidelines that exist at the national level also exist at the state level. According to the Tennessee Department of Education [TNDOE], school counseling programs have always aimed to play an important role in the educational process for students (TNDOE, n.d.). TNDOE recognizes that school counselors are in a position to impact students in a significant way through addressing academic, personal/social, and career goals. School counselors strive to meet a diverse array of student needs that vary by school, district, and state. The state does mandate that districts implement a comprehensive school counseling program. TNDOE (2018) acknowledges ASCA's 250:1 recommended student to school counselor ratio; however, they recommend differing policies.

On April 21, 2017 TNBOE implemented policy 5.103, which outlines the Tennessee Comprehensive School Counseling Model of Practice and identifies what components the counseling program should contain. Two notable changes include the reduction in student to school counselor ratios and the requirement that all public-school counselors spend at least 80% of their time meeting directly with students (TNDOE, 2018). Policy 5.103 further states that student to school counselor ratios are a critical component for student success. The TNDOE (2018) recommended ratios are calculated according to the Basic Education Program [BEP] and are Elementary (Grades K-6) 500:1 and Secondary (Grades 7-12) 350:1.

Tennessee School Counselor Credentials

According to TNDOE (2018), school counselors should be licensed and should receive all necessary training in order to fulfill the requirements of their role. Policy 5.103 states that school counselor's contracts should extend to provide ample time to implement a quality program. Quality programs are programs in which the diverse array of student needs are met (TNDOE, 2018). School counselors who are trained in programs that are aligned with the ASCA National Model learn and understand the importance of building and developing a comprehensive school counseling program. There are a variety of factors that may prohibit a school counselor's ability to implement a comprehensive program, including being assigned a significant number of non-counseling duties (Burkard et al., 2012; Fye, et al., 2018; Goodman-Scott, 2015). Policy 5.103 exists to help provide an organizational structure for comprehensive school counseling programs as well as to help define priorities surrounding the essential elements for successful program implementation. Such program implementation is supported by research which indicates positive student outcomes in schools with such efforts (Woods & Domina, 2014). Academic outcomes may include student grades and student test scores. State level testing instruments are given to all students and provide an opportunity to compare students within a district and across a state. It is important to understand the score reporting of these instruments.

Score Reporting for TCAP English Language Arts (ELA) and Math

TCAP results are categorized as Level 1 Below, Level 2 Approaching, Level 3 On Track, and Level 4 Mastered. Each level is reported as percentages by individual school and district (TNDOE, 2020). The TCAP Score Reports are intended to provide a big picture regarding measures of a child's readiness, giving unique feedback regarding academic expectations (TNDOE, 2020). Students who score at the Level 1 Below category demonstrate that the student

has a minimal understanding and ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020). Students who score at the Level 2 Approaching category demonstrate that the student is approaching understanding and has a partial ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020). Students who score at the Level 3 On Track category demonstrate that the student has a comprehensive understanding and has a thorough ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020). Students who score at the Level 4 Mastered category demonstrate that the student has an extensive understanding and has an expert ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

In summary, students who perform at the below basic or basic proficient level are not considered to be performing academically at their grade level. Students who score at the proficient or advanced level are considered to be scoring at or above their grade level. In order to better understand each student in a more holistic way, one should consider other factors that may impact students' learning and growth. This aligns with Bronfenbrenner's Ecological model because it acknowledges that each individual student is a part of multiple systems that influence their growth and development (Bronfenbrenner& Morris, 2006).

Academic Outcomes

US Academic Outcomes

In 2015, the United States Department of Education [USDOE] awarded 24.8 million dollars in Elementary and Secondary School Counseling Grants (USDOE, 2015b). The USDOE believes that school counselors are a vital resource for schools and provides research supporting the claim that by providing adequate counseling services, a variety of positive outcomes may

improve including a decrease in disciplinary referrals, improved student attendance, improved academic performance, and enhanced development of social and emotional skills (USDOE, 2015b). The USDOE Office of Civil Rights recognizes the school counselor's role as one that relates in a major way to academic preparation, which may include standardized testing.

Researchers found a variety of academic outcomes when investigating the effectiveness of comprehensive school counseling programs. For example, Reback (2010) examined the relationship between school counselor availability and standardized test scores and discovered that states with smaller school counselor to student ratios and increased student contact had higher third grade testing scores for both math and reading. At the high school level, Parzych et al., (2019) found a significant correlation between school counselor to student ratios and higher SAT math, verbal and writing scores. In a 2012 study conducted by Carey and Dimmitt looking at school counseling and student outcomes, results showed evidence between student educational outcomes and school counseling program organization, student to school counselor ratios, counselor time use and specific school counseling activities. A majority of the existing research regarding academic outcomes has been conducted with the high school student population. There is a need for additional research on secondary school students to fill the existing gap in literature.

Tennessee Public Schools Academic Outcomes

For the purpose of this study, academic outcomes will be based on scores from the Tennessee Comprehensive Assessment Program [TCAP]. TCAP has been the state's primary testing program since 1988 for students in grades 3-12 (TNDOE, n.d.). TCAP includes TNReady assessments in the content areas of math, English language arts, social studies, and science. TNReady is designed to measure true student understanding, which goes beyond memorization and test-taking skills (TNDOE, n.d.). The content tests are used to assess what each student

knows and identify ways to help select interventions that will allow students to succeed in the future. Additional resources are provided to families in order to help them comprehend their students' scores and plan for future academic success based upon these scores.

Shelby County Outcomes

Shelby County Schools (SCS) is Tennessee's largest school district and is among the 25 largest public school districts in the nation (TNDOE, n.d.). Currently, there are 233 schools in the district serving students in grades PK-12. Data regarding a variety of school and district level outcomes is publicly available on each school's State of Tennessee required Report Card and ScoreCard. The Report Card presents demographics, value added composites, student achievement on state assessments, graduation rates, and ACT scores. Additionally, college and career readiness data is provided on graduation rates, ACT scores, ACT college readiness benchmarks, and students meeting the HOPE scholarship Eligibility on ACT. The ScoreCard provides school level data based on four key indicators of school quality including Academic Achievement, Academic Growth, College and Career Readiness, and School Climate.

