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Jasolyn Lashon Henderson
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ACCEPTANCE

This dissertation, DISPROPORTIONALITY IN SPECIAL EDUCATION: THE RELATIONSHIP BETWEEN PREREFERRAL INTERVENTION TEAMS AND THE SPECIAL EDUCATION PROCESS, by JASOLYN LASHON HENDERSON, was prepared under the direction of the candidate's Dissertation Advisory Committee. It is accepted by the committee members in partial fulfillment of the requirements for the degree Doctor of Philosophy in the College of Education, Georgia State University.

The Dissertation Advisory Committee and the student's Department Chair, as representatives of the faculty, certify that this dissertation has met all standards of excellence and scholarship as determined by the faculty. The Dean of the College of Education concurs.

_____
Stephen Truscott, Psy.D.
Committee Chair

_____
T. Chris Oshima, Ph.D.
Committee Member

_____
Andrew Roach, Ph.D.
Committee Member

_____
Miles Irving, Ph.D.
Committee Member

_____
Deborah Crockett, Ph.D.
Committee Member

_____
Date

_____
Joanna White, Ed.D.
Chair, Department of Counseling and Psychological Services

_____
Randy W. Kamphaus
Dean and Distinguished Research Professor
College of Education

AUTHOR'S STATEMENT

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Jasolyn L. Henderson
562 Ivey Way SE
Mableton, GA 30126

The director of this dissertation is:

Dr. Stephen Truscott
Department of Counseling and Psychological Services
College of Education
Georgia State University
Atlanta, GA 30303 - 3083

VITA

Jasolyn L. Henderson

Address

562 Ivey Way, SE
Mableton, GA 30126

Education

Ph.D., School Psychology, 2008, Georgia State University, Atlanta, GA
SSP, School Psychology, 2002, Louisiana State University-Shreveport, Shreveport, LA
B.S., Psychology, 1998, Louisiana State University, Baton Rouge, LA

Honors and Awards

Kenneth and Mary Matheny Scholarship, Georgia State University, 2002
Graduate Research Assistant, Georgia State University 2002-2005
Louisiana School Psychological Association, Will Bergeron Scholarship, 2001
National Association of School Psychologists, ERT Minority Scholarship, 2000
Outstanding Graduate Student in School Psychology, Louisiana State University-Shreveport 2001
Graduate Research Assistant, Louisiana State University-Shreveport, 2000-2001
Louisiana State University Honors Scholarship Recipient, 1994-1998
Dean's List Honor Recipient, 1996-1998

Association Memberships

National Association of School Psychologists
Georgia Association of School Psychologists
Student Association of School Psychologists
Psi Chi

Professional Experience

School Psychologist. Coweta County Schools, Newnan, GA. August 04-Present

School Psychologist. Butts County Schools, Jackson, GA. July 03-June 04

Associate School Psychologist Intern. Austin Independent School District, Austin, TX. Aug. 01-May 02.

Professional Presentations

Henderson, J.L., Kreskey, D.D., Hannon-White, F., Brooks, J. (October 2006). "Implementing the Pyramid of Interventions: How School Psychologists Can Make It Work." Georgia Association of School Psychologists. Columbus, Georgia.

Henderson, J. L., Varjas, K. & Lopp, K.A. (April 2004). "An Exploratory Investigation of Adaptive Behavior and Acculturation for African American Adolescents." Symposium presented at the National Association of School Psychologists' Conference. Dallas, Texas.

Lopp, K.A., Varjas, K., Henderson, J.L. (April 2004). "Girls at Risk: Gender Differences and Anger." Symposium presented at the National Association of School Psychologists' Conference. Dallas, Texas.

Varjas, K., Lopp, K., & Henderson, J. (April, 2003)."Conducting Culturally Appropriate Social/Emotional/Behavioral Assessments." Mini–Skills presented at the National Association of School Psychologists' Conference. Toronto, Canada.

Varjas, K., Siegel, C., Perez, L., Lopp, K., and Henderson, J. (April, 2003). "School Psychologists Addressing Diversity Issues in Assessment." Mini–Skills presented at the National Association of School Psychologists' Conference. Toronto, Canada.

Varjas, K., Lopp, K., and Henderson, J. (March, 2003). "Checklists and Beyond: Conducting Culturally Appropriate Social, Emotional, and Behavioral Assessments". California Association of School Psychology 2003 Annual Conference. Los Angeles, CA.

Workshops

Varjas, K., Lopp, K., Henderson, J. (February, 2003). "Culturally appropriate assessment: Adaptive behavior and social/emotional and behavioral concerns", Clayton County Public Schools. Jonesboro, GA,

Grants

Lopp, K., Varjas, K., and Henderson, J. (2002). Georgia School Psychologists Addressing Issues of Diversity in Practice. Grant awarded from the Georgia Association of School Psychologists.

Henderson, J.L., Varjas, K., and Lopp, K.A. (2002). An Exploratory Investigation of Acculturation and Adaptive Behavior for African American Adolescents. Grant awarded from the Georgia Association of School Psychologists.

ABSTRACT

DISPROPORTIONALITY IN SPECIAL EDUCATION: THE RELATIONSHIP BETWEEN PREREFERRAL INTERVENTION TEAMS AND THE SPECIAL EDUCATION PROCESS

By

Jasolyn L. Henderson

The disproportionality of minority students in special education has received much attention throughout the years. Prereferral Intervention Teams (PITs) have been frequently recommended as a means of diminishing disproportionality. One purpose of this study was to examine the impact of PITs on the special education process. This was achieved through the calculation of risk ratios by ethnic/racial group at key phases of the special education process, (a) including referral to PITs, (b) referral for initial evaluations, (c) referral for special education, and (d) special education placement phases. Results indicated that African American students were significantly more likely to be represented at each phase. This study also aimed to determine if there was a difference in PIT implementation based on ethnicity and whether or not students proceeded through the special education process. There were significant correlations ($p < .05$) found between the "Behavioral Definition" and "Hypothesized Reason for Problem" components of the problem-solving process and phases of the special education process. Significant correlations ($p < .05$) were also observed between ethnicity, initial evaluations, and special education referrals and also between initial evaluations, special education referrals, and special education placements ($p < .01$). Using the Likert Scale and Scoring

Rubric for Problem-solving Components to assess PIT implementation on 251 PIT records, five component scores of the scale served as dependent variables, while independent variables included ethnicity (Black/White), being referred for an initial evaluation (yes/no), and being referred for special education (yes/no). The results of 2 x 2 ANOVAs showed statistically significant differences ($p < .10$) between PIT records for students who were and were not referred for initial evaluations and students who were and were not referred for special education on only one component of PIT implementation. This indicates that overall PIT implementation was similar between students of different ethnicities, as well as between students who progressed through the special education process and those that did not. The current findings emphasized the importance of ensuring quality implementation of PITs and demonstrated their limited impact on disproportionality and student outcomes, such as referrals to special education, when implemented with poor integrity.