Variables Impacting Academic Success

Student's academic performance is impacted by a variety of contributing factors since outcomes related to academics are multisystemic by nature (Bronfenbrenner & Morris, 2006; Lerner et al., 2015). One factor to consider is student to school counselor ratio. An existing body of research indicates that regular and continued access to the school counselor is necessary for student success, and this is especially true for students who are in need of intervention and students who are in a high poverty district (Carroll & Carroll, 2006; Lapan et al., 2012a). Schools should work to provide the ASCA recommended ratio of 250:1 in order to see more optimal student outcomes. Researchers have previously studied ways in which the ASCA National

Model can benefit student achievement and also promote effective school counseling programs (Brigman & Campbell, 2003; Carey et al., 2005; Sink & Stroh, 2003). Several existing research studies suggest that by implementing a comprehensive school counseling program, the school counselor provides a framework for optimal academic success in order to help student's reach the highest academic outcomes (Sink et al., 2017). The role of the school counselor has evolved to include a greater emphasis on student outcomes (ASCA, 2012).

A student's ability to learn and perform at school is affected by a variety of factors within the school and outside of the school (Goodman-Scott et al., 2018). Some of these factors include the following: the quality of the school and per pupil expenditure. Other factors that may impact academic achievement, including percentage of non-economically disadvantaged students, percentage of ELL students, percentage of students with disabilities, and student's race/ethnicity and school demographics should be considered when analyzing the relationship between students, school counselor ratios, and academic outcomes.

Student Demographics

Previous statewide research studies looking at the relationship between the implementation of comprehensive school counseling programs and student outcomes have considered both student demographic characteristics and school level demographic characteristics (Carey et. al., 2012a, Carey et. al., 2012b). A total of six studies have been conducted. These six state wide studies looked at four high school level studies, one middle school level study, and one elementary level study (Carey et. al., 2012a, Carey et. al., 2012b., Lapan et. al., 1997, Lapan et. al., 2001, Sink & Stroh, 2003, Sink et. al., 2008). These studies conducted in Missouri, Washington, Utah, and Nebraska set a precedent for salient student-level demographic information to include when examining student outcomes.

In the two most recent studies conducted by Carey et al., (2012a, 2012b) in Utah and Nebraska, the following student demographic characteristics were collected: percentage of students who racially identify as Black or African American, Latino/a, Hispanic, Asian or Native American; percentage of students eligible for free and reduced lunch; per pupil expenditure for general education, Title 1, Special Education and ELL students. The present study considered student demographic characteristics that were previously included in these research studies and attempted to match existing characteristics in the dataset to align with previous best practices in examining student outcomes. This process resulted in the following student-level characteristics being included: percentage of non-economically disadvantaged students, percentage of ELL students, percentage of students with disabilities, and percentage of non-white students.

Previous research studies, including Carey el. al (2012a, 2012b) controlled for differences in socioeconomic status. This study intends to explore the relationship between students who are non-economically disadvantaged and student outcomes. When considering economically disadvantaged students and non-economically disadvantaged students, one should consider if a school is Title 1 or not, which is based upon the percentage of students who receive free and reduced lunch. According to the USDOE (2018), a Title 1 school is any school with at least 40 percent poverty level or a state approved waiver. The purpose of Title 1 is to ensure that all children have an equal, fair, and significant opportunity to obtain a high quality of education (USDOE, 2018).

At minimum, the goal is for students to achieve proficiency on challenging state academic achievement standards and on state academic assessments (USDOE, 2018). It is each school's responsibility to conduct a comprehensive needs assessment in order to identify a plan for meeting the unique needs of the school's students (USDOE, 2018). A school-wide plan must

be in place, monitored, and revised on an ongoing basis. The school counselor should play a role in implementation, as well as aligning a Comprehensive School Counseling Program with this plan in order to meet the academic, career, and social/emotional needs of all students (ASCA, 2019).

School-wide plans should be rooted in the needs of the students in order to ensure that all students are provided fair and equal opportunities to be proficient on state academic standards and tests. The rationale behind the school-wide model is rooted in the idea that a comprehensive plan with school specific strategies is most effective in improving academic achievement for the lowest achieving students in schools (USDOE, 2018). The comprehensive approach of Title 1 parallels with the comprehensive school counseling program that guides best practices through the framework of the ASCA National Model (2012). Both Title 1 and the ASCA National Model aim to identify the diverse array of student needs, find ways to meet their needs, and measure outcomes.

With increasing diversity in terms of the student body population in K-12 settings, the population of ELL, or English Language Learners, is becoming more significant with a 45% growth in the ELL population in the state of Tennessee from 2011 to 2017 (TNDOE, n.d.). If the current trend continues, this number of students will exceed 60,000 by the end of the 2020-2021 school year. These increases in students who are ELL have a significant impact on the educational trends in the state, and their needs should be considered when it comes to determining what factors help them succeed in school. As school counselors are responsible for meeting diverse needs of their students, they can play an essential role in meeting the needs of these ELL students through developing and implementing a comprehensive school counseling program (ASCA, 2019).

ELL students face many challenges in school that affect their trajectory to attend college (Perez & Morrison, 2016). These challenges may include but are not limited to academics, socioeconomic status, level of parent involvement, and socio-emotional strains (Perez & Morrison, 2016). School counselor possess the ability to work with ELL students and increase their college going culture (Perez & Morrison, 2016). Because ELL students are a growing population in the United States, data should be collected on this population in order to best understand and be able to meet their needs. The two most recent state level studies conducted in Utah and Nebraska by Carey et. al (2012a, 2012b) included the ELL population. These two studies serve as a precedent to include ELL students in the current study because the data is available in the existing dataset.

Another student group that has also been previously included in state wide school counseling studies is students with disabilities, as their needs are uniquely different from other student populations. The needs of students with disabilities should be considered when looking at educational and other relevant outcomes, and the school counselor can be instrumental in ensuring their needs are met. The TN Department of Education's special education department promotes educational services for all students with special needs in the state of TN (TNDOE, n.d.). Since students with disabilities present different needs educationally and otherwise, the school counselor must consider how needs vary for different populations of students. Previous research studies have taking into consideration per pupil expenditure for students with special needs (Carey et. al., 2012). While this data was not available to use in the current study, the percentage of students with disabilities was available and included.

Race/ethnicity should also be considered when looking at educational outcomes. The National Center for Education Statistics (NCES) is a national organization focused on collecting,

analyzing, and reporting data related to education in the United States and in other nations (NCES, 2019). The NCES report *Status and Trends in the Education of Racial and Ethnic Groups* examined educational progress and challenges that students face in the United States by race/ethnicity (NCES, 2019). This report showed that over time there is an increasing number of students in the all racial/ethnic groups to have completed high school and continued their education into college (NCES, 2019). Despite these significant gains, one must consider the rate of progress and how it has varied among these racial/ethnic with regards to educational attainment and progress on key performance indicators.

According to NCES (2019), between 2000 and 2017 there was a decrease in the number of school-aged students who identified as White and African American, while student representation from other racial/ethnic groups increased, including Hispanic students, Asian students, and students identifying as Two or more races. Related to Reading Achievement, at grade 8, the gap between Hispanic and White students narrowed from 26 points in 1992 to 19 points in 2017 and the gap between African American and White students (25) was not measurably different from 1992 to 2017 (NCES, 2019). Related to Mathematics Achievement at grade 8, the gap between Hispanic and White students narrowed from 26 points in 1992 to 19 points in 2017, and the gap between African American and White students was not measurably different between 1992 and 2017. The TNDOE aims to report and reflect the performance of all students by considering scores calculated for all students as well as scores calculated for students of historically underserved groups (2018).

Continued research should examine the reasons behind these differences, select appropriate interventions to fill the gaps, and continue to track, measure, and monitor student growth and progress by gender and race/ethnicity. The school counselor has the ability play an

influential role in this process. Existing research illustrates the role of the school counselor in building a Comprehensive School Counseling Program, and how this framework subsequently provides opportunity to influence positive student academic outcomes (Sink et al., 2017). Beyond student demographic factors, school factors, including school counselor ratio and per pupil expenditure, should be defined and understood as well as their implications on student performance and achievement.

School Demographics

Based on previous school counseling literature on student outcomes, several school level characteristics have been consistently viewed as variables of interest. In the Utah and Nebraska state wide studies, the same three school level demographic characteristics were included: 9-12 enrollment, school setting, and percentage of full-time school counselors in each high school (Carey et al., 2012a, Carey et al., 2012b). Using the previous research as a precedent, the current study included school enrollment, the school counselor count, and the student to school counselor ratio.

Conclusion

In summary, this literature review has examined variables that will be investigated in the current study including student to school counselor ratios and academic outcomes and other demographic variables impacting student success. The review of existing literature suggests that given an ecological perspective, there are many intersecting factors that influence student academic outcomes (Bronfenbrenner & Morris, 2006; Goodman-Scott et al., 2018). School counseling literature suggests that there is a relationship between student to school counselor ratios and academic outcomes; however, a large majority of these studies were conducted with high school students (Lapan et al., 2012a; Lapan et al., 2012b; Parzych et al., 2019). Few studies

have explored school counselor ratios and academic outcomes with both middle school students and high school students. To date, only one study has examined school counselor to student ratios at the district level, and this research was primarily focused on Recognized ASCA Model Program (RAMP) and Student Outcomes in Elementary and Middle Schools (Akos, et al., 2019).

The current proposed study seeks to examine the relationship between school counselor ratios and academic outcomes considering student characteristics and school characteristics in a large, public, urban school district in the southeastern United States, beyond the context of RAMP and non-RAMP student outcomes (Akos et al., 2019). In order to determine the impact student to school ratios may have on academic outcomes at the middle school level and high school level, additional research should be conducted; therefore, the present study aims to add to the literature by exploring if a relationship between student to school counselor ratios and academic outcomes exists and how student demographic characteristics and school demographic characteristics are affected.

Chapter 3

Methodology

Data Source

The purpose of this study is to explore the relationship between school counselor ratios, and TCAP English Language Arts and Mathematics scores, while also considering school level characteristics and student level characteristics in secondary schools in one large, public, urban school district in the southeastern United States. A secondary school is defined as a school that serves middle and high school students. School level characteristics include school counselor count and per pupil expenditure. Student level characteristics include percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students.

This study will merge two archival data sets from the 2018-2019 school year. Both data sets were downloaded from the Tennessee Department of Education's website and are publicly available (TNDOE, n.d.). The first data set contains demographic information listed by school. The second data set contains TCAP testing score reports by school. The Tennessee Department of Education sets expectations for student's and utilizes the TCAP as a measure of student's learning and growing (TNDOE, 2020). TCAP provides a way to see if each student is meeting academic expectation for the grade level as well as a comparison tool to view peers across the state who took the same test (TNDOE, 2020).

Data inclusion criteria

This study will analyze data that is publicly available on the Tennessee Department of Education's website from the academic year 2018-2019. Data from the most recent year, 2019-2020, is not publicly available because of the Coronavirus pandemic and the impact it had on

student's inability to complete standardized assessments. Schools within the district were closed during the regularly scheduled testing window for the 2019-2020 school year. Schools that will be included in this study consist of 81 Middle Schools and High Schools within the district, serving students in Grades 6-12. Schools that will be excluded from the study are Middle Schools within any other district, which may include Achievement School District, Compass Community Schools, and Green Dot Public Schools.

The original study intended to compare Title I and non-Title 1 schools. Through the data collection process, it became clear that the vast majority of schools within the district classify as Title 1 schools. In order to make the present study more meaningful and robust, the study did not compare Title 1 and non-Title 1 schools but instead focused on school level characteristics and student level characteristics within one district. This further highlights the uniqueness of the district with regards to its demographic makeup.

This study only included schools that reported having a school counselor. Schools that reported 0 school counselors were not included in this study. To ensure the most accurate report of this data, the researcher first collected the number of school counselors via the school's website and subsequently called each school to ensure the accuracy of the reported number.

Research Questions

Two primary research questions drive this work:

(1) What is the average school counselor ratio for secondary schools within Shelby County?

(2) What is the relationship between the number of school counselors and school and student characteristics on the TCAP ELA and Math scores?

Data Analyses

This study utilized two archival data sets from the TNDOE's website. The researcher cleaned the datasets by downloading them into an Excel file and retaining only those data points relevant to answer the research questions of this study. Once the data was cleaned, it was imported into SPSS. The researcher used SPSS to run descriptive statistics, including means, standard deviations, minimum and maximum output. The analysis included obtaining descriptive statistics and conducting hierarchical stepwise linear regression analyses.

For research question one, descriptive statistics were run to provide evaluate the student to school counselor ratios in Shelby County secondary schools. The analysis included a mean, standard deviation, minimum and maximum. For research question two, a hierarchical linear regression was used. There is a precedent as set by Carey et. al (2012a, 2012b) in both the Utah and Nebraska state wide studies for using this type of analysis on school counselor ratios and student outcomes. The recommendation to use hierarchical linear regression was given by a national organization called the National Leadership Cadre that is devoted to improving school counseling practice when exploring the association between school and student characteristics and academic outcomes (National Leadership Cadre, 2007).