DISPROPORTIONALITY IN SPECIAL EDUCATION: THE RELATIONSHIP BETWEEN PREREFERRAL INTERVENTION TEAMS AND THE SPECIAL EDUCATION PROCESS

by
Jasolyn L. Henderson

A Dissertation

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in
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in
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in
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ABBREVIATIONS

PIT	Prereferral Intervention Team
SST	Student Support Team
MR	Mental Retardation
EMR	Educable Mental Retardation
TMR	Trainable Mental Retardation
SLD	Specific Learning Disability
SI	Speech-Language Impaired
HI	Hearing impaired
VI	Vision impaired
OI	Orthopedically impaired
OHI	Other health impaired
SED	Seriously Emotionally Disturbed
NUL	National Urban League
IDEA	Individuals with Disability Education Act
EHA	Education for all Handicapped Children Act or PL 94-142
NEA	National Education Agency
LEA	Local Education Agency
OCR	Office of Civil Rights
NRC	National Research Council
SES	Socioeconomic Status

IEP Individualized Education Plan

RAI Rater Agreement Index

RTI Response to Intervention

CHAPTER 1

INTRODUCTION

Since the involuntary arrival of peoples of African descent in 1619 to what would eventually become the United States of America, prejudice, racism, segregation, and intolerance have been components of the American socio-cultural environment (Eltis, 1993; Patton, 1998). The Reconstruction Era following the Civil War did not bring the significant changes in the treatment of African Americans as intended by the newly ratified thirteenth and fourteenth constitutional amendments (Foner, 1999), which abolished slavery and guaranteed equal protection of all citizens under the law. Shortly after their ratification, "racial inequality was reestablished as a constitutional standard" with the origination of Jim Crow laws (Foner, 1999, p. 2007). "Jim Crow" laws were enacted in some southern states to re-institutionalize the segregated American society (Folmsbee, 1949). Following the establishment of "Jim Crow" laws and ten years subsequent to the ratification of the 13th and 14th Amendments, the landmark Supreme Court decision *Plessy v. Ferguson* (1896) upheld the edict of segregation. Though freedom from slavery had been established after the Civil War, the fight for equality raged on. In order to achieve economic and social equality, African Americans needed to be educated to access the benefits of citizenship (Warren, 1974).

Desegregation of the Public System and the Evolution of Special Education

After Reconstruction, one of the most hard-fought victories towards equality for African Americans came with the *Brown v. Board of Education* (1954) decision, which declared segregation of public schools unconstitutional and struck down the precedent set by *Plessy v. Ferguson* (1896). Although, school integration was harshly contested by some, integration of the public school system was a defining moment in African American history and American history that eventually led to the integration of the society. The wheels of progress moved slowly towards desegregating the school system and other public institutions, which incited civil unrest among African Americans and culminated in the Civil Rights Movement (Bickel, 1998). As schools were forced to integrate, African Americans were met with violence and gross indignities (Gardner & Miranda, 2001), their schools were closed and many African American teachers were left unemployed (Ethridge, 1979), some students were refused enrollment in public schools for extended periods of times (Ferri and Connor, 2005), and upon entering predominantly White schools, were placed in "special classes" for students with mental retardation at an exponential rate (Dunn, 1968).

In response to the Civil Rights Movement, the Civil Rights Act of 1964, the most comprehensive anti-segregation law since Reconstruction, was passed (Bickel, 1998). Title IV of the Civil Rights Act of 1964 not only enforced desegregation of public places including the public school system, it provided federal protection and funding against discrimination and segregation (Bickel, 1998). Civil rights activists relied upon this law along with *Brown v. Board* (1954) and the 14th Constitutional amendment to fight against the segregation and resegregation that continued to be observed in the public school

system. Past acts of blatant racial discrimination had been replaced with more subtle forms of institutionalized or symbolic discrimination, such as housing discrimination and employment discrimination (Orfield & Lee, 2005a; Sears & Henry, 2003; Ware, 2005). While these mechanisms were used for resegregation within the community, resegregation within the school building was accomplished by such methods as ability tracking and enrollment in segregated special classes (Ferri & Connor, 2005).

Across ethnic groups, students with actual disabilities also experienced discrimination and found themselves excluded from general education. In the 1970s, Congress estimated that millions of American children with disabilities were being denied an appropriate education (Losen & Orfield, 2005). Largely due to the many litigations brought against the public school system by civil rights activists, parenting groups, and social organizations, federally-sponsored programs were initiated that aimed to encourage better education for students with disabilities and underprivileged children (Yell, Rogers, & Lodge-Rodgers, 1998; Office of Special Education Programs, 2003). For students with disabilities, these initiatives eventually culminated in the Education for the Handicapped Act (EHA) or Public Law 94-142 (1975).

EHA ensured that all students with disabilities received a free and appropriate public education (FAPE) and it provided funding to assist local education agencies (LEA) with the implementation and cost of special education (Arnold & Lassmann, 2003; Council for Exceptional Children, 2003; Martin, Martin, & Terman, 1996). EHA, and its subsequent revisions, which renamed the law “Individuals with Disabilities Education Act (IDEA)”, provided several protections to children with disabilities to ensure access to public education. EHA also included procedural safeguards for identification, evaluation,

and placement of children with disabilities to help decrease inappropriate placement of minority students in special education (Gardner & Miranda, 2001; NRC, 1982).

With the mandate of special education legislation and the federal funding that accompanied it, two important events occurred: (1) millions of children with disabilities were guaranteed the opportunity to receive a free and appropriate public education (FAPE) (Office of Special Education Programs, 2003) and (2) a disproportionately large percentage of minority children were classified as having mild disabilities and educated separately from their nondisabled peers (Ferri & Connor, 2005; National Research Council [NRC], 1982). Although not its intent, segregation *de facto* was strengthened through special education policy (Ferri & Connor, 2005b; Green, Mcintosh, Cook-Morales, & Robinson-Zanartu, 2005; Harry & Anderson, 1994; Kunjufu, 2005). Even after federal laws were passed that guaranteed access to public education for students with disabilities and minority students (i.e., Section 504, EHA and Civil Rights Act of 1964), discrimination against these groups continued (Losen & Orfield, 2002).

Overrepresentation of Minorities in the Special Education System

Mild disabilities or high incidence disabilities include mental retardation (MR), speech/language impairment (SLI), emotional disturbance (ED), and learning disability (LD). Oftentimes, these disabilities do not have a known biological basis and diagnosis is heavily subjective and contextual (MacMillan & Reschly, 1998). Special education programs are overwhelmingly populated by students with these types of disabilities (Arnold & Lassmann, 2003; Heward, 2003; Mascari & Forgnone, 1982; Schulte, Osborne, & Erchul, 1998). Nationwide, 85% of all students served through special education are identified as falling within the mild disability categories, with a

disproportionate percentage from culturally-diverse backgrounds (U.S. Dept of Education, Office of Special Education and Rehabilitative Services, & Office of Special Education Programs, 2004).