For the hierarchical linear regression, in the first step, the two school level characteristics including expenditure per student and school counselor count were entered. In the second step, student level characteristics including percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students was inputted. All assumptions were checked and met for the data set, which will be discussed in detail in the results section of this dissertation.

Definition of Terms

The definition of terms originally provided in Chapter 1 is copied here to assist the reader

Students who Fail the TCAP include two Levels: Level 1 Below and Level 2 Approaching:

(11) High School: High School is defined by a school within the district that serves students in grades 9-12

(12) Middle School: Middle School is defined by a school within the district that serves students in grades 6-8

(13) Secondary School: Secondary School is defined by a school within the district that serves students in grades 6-12

(14) TCAP Level 1 Below: The student has a minimal understanding and ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(15) TCAP Level 2 Approaching: The student is approaching understanding and has a partial ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(16) TCAP Level 3 On Track: The student has a comprehensive understanding and has a thorough ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(17) TCAP Level 4 Mastered: The student has an extensive understanding and has an expert ability to apply the subject area knowledge and skills as defined by the Tennessee Academic Standards (TNDOE, 2020).

(18) TCAP Failing Score: This category includes students in the Level 1 Below and the Level 2 Approaching categories.

(19) TCAP Passing Score: This category includes students in the Level 3 On Track and the Level 4 Mastered categories.

(20) Title 1 School: Federally funded programs in high poverty schools that target children with low achievement.

Chapter 4

Results

Introduction

This chapter presents statistical analysis for each of the two research questions. It is divided into the following sections: (a) descriptive statistics, (b) hierarchical linear regression for ELA achievement and (c) for hierarchical linear regression for Math achievement. All statistical analysis in this chapter were performed with IBM SPSS Statistics 24.

Descriptive Statistics

Descriptive statistics are provided for (a) summary statistics for participating schools and (b) average number of school counselors and school counselor ratios. The participating schools in this study included secondary schools within one district. The total sample included 81 secondary schools. Descriptive statistics were run to summarize the grade levels each of these schools served (See Table 1). Table 1 shows that the largest percentage of schools included in the sample were middle schools that served students in grade 6, 7, and 8 making up 39.5% of the total sample. Table 1 also shows that the second largest percentage of schools included in the sample were high schools that served students in grades 9-12 making up 30.9% of the total sample. Schools serving other grade levels were included in the sample though this study only analyzed data from grades 6-12.

Table 1

School Characteristics

Grade Levels Served	*Frequency*	*Percent*
6,7,8	32	39.5
9-12	25	30.9
K-8	8	9.9
6-12	6	7.4
5,6	1	1.2
5-8	3	3.7
Pk-8	3	3.7
7,8	1	1.2

Table 2

School and Student Characteristics

Characteristic	*M*	*SD*	*Minimum*	*Maximum*
Non-white %	94.484	11.2544	37.2	100.0
Non-eco Disadv %	41.373	20.1356	2.0	92.6
Students with Disabilities %	12.636	4.8456	1.2	24.2
ELL %	4.230	6.1082	0	27.6
School Counselor Count	2.01	1.346	1	6
Per Pupil Expenditure	7321.177	2545.417	3106.37	26094.22

In order to answer research question one, "What is the average SC ratio for secondary schools within Shelby County?" the average number of school counselors and counselor ratios for the 81 schools was obtained. Results showed a mean of 2.01 (SD=1.346), with a minimum number of school counselors in a school was one and the maximum number was six (see Table 2). The average school counselor ratio was one school counselor to every 317 students.

Hierarchical Linear Regression Results

English Language Arts

A hierarchical linear regression model predicting the percent of students who earned scores of proficient or better on their ELA TCAP assessment using school level characteristics and student level characteristics was estimated using SPSS. School level characteristics included school counselor count and per pupil expenditure. Student level characteristics included percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students.

The percent of students proficient or higher was not normally distributed; therefore, a square root transformation was used with the outcome variable. A square root transformation can be useful for normalizing a skewed distribution (Urdan, 2017). All assumptions of hierarchical linear regression were checked and met. The square root of the percentage of proficient students was a continuous, quantitative variable. Each school was treated as an independent observation and may have shared some commonalities with regards to student performance, since all schools were in the same district.

Figure 1 shows the scatterplot of residuals for ELA, indicating that there were two outliers, which were retained because they were not significantly influential. Figure 2 shows a histogram of residuals, which indicated that the assumption of normality in the data was met. Additionally, the normal q-q plot (see Figure 3) of the residuals also indicated that the data met the assumption of normality, as the points on the plot roughly followed a 45-degree angle and the line of points did not curve. Assumptions of homoscedasticity of residuals were evaluated using Figure 1. The researcher also assessed for multicollinearity using Variance Inflations Factors (VIF) which were all under 10, suggesting that the researcher could conduct a hierarchical linear regression (Urdan, 2017).

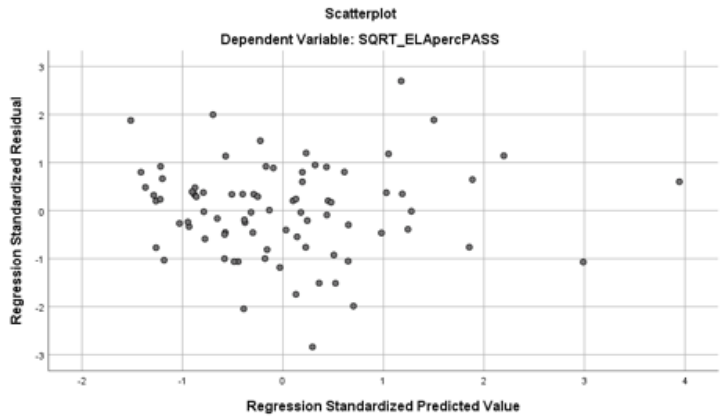

Figure 1

Scatterplot of Residuals for ELA

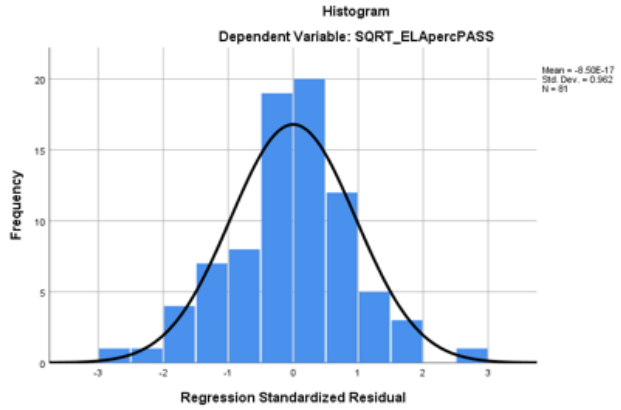

Figure 2

Histogram of Residuals for ELA

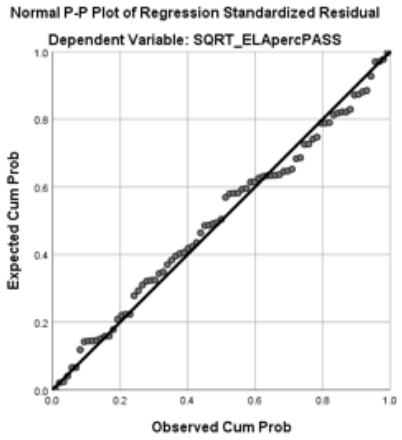

Figure 3

Q-Q Plot of Residuals for ELA

The estimated Model 1 containing school level characteristics is SQRT ROOT of percent of students who earned scores of proficient or better = .376+ .013*school counselor ratio+ (-2.87)*average expenditure per student. The model containing school level characteristics was not significant in explaining SQRT ROOT of percent of students who earned scores of proficient or better, F(2, 78)=.773, p=.465. Specifically, the model explained 1.9% of the variability in ELA scores. Neither school counselor ratio nor per pupil expenditure were significant predictors of ELA achievement $t_{sccount}(79) = 1.012$, p=.315 and $t_{expenditure}(79) = -.432$, p=.667. The standardized coefficients indicated that school counselor ratio was more important as a predictor of ELA scores than average expenditure per pupil.

The estimated Model 2 containing student level characteristics is SQRT ROOT of percent of students who earned scores of proficient or better = .873+ (-.005)*school counselor ratio + 3.51*average expenditure per student + (-.005)*non-white percentage + .003*non-economically disadvantaged percentage+ (-.010)*student with disability percentage + .000*percentage of ELL students. The model containing student level characteristics was significant in explaining SQRT ROOT of percent of students who earned scores of proficient or better, F(6, 74)=.27.598, p<.001.

Specifically, the model explains 69.1% of the variability in SQRT ROOT of percent of students who earned scores of proficient or better. Percentage of non-white students, percentage of non-economically disadvantaged students, and percentage of students with disabilities were significant predictors of ELA achievement, $t_{nonwhite\_PCT}(73) = -4.928$, $p < .001$, $t_{nonecodisadv}(73) = 3.707$, $p < .001$, and $t_{studisb}(73) = -4.179$, $p < .001$.

In terms of practical significance, the standardized coefficients indicated that the percentage of non-white students was the most significant predictor of ELA scores followed by percentage of non-economically disadvantaged students and percentage of students with disabilities. Schools with a higher percentage of students with disability had on average a lower percent of students who earned scores of proficient or better. Schools with a higher percentage of non-white students had on average a lower percent of students who earned scores of proficient or better. Schools with a higher percentage of non-economically disadvantaged students had a higher percent of students who earned scores of proficient or better, when other predictors are fixed. Table 3 shows an overview of ELA Regression models.

Table 3

ELA Regression Table Summary

		Unstandardized coefficients		*Standardized coefficients*					
Step	*Predictor*	*B*	*SE*	*β*	*p*	R^2	R^2 *change*	*F*	*p*
1						.019	.019	.773	.465
	SC Count	.013	.013	.118	.315				
	Expenditure	-2.87	.000	-.050	-.432				
2						.691	.672	27.598	.000
	SC Count	-.005	.008	-.042	.558				
	Expenditure	3.51	.000	.061	.369				
	Nonwhite PCT	-.005	.001	-.404	.000				
	Noneco Disadv PCT	.003	.001	.361	.000				
	StuDisab PCT	-.010	.002	-.319	.000				
	ELL PCT	.000	.002	-.014	.829				

N=81. SE= standard error of *B*.

Math Achievement

Using SPSS, a hierarchical linear regression model predicting the percent of students who earned scores of proficient or better on their Math TCAP assessment using school level characteristics and student level characteristics. School level characteristics included school counselor count and per pupil expenditure. Student level characteristics included percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students.

The percent of students proficient or higher was not normally distributed; therefore, a square root transformation was used with the outcome variable. A square root transformation can be useful for normalizing a skewed distribution (Urdan, 2017). All assumptions of hierarchical linear regression were checked and were met. The square root of the percentage of proficient students was a continuous, quantitative variable. While each school was in the same district and might share some commonalities with regards to student performance, each school was treated as an independent observation.

Figure 4 shows the scatterplot of residuals for Math and it indicated two outliers. Figure 5 shows a histogram of residuals which indicates that the assumption of normality in the data has been met. Additionally, the normal q-q plot (Figure 6) of the residuals also indicated that the data meets the assumption of normality as the points on the plot roughly follow a 45-degree angle and the line of points does not curve. Assumptions of homoscedasticity of residuals were evaluated using Figure 4. The researcher also assessed for multicollinearity using Variance Inflations Factors (VIF) which were all under 10, suggesting that the researcher could conduct a hierarchical linear regression (Urdan, 2017).