Disproportionality or overrepresentation can be conceptualized as representation of certain groups of students at proportions significantly greater than their proportion in the general population (Gravois & Rosenfield, 2006). Disproportionality is also defined as the "extent to which membership in a given ethnic group affects the probability of being placed in a special education disability category" (Oswald, Coutinho, Best, & Singh, 1999, p.198). Since the 1970's, the Office of Civil Rights (OCR) has documented evidence of persistent minority overrepresentation in certain disability categories (Losen & Orfield, 2002). Early efforts were focused on the disparities of placement in MR programs. Losen and Orfield (2002) indicated that at the time national surveys revealed that the difference between the proportion of African American students and White students identified as having MR was substantial.

By 1980, it was observed that the disproportionate representation of minority students labeled MR had been reduced; yet African American students still remained disproportionately represented in the MR population (Artiles & Trent, 1994). However, the representation of minority students labeled learning disabled (LD) had significantly increased (Argulewicz, 1983). Current information reported in *The 27th Annual Report to Congress on the Implementation of the Individuals with Disabilities Act* (2005) continues to show that American Indians/Alaskan Natives and African Americans are most likely to receive special education services. The report also indicates that African Americans are

most likely to be labeled MR or ED and students with MR labels are least likely to be educated in regular classes for most of the day (US Department of Education, 2005).

The Problem of Inappropriate Placement in Special Education

Special education placement is not a concern for all students. In fact, it has been described as more effective for children with moderate to severe disabilities, though research available on the outcomes of special education services is "inconclusive" at best (Arnold & Lassmann, 2003; Artiles & Trent, 1994). Similarly, disproportionality is not a concern across all special education programs. It has not been found in the low incidence disabilities such as visual impairments, hearing impairments, autism, and orthopedic impairment, which tend to have identifiable causes and accompanying physical abnormalities (Arnold & Lassmann, 2003; MacMillan & Reschly, 1998; National Research Council, 2002; Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung, 2005). Most concern about special education placement and disproportionality is for students with mild disabilities because it is associated with disadvantageous outcomes for this population (Arnold & Lassmann, 2003).

Patton (1998) indicated that, "…disproportionately large numbers of African American youth are being persistently diagnosed as disabled and placed in special education programs [which] constitutes a problem-for many of these students are inappropriately placed" (p.25). It is important to address this problem of inappropriate special education placement of minorities because of the social, psychological, and economic ramifications it may have for African Americans (Artiles, Harry, Reschly, & Chinn, 2002). Harry and Anderson (1995) argued that the special education process actually diminished the likelihood of positive outcomes for African American students.

Special education provided in a more restrictive environment is often a significant change in educational programming, which can lead to lower student achievement (Luster & Durrett, 2003). Special education placements have also been linked to higher percentages of high school dropouts, juvenile adjudication, and unemployment (Murray, 2003).

Addressing the Problem of Disproportionate Representation of Minorities in Special Education

Although the cause of disproportionate special education placement has been linked by some to the purposeful resegregation of the public school system (Connor & Ferri, 2005; Ferri & Connor, 2005; Kunjufu, 2005; Losen & Orfield), other variables have also been linked to the problem. Early on, concerns about ambiguous special education eligibility criteria (Argulewicz, 1983; Mercer, 1972; Salend, Garrick-Duhaney, & Montgomery, 2002) and the inadequate reliability and validity of assessment tools received much attention in the literature (Mercer, 1972). In 1982, a study by the National Research Council identified causes of disproportionality in the mild MR program as falling into the following areas: (a) special education policy and procedures, (b) student characteristics, (c) quality of instruction, (d) bias in assessment process, (e) family background and SES, and (f) effects of socio-political inequity of minorities within a dominant majority culture (National Research Council, 1982). The current literature continues to link these variables to disproportionality (Artiles & Trent, 1994; Harry & Anderson, 1994; NRC, 2002); however, the research investigating the causes of overrepresentation remains inconclusive and does not enable the identification of causal relationships.

The special education process is complicated, expensive, and time consuming; therefore, it is important to focus efforts on reducing referrals to special education (Rathvon, 1999). The literature does contain many recommendations to decrease referrals to special education and increase positive outcomes for students (Arnold & Lassman, 2003; Artiles, Harry, Reschly, & Chinn, 2002; Chamberlain, 2005; Gardner & Miranda, 2001; Green, 2005; NABSE & ILLIAD Project, 2002; Patton, 1998; Zhang & Katsiyannis, 2002). The solutions that have been offered are myriad and diverse, ranging from obtaining parent and community involvement (Gardner & Miranda, 2001) to reforming the public school system to include culturally-relevant pedagogy and culturally-responsive practices (Green 2005; Webb-Johnson, 2002). However, early intervention initiatives that prevent children from ever being referred for special education have been frequently recommended and implemented as a means to address the disproportionality problem (Cartledge, 2005; Fuchs Garcia & Ortiz, 2004; Graden, Casey, & Christenson, 1985; Green, 2005; Kovaleski, 1999; NRC, 2002; Zhang & Katsiyannis, 2002).

Implementing effective prereferral interventions has been shown to reduce referral rates for special education (e.g., disproportionality) through increasing student achievement and prosocial behaviors (Gravois & Rosenfield, 2006; Gutkin, Henning-Stout, & Piersal, 1988; NABSE & ILLIAD Project, 2002). The prereferral intervention process involves collaboration between teachers and educational specialists to design and implement effective educational programs in general education settings for children who are at-risk for academic or behavioral difficulties (Fuchs & Fuchs, 1989; Graden et al.,

1985; Truscott, Sams, Sanborn, Frank, 2005). Some type of prereferral intervention process is mandated or strongly recommended in most states (Truscott et al., 2005).

Frequently, a collaborative problem-solving team is implemented, which is "supposed to function as a body that rigorously and objectively conceptualizes the student's functioning and problem solves to formulate classroom-based interventions" (Knotek, 2003, p.2). These teams are also called teacher assistance teams (Chalfant, Van Pysh, & Moultrie, 1979), intervention assistance teams (Graden 1989), instructional consultation teams (Gravois & Rosenfield, 2006), teacher support teams, student assistance teams, student support teams, and mainstream assistance teams (Fuchs, Fuchs, & Bahr, 1990). Although there are differing models of PIT implementation, most teams operate within the problem-solving process (Buck, Polloway, Smith-Thomas, & Cook, 2003; Kovaleski, 2002; Weishaar, Weisharr, & Budt, 2002). The components of the problem-solving process include problem identification, direct measurement of behavior, implementation of interventions, monitoring progress and evaluating outcomes, with certain components reported as more influential than others on student outcomes (Iverson, 1999). Flugum and Reschly (1994) described the presence of these components as indicators of quality PIT implementation (Flugum & Reschly, 1994; Reschly & Ysseldyke, 2002).