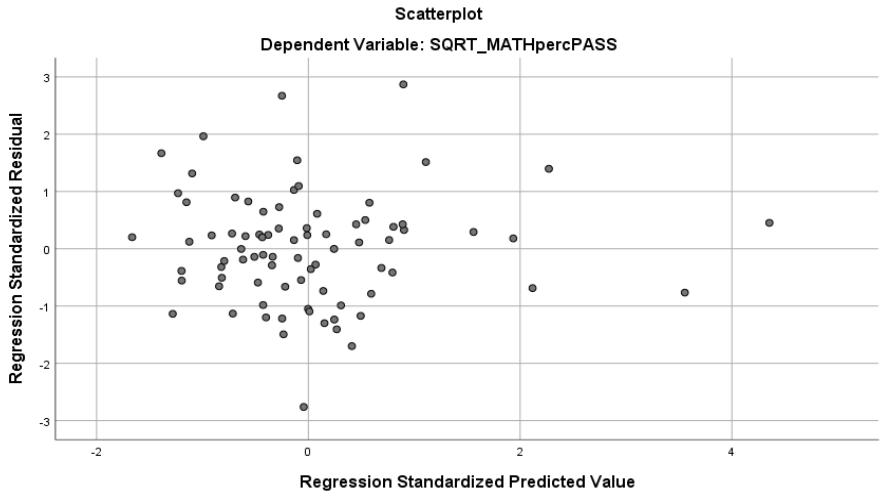

Figure 4

Scatterplot of Residuals for Math

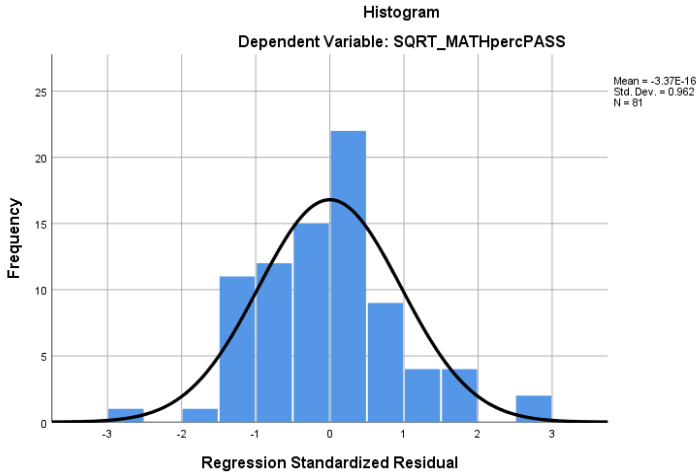

Figure 5

Histogram of Residuals for Math

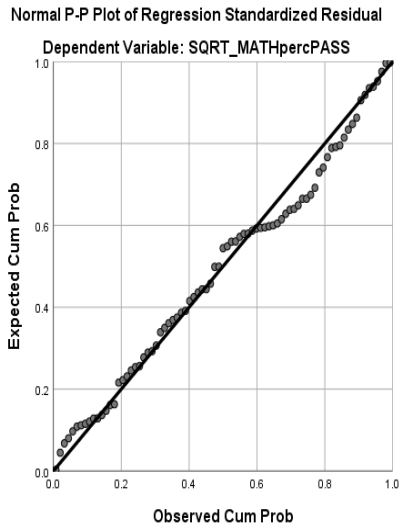

Figure 6

Q-Q Plot of Residuals for Math

The estimated Model 1 containing school level characteristics is SQRT ROOT of percent of students who earned scores of proficient or better = .370+ .007*school counselor ratio+ (-6.758)*average expenditure per student. The model containing school level characteristics was not significant in explaining SQRT ROOT of percent of students who earned scores of proficient or better, $F(2, 78)=.714$, $p=.493$. Specifically, the model explained 1.8% of the variability in Math scores. Neither school counselor ratio nor per pupil expenditure were significant predictors of Math achievement $t_{sccount}(79) = .492$, $p=.624$ and $t_{expenditure}(79) = -.922$, $p=.360$. The standardized coefficients indicated that average per pupil expenditure was more important as a predictor of Math scores than the school counselor ratio.

The estimated Model 2 containing student level characteristics is SQRT ROOT of percent of students who earned scores of proficient or better = 1.264+ (-.003)*school counselor ratio + (-2.241)*average expenditure per student + (-.008)*non-white percentage + .000*non-economically disadvantaged percentage+ (-.013)*student with disability percentage + .000*percentage of ELL students. The model containing student level characteristics is

significant in explaining SQRT ROOT of percent of students who earned scores of proficient or better, F(6, 74)=11.857, p<.001. Specifically, the model explains 49% of the variability in SQRT ROOT of percent of students who earned scores of proficient or better. Percentage of non-white students and percentage of students with disabilities were significant predictors of Math achievement $t_{nonwhite\_PCT}(73) = -5.175$, $p < .001$ and $t_{studisb}(73) = -3.999$, $p < .001$

In terms of practical significance, the standardized coefficients indicated that the percentage of non-white students is the most significant predictor of Math scores followed by percentage of students with disabilities. Schools with a higher percentage of non-white students had on average a lower percent of students who earned scores of proficient or better. Schools with higher percent of student with disability had on average a lower percent of students who earned scores of proficient or better. Table 2 shows an overview of the Math Regression models.

Table 2

Math Regression Table Summary

		Unstandardized coefficients		*Standardized coefficients*					
Step	*Predictor*	*B*	*SE*	*β*	*p*	R^2	R^2 *change*	*F*	*p*
1						.018	.018	.714	.493
	SC Count	.007	.014	.057	.624				
	Expenditure	-6.758	.000	-.107	.360				
2						.490	.472	11.857	.000
	SC Count	-.003	.011	-.024	.791				
	Expenditure	-2.241	.000	-.036	.685				
	Nonwhite PCT	-.008	.002	-.545	.000				
	Noneco Disadv PCT	.000	.001	-.030	.814				
	StuDisab PCT	-.013	.003	-.393	.000				
	ELL PCT	.000	.002	.011	.893				

N=81. SE= standard error of *B*.

Chapter 5: Discussion

Introduction

Chapter 5 includes a summary of the findings as well as a discussion of the implications of the results for school counselors and counselor educators. The results of this study indicated that while school counselor ratios in one southeastern district in the United States were not significantly associated with improved student academic outcomes, several student-level characteristics were significantly predictive of improved student ELA and Math outcomes. These results are interpreted within the context of Bronfenbrenner's ecological framework, which explains that individual student outcomes are influenced by a variety of complex factors that work within a system (Bronfenbrenner& Morris, 2006). The chapter ends with a discussion of limitations, areas for future research, and concluding remarks.

Research Question One

Regarding all secondary schools in one district who had at least one school counselor, the mean number of school counselors was 2.01 (SD=1.346), with a minimum of one and a maximum of six. The average school counselor ratio was 317:1, with a minimum ratio of 26:1 and a maximum ratio of 799:1, while the current recommended student to school counselor ratio is 250:1 (ASCA, 2019). Existing research indicates that not all students receive the same amount attention from their school counselor because of the varying ratios of students to school counselor (Akos et al., 2019; Gagnon & Mattingly, 2016; Goodman-Scott et al., 2018).

The National Association for College Admission Counseling [NACAC] and the American School Counselor Association partnered to provide a glimpse of ten-year trends in school counselor ratios from the academic year 2004-2005 to 2014-2015 (NACAC, n.d.). This report revealed a national student to school counselor ratio of 482:1. The ratio in Tennessee was 339:1. The ratios in Arkansas and in Mississippi were 373:1 and 438:1 respectively.