Although these teams are frequently recommended and implemented (Burns & Symington, 2002), barriers to quality PIT functioning are prevalent in the public school setting. Inappropriate knowledge or implementation of group process skills (Iverson, 2002; Kovaleski, 2002), lack of funding (Ross, 1995), time constraints (Kovaleski, 2002), lack of needed training (Kovaleski, 2002), and even bias (Knotek, 2003) have been

identified in the literature as barriers to effective PITs. Because of the common occurrences of these barriers, it is important to assess the quality of PITs to determine if teams are functioning as intended and resulting in positive outcomes for students. The current study aims to examine PIT functioning in relation to reducing the likelihood of African Americans being referred to special education.

Purpose of the Study

The purpose of this study is to investigate the impact of PITs on disproportionality and the special education process in one suburban district that was identified as serving disproportionate numbers of African American students in the MR category. In this school district, students who were having difficulty being successful in general education were referred to PITs. The PITs were responsible for designing effective interventions aimed at the area(s) of difficulty. If the interventions failed to produce observable student improvement, the teams requested an initial psychoeducational evaluation to help create and implement more sophisticated interventions. If those interventions were unsuccessful as well, a referral to special education followed. Further evaluation was conducted and a placement conference was held to determine if the student was eligible for special education services. For the purposes of the current study, the special education process was conceptualized as having four key phases, including (a) referral to PITs, (b) referral for initial evaluation, (c) special education referral, and (d) special education placement.

First, the impact of PITs on disproportionality was examined through the calculation of risk ratios, by ethnicity, at each phase of the special education process. Although some research supports the implementation of PITs for reducing referrals of

minorities for special education services (see previous citations), it is hypothesized that for minority students disproportionate representation would be observed at all phases of the special education process.

Next, the impact of PITs on the special education process was examined by exploring the relationship between ethnicity, initial referrals, and PIT implementation. This was accomplished by assessing 300 PIT records for fidelity to the problem-solving model (Telzrow, McNamara, and Hollinger, 2000) to determine if there were differences in PIT implementation. The PIT implementation experienced by African American students was compared with the PIT implementation experienced by White students. Also, the PIT implementation experienced by students who received initial evaluations was compared with the PIT implementation experienced by those that did not receive evaluations. Separate 2 x 2 ANOVAs were calculated with ethnicity (African American or White) and initial referral status (received initial evaluation or did not receive an initial evaluation) as independent factors and the components of the problem-solving process as dependent variables (i.e. behavioral definition of the target behavior, baseline data, clearly identified goal or target behavior for student, hypothesized reason for the problem, systematic step-by-step intervention plan, treatment integrity, data indicating response to intervention, direct comparison of postintervention performance with baseline data).

The impact of PITs on the special education process was also examined by exploring the relationship between ethnicity, special education referrals, and PIT implementation. In addition to examining differences between ethnic groups, the 300 PIT records were also examined to determine if there were differences in PIT implementation

between students who were referred for special education and those that were not referred for special education. Separate 2 x 2 ANOVAs were calculated with ethnicity (African American or White) and special education referral status (referred for special education or not referred for special education) as independent factors and the components of the problem-solving process as dependent variables (i.e. behavioral definition of the target behavior, baseline data, clearly identified goal or target behavior for student, hypothesized reason for the problem, systematic step-by-step intervention plan, treatment integrity, data indicating response to intervention, direct comparison of postintervention performance with baseline data).

Since effective PIT functioning has been related to decreasing special education referrals (see previous citations), it is hypothesized that differences in PIT implementation will be observed between students who progress toward special education placement (i.e., receiving initial evaluations and receiving referrals for special education) and those that do not (i.e., not receiving initial evaluations and not referred for special education). Also, research indicates that the PIT process can be influenced by bias (Knotek, 2003). It is hypothesized that differences will be observed between the PIT implementation experienced by African American and Whites because this district has a history of disproportionate representation of African Americans in MR. Table 1 includes the research questions, types of data, and data analyses that will be employed in the current study.

Table 1

Research Questions and Data Analyses

Question 1	What were the risk ratios for students by ethnic/racial group for (a) referral to PITs, (b) referral for initial evaluation, (c) special education referral, and (d) special education placement?
Data Type	Enrollment and Ethnicity counts
Analysis	Risk Ratios Analyses
Question 2	What was the relationship between student ethnicity, initial evaluations, and PIT implementation?
Data Type	Component ratings on Likert Scale and ethnicity and initial evaluation count
Analysis	Descriptive Analyses and 2X2 ANOVAs
Question 3	What was the relationship between student ethnicity, special education referrals, and PIT implementation?
Data Type	Component ratings on Likert Scale and ethnicity and special education count
Analysis	Descriptive Analyses and 2X2 ANOVAs

Importance of Study

The goal of this research is to provide information about ways to evaluate programs and policies designed to decrease inappropriate referrals to special education. This type of research is timely and significant for four reasons: (a) many researchers have

suggested the importance of school districts establishing and maintaining a systematic approach to monitoring and decreasing the ethnic/racial composition of their special education programs (Brady, Manni, & Winikur, 1983; Coutinho & Oswald, 2000; Hosp & Reschly, 2002); (b) PITs are widely implemented as a means of diminishing academic and behavioral difficulties that can lead to school failure; (c) with the reauthorization of IDEA (2004), PITs have a cardinal role in special education eligibility, and (d) it will add to the current debate in the literature about the role of ethnic/cultural bias in education.

The current study extends the available literature in several ways. First, this study examines key phases of special education placement beginning with the pre-referral intervention process. Secondly, the current study focuses on local processes and policies at the district-level, which has been noticeably missing from the disproportionality discourse (Hosp & Reschly, 2004). Next, it provides information on field-based PITs, their impact on disproportionality, and their readiness to assume a problem solving approach (Burns, Vanderwood, & Ruby, 2005). The current study also extends the literature by examining the relationship between indicators of effective PITs and the special education process. Because of its examination of ethnicity and PIT implementation, it also extends the literature on whether biased processes affect PIT functioning, as suggested by Knotek (2003). Lastly, it provides information about students at-risk for special education placement, not just those already placed in special education as in previous studies (e.g., Flugum & Reschly, 1994; Gravois & Rosenfield, 2006).

Additionally, the importance of African Americans becoming producers of knowledge and partners in the discourse, offering their emic perspectives of the

disproportionality problem, has been emphasized in the literature (Artiles, 1998; Patton, 1998). The author, who is from a culturally diverse background, is able to provide a perspective on the disproportionality problem that is less represented in the available literature on this topic.

Need of the Study

Previous research has provided long-standing, empirical support for the magnitude of the disproportionality problem (Artiles, Harry, Reschly, & Chinn, 2002; Cahalane, 1996; Colarusso, Keel, & Dangel, 2001; Coutinho & Oswald, 2000; Dunn, 1968; Hosp & Reschly, 2003; Oswald, Coutinho, Best, & Singh, 1999; Zhang & Katsiyannis, 2002). One criticism of much of the disproportionality literature is that most is limited to examining disproportionality in special education placement, which is the final stage of the special education process. Limited empirical research is available examining precursors to the special education process to determine where disproportionality begins (Gibb, Rausch, & Skiba, 2006; Gordon, 1980; Hosp & Reschly, 2003; Mercer, 1972).

A considerable amount of literature has been published about the impact of prereferral interventions on special education, and thus disproportionality (e.g., Chalfant, Pysh, & Moultrie, 1979; Fuchs, Fuchs, & Bahr, 1990; Graden, et al., 1985; Rosenfield & Gravois, 1996); however, the empirical research examining the impact of PITs on special education referrals is inconsistent (Burns and Symington, 2002). Although, most literature on PITs support their use, the generalizability of the results is limited because of contextual factors (e.g., university-supported, small number of teams, lack of appropriate controls; Chalfant & Pysh, 1989). Because few studies have examined the

effectiveness of field-based PITs (Truscott et al., 2005), more research is needed about their implementation and impact on systemic and student outcomes. It is imperative that PIT implementation and its impact on disproportionality are further examined to help create effective solutions to the persistent problem.

Secondly, much of the available research supports the effectiveness of PITs on reducing special education referrals (Burns & Symington, 2005; Chalfant, Pysh, & Moultrie, 1979; Fuchs, Fuchs, & Bahr, 1990; Graden, Casey, & Christenson, 1985; Rosenfield & Gravois, 1996);

Organization

This dissertation is organized in five chapters. The first chapter contains a brief overview of the history of civil rights for African Americans, disproportionality, the special education process, prereferral interventions, and an overview of the current study. Chapter II contains a comprehensive literature review on disproportionality, special education, and prereferral interventions. Chapter III clarifies the methods employed including: a description of the population, procedure, and statistical analyses. The results, found in Chapter IV, indicated that African American students in this district were significantly more likely to be represented at every phase in the special education process, including the prereferral phase. The study also found significant correlations ($p < .05$) between the "Behavioral Definition" and "Hypothesized Reason for Problem" components of PIT implementation and phases of the special education process. Lastly, the study demonstrated that PITs were implemented with poor fidelity and only the "Hypothesized Reason for Problem" component yielded statistically significant differences for records in the initial evaluation condition and the special education

condition. Chapter V discusses the implications of the findings, limitations of the study, and recommendations for future research in the area of disproportionality and PIT implementation.

CHAPTER 2

REVIEW OF LITERATURE

Since the integration of the Public School System, the overrepresentation of minority students in special education has been a serious concern among policymakers and educators (Knotek, 2003). The problem of overrepresentation involves mislabeling students as "disabled", which can result in adverse consequences that have far-reaching effects. Consequences such as restrictive educational placements and less challenging curriculum may impact long-term educational opportunities and employment. This long-standing, systemic problem has had a disproportionate impact on African American children (Patton, 1998). The overrepresentation issue was initially revealed in the literature in the late 1960s (Dunn, 1968). Some researchers have indicated that the origins of overrepresentation in special education were directly tied to the forced integration of public schools and the systematic exclusion of African Americans from predominantly White schools (Connor & Ferri, 2005; Eitle, 2002; Kunjufu, 2005; Losen & Orfield, 2002). The purpose of this chapter is to review the literature regarding the history, prevalence, and consequences of overrepresentation of minorities in special education. It shall conclude with solutions to this problem and current questions still unanswered in the literature.

Brief History of Segregation of African Americans in the United States

The ancestry of African Americans is found in the Atlantic slave trade that lasted between the sixteenth and nineteenth centuries (M'Baye, 2006). Millions of Africans were involuntarily enslaved and transported to the New World (M'Baye). After the arrival of the Africans to the New World, there was an inner turmoil brewing within the

country surrounding the morality of slavery and treatment of peoples of African descent (Woodson, 1919). One strong point of contention between countrymen was the education and cultural civilization of the slaves. In spite of laws dating back to 1740 that prohibited the education of Negroes, benevolent and religious workers, even slave owners themselves were proponents for educating the slaves. In some parts of the country, educational facilities exclusively for slaves and freedmen were established, not as a means of discrimination, but with the intention of providing the specific cultural and educational needs of this group (Woodson, 1919).

For some, their education resulted in the development of a dissonant consciousness of the injustices perpetuated through slavery and a strong desire for liberty for all of their brethren; however, for many southern slave owners, this was perceived as a problem that could have devastating economic impacts (Woodson, 1919). As a result, through legislation and social practices, there was an attempt to stifle the education of the slaves and freedmen in hopes of quelling their desire for liberty (Woodson, 1919). However, their strong desire for liberty could not be suppressed. Their voluntary participation in both the Revolutionary War (1775-1783) and American Civil War (1861-1865) was gained through promises of equality and liberty. Their participation contributed to the outcome of both wars and led to significant changes for the rights of slaves (Horton & Horton, 2001). Following the Civil War, the Emancipation Proclamation (1863) was passed granting enslaved people of African descent in the southern United States their freedom and the 13th and 14th Amendments to the Constitution were ratified, outlawing slavery and granting citizenship rights.

The protection and promise of this legislation was not fully realized (Folmsbee, 1949). For example, Warren (1974) indicated that the first report by the Department of Education, authored in 1870, showed that the practice of systematic denial of educational opportunities was still quite prevalent. Predominately African American schools were often destroyed, while those who attended and taught at such schools were constantly under threat of physical harm and even death (Woodson, 1919). In the South, "Jim Crow" laws enacted racial segregation across all facets of society. Perceived infractions against these discriminatory laws often resulted in arrest, lynching, beating, and oftentimes murder of innocent African Americans. In addition to Jim Crow legislation and ten years subsequent to the ratification of the 13th and 14th Amendments, the landmark Supreme Court decision, *Plessy v. Ferguson* (1896), upheld the edict of segregation and encouraged the continued establishment of discriminatory laws against African Americans. Although some progress had been made, the battle for equality continued on many fronts.

The Struggle for Equality

The first half of the 20th Century witnessed the participation of the United States in two global wars abroad, with the purpose of protecting freedom and liberty. However, at home the freedom of minorities, especially African Americans, went unprotected. Black soldiers fought a war on two fronts-the one abroad and the racial injustices carried out against them on the home front (Jefferson, 2003). Again, the heroic and patriotic services provided by African Americans, which assisted in victory for the Allies, were inadequately appreciated and recognized. The return of African American soldiers after the conclusion of World War II helped instigate social unrest amongst the African

American culture. Their worldly travels illuminated the callousness of the transgressions against human rights that were so prevalent in the United States at that time (Jefferson, 2003). These feelings of indignation quickly spread throughout the culture and resulted in the beginnings of the Civil Rights Movement. Challenges to Jim Crow laws were made at all levels of the judicial system by socio-political organizations such as the National Association for the Advancement of Colored People (NAACP) and the National Urban League (NUL), especially focusing on segregation in the education system (Smith & Kozleski, 2005). The consequences of their efforts lead to a historical change in the culture of the United States.