Previous research shows that when students have access to their school counselor, they have more positive outcomes, including higher graduation rates and fewer disciplinary incidents (Akos et al., 2019; Gagnon & Mattingly, 2016; Goodman-Scott et al., 2018). In addition, other improvements in academic, emotional, and social performance exist; however, more research is needed to provide additional evidence supporting these claims (Carey et. al., 2012a, Carey et. al, 2017b, Gagnon & Mattingly, 2016).

Research Questions Two

The researcher used hierarchical linear regression models to evaluate the relationship between the percent of students who earned scores of proficient or better on their ELA TCAP and Math TCAP assessment using school-level characteristics and student-level characteristics. School level characteristics included school counselor count and per pupil expenditure. Student-level characteristics include percentage of non-white students, percentage of non-economically advantaged students, percentage of special education students, and percentage of ELL students.

English Language Arts

In Model 1 which contained school-level characteristics, neither the school counselor ratio nor the average expenditure was statistically significant in predicting ELA scores. Compared to previous literature, these results are not consistent. In two state level studies in Nebraska and Utah, the extent to which each school had a well implemented comprehensive school counseling program was associated with higher reading proficiency (Carey et. al., 2012a, Carey et. al., 2012b). Similarly, Sink and Stroh (2003) found that the length of time students were enrolled in a school with a highly implemented school counseling program, the more likely students were to have higher Grade 3 Iowa Assessments Test [ITBS] reading scores and Grade 4 Washington Assessment of Student Learning [WASL] reading scores. Sink et al. (2008), found

results consistent with these indicating that schools with highly implemented comprehensive school counseling programs out-performed non-implementing schools on Grade 6 ITBS language Grade 7 scores.

The present study does not extend these findings, perhaps due to the various other factors that impact a student's performance on standardized testing. Additionally, the present study did not include information regarding if each school had a comprehensive school program and the length of time this program had or had not been in place. These results can be explained through Bronfenbrenner's ecological model, which provides context about how student academic outcomes are influenced by many factors, one of which may involve the student to school counselor ratio (Bronfenbrenner& Morris, 2006).

However, the standardized coefficients indicated that school counselor ratio was a stronger predictor of ELA scores compared to average expenditure per pupil. This should be noted for practical significance, as there was a stronger association between school counselor ratios and ELA outcomes. Previous studies controlled for demographic differences among schools in order to focus on which school counseling program features accounted for the most significant amount of variability in student outcomes (Carey et. al, 2012a, Carey et. al, 2012b).

In Model 2, student level characteristics, percentage of non-white students, percentage of non-economically disadvantaged students, and percentage of students with disabilities were significant predictors of ELA achievement. This is important to note that out of all of the variables that were considered, student level characteristics were significant predictors of ELA achievement, while school level characteristics were not. It is worth investigating inequalities in education as well as achievement gaps and why they exist especially with these student populations. Investigating ways to improve student achievement may take years of continued

research. Similar to implications that were found in Goodman-Scott et al., (2018) study, the current study recommends that an ecological lens should be used when investigating school counselor ratios. School counselors should develop a comprehensive school counseling program that is developmentally appropriate and that meets the needs of the school's population in order to improve student outcomes.

Math

In Model 1, which contained school-level characteristics, neither the school counselor ratio nor the average expenditure was statistically significant. Compared to previous literature, these results are not consistent. In the two state level studies in Nebraska and Utah, the extent to which each school had a well-implemented comprehensive school counseling program was associated with higher mathematics proficiency (Carey et. al., 2012a, Carey et. al., 2012b). Similarly, Sink and Stroh (2003) found that the length of time students were enrolled in a school with a highly implemented school counseling program, the more likely students were to have higher Grade 3 ITBS mathematics scores and Grade 4 WASL mathematics scores. Sink et al. (2008), found results consistent with these indicating that schools with highly implemented comprehensive school counseling programs out-performed non-implementing schools on Grade 6 ITBS math scores and Grade 7 WASL math scores. The present study does not extend these findings, perhaps due to the various other factors that impact a student's performance on standardized testing. Similar to Model 1 for ELA outcomes, these results be explained through Bronfenbrenner's ecological model, which provides context about how student academic outcomes are influenced by many factors, one of which may be the student to school counselor ratio (Bronfenbrenner & Morris, 2006).

Alternatively, the standardized coefficients indicated that average expenditure was more important of a predictor of ELA scores than school counselor ratio. This should be noted for practical significance, as there is a stronger association between per pupil expenditure and Math outcomes. Previous studies controlled for demographic differences among schools in order to focus on which school counseling program features accounted for the most significant amount of variability in student outcomes (Carey et. al, 2012a, Carey et. al, 2012b).

In Model 2, student level characteristics, percentage of non-white students, and percentage of students with disabilities were significant predictors of Math achievement. It should be noted that out of all of the variables that were considered, student level characteristics were significant predictors of Math achievement, while school level characteristics were not. Future research should investigate inequalities in education as well as achievement gaps and why they exist among these student populations. Investigating ways to improve student achievement may take years of continued research. Similar to implications that were found in Goodman-Scott et al., (2018) study, the current study recommends that an ecological lens should be used when investigating school counselor ratios. School counselors should develop a comprehensive school counseling program that is developmentally appropriate and that meets the needs of the school specific's population in order to improved student outcomes.

Implications for School Counselors

The results from the current research study are not consistent with previous research related to school counselor ratios and academic outcomes (Sink et. al., 2008, Sink & Stroh, 2003, Carey et. al, 2012a, Carey et. al, 2012b). The present study demonstrates that student level characteristics are more closely related to TCAP ELA and Math scores than school level characteristics, including the school counselor ratio. With regards to the role of the school

counselor, counselors should be educated and informed as to the demographics of the students they serve in order to best meet the needs of those students and to promote positive academic outcomes (ASCA, 2019). In order to do this, school counselors should implement a comprehensive school counseling school counseling program as outlined by ASCA (ASCA, 2019). School counselors should be intentional about assessing the needs of their students and school community to maximize their impact.

With regards to standardized testing assessments, school counselors should be aware of the limitations and bias present in standardized instruments that may further broaden achievement gaps for students from diverse backgrounds (Lapan et al., 2012a; Lapan et al., 2012b; Parzych et al., 2019). Achievement gaps may exist for a variety of reasons that are worth future investigation. It is worthwhile to consider the context and demographic information of Shelby County as it compares to other districts across the state of Tennessee and across the country. The present study did not compare the results from Shelby County to other counties. Shelby County Schools (SCS) is Tennessee's largest school district and is among the 25 largest public school districts in the nation (TNDOE, n.d.). Currently, there are 233 schools in the district serving students in grades PK-12. Data regarding a variety of school and district level outcomes is publicly available on each school's State of Tennessee required Report Card and ScoreCard.