The Civil Rights Movement during the Post-Brown Era

Education remained highly regarded as the pathway to freedom and liberty (Warren, 1974). Civil rights activists and African American parents were relentless in their fight for equal educational opportunities for their children, which culminated in the historic *Brown v. Board* (1954) litigation (Green, Mcintosh, Cook-Morales, & Robinson-Zanartu, 2005). In 1954, "separate, but equal" in the public school system was struck down by the *Brown vs. Board* decision, which integrated public schools. In a precedent-setting decision, the Supreme Court overturned the decision in *Plessy v. Ferguson (1896)* establishing that segregated schools denied African American students equal protection under the law, a constitutional right guaranteed by the 14th amendment (Blanchett, Mumford, & Beachum, 2005). Although the decision rendered affected only the public school system, its consequences were far-reaching and met with vigorous resistance.

Subsequent to the *Brown v. Board* decision, segregated schools were still quite common because there were no mechanisms put in place by the Court to ensure that the

new laws would be implemented. Interesting to note is the lack of involvement by the federal government for several years after the desegregation decision was rendered (National Research Council, 1982). In fact, the integration of the public school system was not fully achieved until nearly two decades later (Blanchett, Mumford, & Beachum, 2005). As recently as the early 1980s, five of Ohio's largest urban school districts (i.e., Toledo, Cleveland, Columbus, Cincinnati, and Dayton) were embroiled in a battle with the Supreme Court, challenging the court-ordered decree of desegregation (Smith, 1983).

Following the precedent-setting decision in *Brown,* there was widespread use of questionable policies and procedures meant to prohibit minority students from enrolling in predominately White schools (Arnold & Lassmann, 2003). Once physical access to predominantly White schools had been obtained, segregation of learning environments was maintained through the use of ability grouping (Mallery & Mallery, 1999; Rogers and Oakes, 2005), policies and procedures (Ferri & Connor, 2005a), special education classes (Ferri & Connor, 2005b; Losen & Orfield, 2002), and the increased use of standardized testing. In many cases, these procedures were intentionally established means of re-segregating students by ethnicity/race or SES and limiting their exposure to equitable educational opportunities (Jordan, 2005).

History of the Public School System

Of course, this was not the first time in the history of the public school system such an effort was initiated. Artiles and Trent (1994) asserted that the creation of a compulsory education system also led to the creation of special programs aimed at segregating White students from "low-status" groups (e.g., ethnic groups, poor). Shortly after compulsory elementary education was implemented, the Child Study Movement and

the Child Welfare Movement resulted in a significant increase in school enrollment of large numbers of disabled, poor, and culturally diverse students (Brooks-Gunn & Johnson, 2006). In reaction to the abrupt influx of these students, the "intelligence test", introduced in the United States by Lewis Terman in 1916, was eagerly accepted by the public school systems as a method to exclude, identify, and classify children who were perceived as unsuitable for traditional public school environment (National Research Council [NRC], 1982). The introduction of the intelligence test facilitated the identification of a previously unidentified population of people with "mild mental retardation", defined as having an estimated mental age substantially below one's chronological age (NRC). Shonkoff (1982) emphatically attributes the creation of the socio-cultural concept of mild mental retardation to the implementation of compulsory education. The creation of special classes for the "mentally subnormal" was justified by the widely held belief of deficient intellectual abilities, inferiority, and social deviance of certain ethnic/racial groups (Jordan, 2005; NRC).

While the implementation of special classes preceded the utilization of the intelligence test, enrollment in such programs exponentially increased after its introduction. Twenty years after the introduction of the intelligence test in the public school setting, the enrollment of poor and immigrant students in special classes had increased nearly 600% (NRC, 1982). The special class was perceived as the best method of educating children with challenges because of the low teacher-student ratios, access to teachers with specialized training, focus on social and vocational skills, and individualized instruction (Kavale & Forness, 2000). Special classes and special schools

eventually evolved into a separate educational system-Special Education (Semmel, Gerber, & MacMillan, 1994).

The Establishment of the Special Education System

In addition to culturally diverse students, students with physical, intellectual, or psychological disabilities were also frequently denied access to public education and therefore, denied the privileges of their Constitutional rights (Shealey, Lue, Brooks, & McCray, 2005). Students with disabilities were oftentimes overtly excluded from the public school system, isolated within the school building, or placed in completely separate facilities (Losen & Orfield, 2002). The ramifications of the *Brown v. Board (1954)* decision also gave impetus to parents and advocates of students with disabilities to challenge the discriminatory treatment these students were receiving in the public school system (Smith & Kozleski, 2005). A number of precedent-setting court cases were deliberated during the 1970s in response to the students' allegations of infringements on their 14th Amendment rights. In one of the most well-known litigations filed on behalf of students with disabilities, plaintiffs in *Pennsylvania Association for Retarded Citizens [PARC] v. Pennsylvania (1971)* accused the Pennsylvania public school system of infringing upon the 14th amendment rights of students with disabilities by excluding them from the school system. The case was filed on behalf of disabled individuals to ensure that they would attain a "free public education regardless of handicap or financial resources of the school" (NRC, 1982, p. 36). The ruling of the district court continued to support inclusion for all students in the public school system, initially established by the *Brown v. Board* decision.

In another influential lawsuit challenging the treatment of students with disabilities, *Mills v. the Board of Education of the District of Columbia (1972),* the district court ruled that the segregated education that students with disabilities received was a means of exclusion from the public school system. The rulings of these cases established that adequate educational opportunity must be provided to all students equally, regardless of race, disability, or cost (NRC, 1982; Smith, Mathews, Hehir, & Palfrey, 2001).

Although federally-sponsored policies and procedures had been established as early as 1957 related to improving programs and services for children with disabilities (NRC, 1982), during the 1970s Congress estimated that nearly 2 million children with disabilities were not being appropriately educated (Blanchett et al., 2005; NRC, 1982). Congress eventually passed two pieces of historic legislation that provided protection, funding, and policy for citizens with disabilities. The Rehabilitation Act of 1973 and the Education for All Handicapped Children Act of 1975 (PL 94-142) extended certain rights and protection for citizens with disabilities (National Research Council, 1982). The Rehabilitation Act provided protection from discrimination against citizens with disabilities in any programs receiving federal funding. PL 94-142, which was eventually renamed the Individuals with Disabilities Education Act (IDEA), provided a free and appropriate education in the least restrictive environment (Ferri & Connor, 2005b, p. 454). However, the establishment of PL 94-142 did not represent the end of difficulties experienced by students with disabilities.

Disproportionate Representation in Special Education: The History of the Intersection of Race and Disability

In 1968, Lloyd Dunn exposed the deplorable reality of many poor and African American children within New York's public school system (Arnold & Lassmann, 2003; Artiles, Harry, Reschly, & Chinn, 2002; Blanchett, Mumford, & Beachum, 2005; Hosp & Reschly, 2003; MacMillan & Reschly, 1998). He reported that African American children were being placed in EMR classes at an alarming rate. Dunn (1968) estimated that 60% to 80% of the students enrolled in these classes were minority or low SES students (Dunn; MacMillan & Reschly, 1998). African Americans who had not previously been identified as "disabled" were labeled and excluded from rigorous curricula and separated from their "nondisabled" White peers (Ferri & Connor, 2005b; Hosp & Reschly). White students were surprisingly underrepresented in these classes, even when their cognitive disabilities were accompanied by physical abnormalities (Mercer, 1972). On the West Coast, Jane Mercer reported a similar phenomenon for Hispanic and Black children in California (Blanchett, Mumford, & Beachum, 2005; Hosp & Reschly, 2003). Hispanic and African American children were 2 to 4 times more likely than White children to be labeled as MR and placed in segregated classes (Mercer, 1973; Smith, 1983).

The purposeful resegregation being implemented within the schools was eloquently described by Ferri and Connor (2005a): "ironically, history illustrates that at the very moment when difference is on the verge of being integrated or included, new forms of containment emerge to maintain the status quo" (p.97). It is believed by some that within this environment of exclusion, the intentions and purpose of the special

education system were exploited and used as means of resegregation (Connor & Ferri, 2005; Dunn, 1968; Ferri & Connor, 2005a; Kunjufu, 2005).

Civil rights activists became concerned with the overrepresentation of minority students in "special" programs and the ensuing segregation of these students from their White peers (NRC, 1982). One of the earliest litigations was *Diana v. State Board of Education* (1970). In California, Mexican American children, whose primary language was Spanish, were placed in classes for the educable mentally retarded (EMR) with the use of standardized intelligence tests that were normed on White students and administered in English. The court found this type of assessment biased and required the use of more culturally-appropriate assessment measures (de la Cruz, 1996).

In the *Larry P. v. Riles* (1972) ruling, the placement of African American students in EMR programs using standardized intelligence tests was deemed discriminatory. As a result, schools in California were banned from using intelligence tests to place African American students in EMR classes and required to reassess those remaining in such classes, as well as eliminate overrepresentation of minorities in their programs (Coutinho & Oswald, 2000; de la Cruz, 1996; Ferri & Connor, 2005a). *Lora v. Board of Education of the City of New York* (1977) was brought to court on behalf of minority students placed in segregated classes for the emotionally disturbed. Court findings supported previous renderings-culturally and linguistically diverse students with disabilities must be educated along with nondisabled peers to the greatest extent appropriate (de la Cruz, 1996; Harry & Anderson, 1994). As a result of the overidentification of minority groups in certain disability categories, much attention was given to special education policy and procedures.

Despite efforts to improve the quality of general and special education, minority students continue to be overrepresented in special education. In 2003, African Americans and American Indians were more likely to receive special education services than all other ethnic groups combined under IDEA, Part B (U.S. Department of Education et al., 2005). According to the U.S. Department of Education et al. report, in 2003 African Americans were 3 times more likely to receive special educations services in the MR program and 2.3 times more likely to receive special education services in the ED program.

Concerns about Special Education Placement

Many of the concerns about the special education system are directly related to problems in the general education system, especially for urban schools (Blanchett et al., 2005). According to Blanchett et al. (2005), schools attended primarily by African American and Hispanic students are more likely to be identified as a "failing school" by the No Child Left Behind Act of 2001. Because of insufficient funding and socio-political influences, these schools tend to be characterized by limited school-level resources resulting in restricted staffing, poor quality staff members, and deficient working conditions (Artiles et al., 2002; Blanchett et al., 2005). The low quality instruction received by many culturally diverse students is due in part to the shortage of highly-qualified teachers, especially in urban areas (Shealey, Lue, Brooks, & McCray, 2005; Shulte et al., 1998). Harry and Anderson (1994) reported that these students are often taught by paraprofessionals or substitute teachers and given a less rigorous curriculum. Another reason that teachers may not be well-equipped at providing effective instruction to diverse learners is because many teacher training programs do not require cross-

cultural training and do not provide explicit instruction of culturally responsive pedagogy (Chamberlain, 2005; Coutinho & Oswald, 2000; Webb-Johnson, 2002). As a result of the problems within general education, Losen and Orfield (2002) indicate that culturally and linguistically diverse students are at risk for receiving inequitable resources and having poor outcomes. Such differential educational environments may result in minority students being over-referred for special education and lacking the knowledge and skills needed for success in adulthood (Cartledge, 2005).

Overrepresentation in special education is a problem when students are misdiagnosed with labels of disability (Meyer & Patton, 2001), have segregated learning environments resulting in unequal educational opportunities (Harry & Anderson, 1994; Losen & Orfield, 2002; Patton, 1998; Schulte, Osborne, Erchul, 1998), and are not exposed to the curriculum that will enable them to become productive members of society (Andrews et al., 2000).

When students are diagnosed (or misdiagnosed) with a disability, they may be impacted by the negative stigma associated with having a disability or special education services. Similar to the negative stigma associated with many other marginalized groups, being identified as “disabled” can carry shame and disrespect for students and caregivers (Artiles et al., 2002; Dunn, 1968; Macmillan & Reschly, 1998; Mercer, 1972; Patton, 1998). Dunn (1968) described special education labels, such as MR and ED, as damaging to social status and self-esteem. Mercer (1972) reported that African American students enrolled in special education classes were embarrassed and ashamed of their special education placements, which is arguably the case today. Kavale and Forness (2000)

indicated that students with disabilities viewed special education as undesirable due to the negative stigma that is associated with the program.

One of the most harmful results of the negative stigma associated with special education is its impact on a child's developing self-esteem (Artiles & Trent, 1994; Zionts, Zionts, Harrison, & Bellinger, 2003; Sabornie, 1994). Some children enrolled in special education programs may be more at-risk for development of low self-esteem, especially if they perceive overt and covert negative feedback about their cultural identities from association with the special education program. African American students are already at-risk for entering school with low self-esteem, which can inhibit academic success and ultimately lead to special education placement (Kearns, Ford, & Linney, 2005). Special education can exacerbate these feelings. These students develop a sense of hopelessness, which is reified by their interactions with school personnel and other at-risk minority youth. Altogether, such children are at substantial risk for academic failure (Gardner & Miranda, 2002; Harry & Anderson, 1994).