Academic outcomes are one way to measure a student's success in school; however, flaws exist in the way these outcomes are measured (Parzych et al., 2019). School counselors are called to serve as positive change agents, serving on behalf of what is in the best interest of students (Gysbers, 2006). Stepping into this role of advocates and leaders for students, school counselors need to be able to clearly identify student needs and address achievement gaps,

especially at the student level. It should be noted that it takes time to close achievement gaps, even after policy changes are made. For example, even after TNBOE implemented policy 5.103 on April 21, 2017, it took years for more school counselors to be placed in schools. Change takes time and school counselors should be dedicated and passionate about promoting positive changes.

Strong leadership in the field has previously influenced the development of comprehensive school counseling programs and continued leadership must guide future efforts to minimize achievement gaps and remedy educational inequities (Gysbers, 2006). Data-driven programs provide an opportunity for school counselors to meet student needs, deliver programs, and measure outcomes to influence student success and direct future research. Therefore, school counselors should critically evaluate existing assessments administered to students and investigate their psychometric properties to justify their use. More specifically, school counselors should be aware of the student demographic information in their school and in their district. For the district in this study, a majority of the schools classify as Title 1 schools. A Title 1 School is a federally funded program in high poverty schools that target children with low achievement (USDOE, 2018). This one piece of data allows school counselors and other invested stakeholders to recognize the financial needs of the school as well as the social and emotional needs of the students who may attend the school. An existing body of research indicates that regular and continued access to the school counselor is necessary for student success, and this is especially true for students who are in need of intervention and students who are in a high poverty district (Carroll & Carroll, 2006; Lapan et al., 2012a).

TCAP ELA and Math scores are one way to measure student outcomes. School counselors should become educated and informed regarding the reliability and validity of these

standardized assessments, especially regarding the population on which these assessments were normed and to evaluate bias that may exist within assessments. In their advocacy role, school counselors should pursue ways of measuring student outcomes that align with the students they serve. Other relevant outcomes may include discipline rates, attendance rates, and graduation rates. Statewide data collection efforts may consider evaluating additional sources of data more closely aligned with the role of school counselors. School counselors should share outcome data in an ecological context according to Bronfenbrenner's ecological model, especially since this study indicated that student level characteristics are more associated with academic outcomes (Bronfenbrenner & Morris, 2006).

Lastly, in alignment with Bronfenbrenner's Ecological model, school counselors are one influential part of the school system and hold power to positively influence the growth and development of student's academic, social/emotional, and college/career needs (ASCA, 2019; Bronfenbrenner & Morris, 2006). School counselors should continue to consult and collaborate within different systems to engage with invested stakeholders across multiple levels to create positive ripple effects throughout the school.

Limitations and Future Research

As with all research studies, the results must be interpreted within the context of existing limitations. There were limitations regarding the variables that were available for inclusion in the current study. For example, if the state of Tennessee collected data that was pertinent to social and emotional learning, the school counselor ratio may show more of a significant impact on these outcomes; however this source of data is not included in standard accountability data reports. Next, this study utilized an archival data set. The researcher originally intended to conduct survey research in order to ask specific questions in alignment with other state level

studies; however, due to the Coronavirus Pandemic, survey research in schools was not an option. This study matched existing archival data as closely as possible with school level characteristics and student level characteristics in order to make meaningful inferences. To increase robustness of the associations between student and school level characteristics and outcomes, future survey research using mixed method and longitudinal designs will be necessary.

Another limitation that should be addressed is that in the first step of the hierarchical linear regression, the school counselor count was used in the equation. This is different from the school counselor ratio. This could be viewed as a limitation to the current study, as the school counselor count may be high; however, with a large student body population, the school counselor ratio may be well above the ASCA recommendation. School counselor count was used instead of school counselor ratio because the number was confirmed by each school; whereas, the enrollment numbers were not confirmed for accuracy. In future studies, researchers may want to consider using the school counselor ratio in the regression model as opposed to the school counselor count.

This study provides a foundation for district level studies, since no other study has been conducted looking at school level and student level characteristics on student outcomes in secondary schools within one district. Replication of similar studies should be conducted in order to see if findings are consistent. Researchers may consider including additional student outcomes that may be more closely related to the roles of a school counselor, such as attendance, discipline, and graduation rates. Other studies may consider including the level of implementation of the ASCA National Model to identify which program components are the most significant. Additionally, future researchers in the field may consider conducting a task

analysis of school counseling duties, analyzing day to day responsibilities and how they are related to student outcomes because roles and responsibilities of school counselors can vary significantly from school to school.

Conclusion

The results of this study indicated that while school counselor ratios in one southeastern district in the United States were not significantly associated with improved student academic outcomes, several student level characteristics were significantly predictive of improved student ELA and Math outcomes. Through an ecological perspective, there are numerous intersecting factors that may influence student academic outcomes, and the school counselor ratio is just one of these factors (Bronfenbrenner & Morris, 2006; Goodman-Scott et al., 2018). This study adds to the existing literature, seeking to further understand the measurable outcomes associated with school counselor ratio. This study revealed that the average school counselor ratio was 317:1 in the district, while the current recommended student to school counselor ratio is 250:1 (ASCA, 2019). This compares to the ratio in Tennessee which was 339:1.

Hierarchical linear regression revealed that regarding ELA and Math, student level characteristics were significant predictors achievement, while school level characteristics were not. Reasons behind these gaps in achievement should be considered within the school counseling profession and for future research. As school counselors embody their role as advocates and changes agents, they can identify and challenge educational inequities and barriers to student success. The value of the role of the school counselor exceeds far beyond improving academic outcomes, as school counselors are tasked with meeting student's academic, career, and social/emotional needs, and can serve as an influential resource for helping students grow and develop (ASCA, 2016; Carrell & Carrell, 2006; Gysbers & Henderson, 2001; Lapan et al.,

2001; Lapan et al., 2012). Because the needs of each school and each student are different, when school counselors are able to implement a comprehensive school counseling program, they are best suited to proactively serve their school community (Cinotti, 2014; Fye, Miller, & Rainey, 2018). School counselors should continue to use their voice and advocate for their profession at the local, state, and national level to raise awareness and promote positive changes within the educational system.

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