Special education labels can affect expectations and perceptions of students by adults and peers. Negative perceptions can result in alienation, low expectations, and the overemphasis of stereotypes (Ho, 2004). For most children, the school environment is significantly influential on their psychosocial development. Meyer and Patton (2001) described the development of an academic identity as a necessary condition for learning to flourish. The results of negative perceptions about some children may impede the development of this identity which may in turn impede academic development.

Poor Instruction and Services Leading To Poor Outcomes

Another concern with the special education system has been the quality of instruction and services provided to students with disabilities (Arnold & Lassman, 2003; Cartledge, 2005; Losen & Orfield, 2002). Early on, Dunn (1968) claimed that special classes for students with mild MR and emotional disabilities lacked efficacy and therefore should be abolished. Mascari and Forgnone (1982) found that students who had been receiving special education services for approximately two years were unsuccessful in the general education environment after being dismissed from the program. The authors concluded that their results could be interpreted as an indication of the ineffectiveness of special education, possibly due to the over utilization of mainstreaming, or an indication of the incapability of the general education system in educating children with learning difficulties. However, current research results are inconclusive on the efficacy of special education programs (Blanchett, Mumford, & Beachum, 2005; Schulte et al., 1998).

The poor outcomes of certain groups of students with mild disabilities enrolled in special education encourage the perceptions of ineffectiveness (Cartledge, 2005; Dunn, 1968; Ferri & Connor, 2005b; Macmillan & Reschly, 1998; Meyer & Patton, 2001). Cartledge (2005) proclaimed that if special education programming was effective, students enrolled in these programs would eventually return to general education; however, for the vast majority of these students, returning to general education is unlikely (Harry & Anderson, 994; Mercer, 1972; Meyer & Patton, 2001). The 1993 OSEP report showed that only 6% of children 14 and older returned to general education programs (Harry & Anderson, 1994). In addition, the high school completion rate is substantially

lower for students with disabilities. Only 27% of "disabled" students ever reach high school graduation, compared to 75% of their nondisabled peers (Ferri & Connor, 2005b). The unemployment rate for high school graduates with disabilities is 40% higher than that for high school graduates without disabilities (Shealey et al., 2006). Based on the outcomes of these students, it appears that the resources and services provided by special education are not fulfilling the purpose of education.

Blanchett (2006) argued that special education is differentially effective for certain groups of students. White students do not appear to be as at-risk for poor instruction and poor outcomes as culturally diverse students. She argues that White privilege and racism result in White students being more fully included in general education, unlikely to be segregated from their nondisabled peers, and more likely to graduate from high school and go on to pursue postsecondary education.

A substantial percentage of African American students identified as disabled does not return to general education (Meyers & Patton, 2001) and does not obtain a high school diploma (Harry & Anderson, 1994). Two years after the completion of high school, 75% of "disabled" African American students are unemployed, compared with only 47% of "disabled" White students (Green, Mcintosh, Cook-Morales, & Robinson-Zanartu, 2005). Even between high school graduates without disabilities, the national unemployment rate for African Americans on average is nearly twice that of Whites (Herrnstein & Murray, 1994; Malveaux, 2004). For both disabled and nondisabled minority students, socio-cultural and socio-political factors influence their ability to obtain employment and become productive members of society.

Separate Educational Environment

The LRE clause of IDEA provides that students with disabilities are educated with their nondisabled peers as much as appropriate. However, minority students tend to be excluded from the general education environment more frequently than White students (Green, 2005). White students with disabilities were more likely than students of any other race/ethnicity to spend 80 percent or more of their day in a general classroom, while African American students with disabilities were more likely than students of any other race/ethnicity to spend less than 40 percent of their day in a general classroom (U.S. Department of Education, Office of Special Education and Rehabilitative Services, and Office of Special Education Programs, 2005). Also, African American students were the most likely to be educated in separate school facilities.

The results of a literature review by Zigmond (2003) "provides no compelling research evidence that place is a critical factor in the academic or social progress of students with mild/moderate disabilities" (p.195); however, other authors have developed persuasive arguments to the contrary (Ferri & Connor, 2005b; Kunjufu, 2006; Losen & Orfield, 2002). The relegation of minority students to self-contained classrooms may lead not only to the development of psycho-social difficulties (i.e., poor self-esteem), but also to disparate educational environments due to their limited exposure to the general education curriculum (Losen & Orfield, 2002). The benefit of such placement is questionable, since separated placements do not improve academic or social skills (Schulte et al., 1998). Harry and Anderson (1994) indicated that the more segregated the placement, the more unrealistic and inappropriate instruction is likely to be. Patton (1998)

also suggested that segregated education placements generally represent separate and unequal educational tracks that deny students access to general education.

Cartledge (2005) found that in California, African Americans are more likely than Whites to receive the most restrictive placements along the special education continuum. In contrast, Hosp and Reschly (2002) examined restrictiveness of placement for African Americans and Caucasian students and found that the process for making placement decisions were similar for African Americans and Caucasians, reflecting no observable bias in the process. In fact, this study indicated that African Americans with larger discrepancies between instructional level and grade level spent less time outside the general education classroom than Caucasians with similar discrepancies.

Causes of Overrepresentation in Special Education

Causes of overrepresentation in special education that have been frequently identified in the literature include: (a) bias in referral to placement process (Arnold & Lassman, 2003; Blanchett, 2006; Harry, Klingner, Sturges, & Moore, 2002; Knotek, 2003; Meyer & Patton, 2001), (b) poor instruction (Artiles et al., 2002; Harry & Anderson, 1994; Losen & Orfield, 2002; Schulte et al., 1998), (c) poverty, (d) and invalid and unreliable policies and procedures (Arnold & Lassman, 2003; Artiles et al., 2002; Harry & Anderson, 1994). The prevalence of these factors raises questions about the validity and effectiveness of the special education program.

Special Education Policies and Procedures

PL 94-142, and its subsequent amendments, did not require that states implement the federal definitions for disability classifications, resulting in wide variations in the disability category names, definitions, and classification criteria (NRC, 2002; Arnold &

Lassman, 2003). Changes in school districts or geographic locations often lead to changes in mild disability classification because of the subjectivity in special education definitions and eligibility criteria (Harry & Anderson, 1994). In addition, certain mild disabilities were associated with specific ethnic groups. This tendency seemed especially true for the MR, ED, and LD categories.

Before the conceptualization of "Learning Disability" (i.e., SLD) came into existence during the 1960s (Connor & Ferri, 2005; National Research Council, 2002), most children receiving special services were labeled MR. However, after its inception the label was seemingly reserved for use by White, middle class students because racially diverse students with similar levels of academic achievement were excluded from this category and given other labels (Ferri & Connor, 2005b). Children identified as SLD were privileged to a much less stigmatizing label, spent far more time in the regular education environment, and had access to educational supports without being placed in special education classes, unlike students identified as MR or ED (Parrish, 2002; Sleeter, 1987).

Although the racial composition of the LD category is more diverse now (U.S. Department of Education et al., 2005), ED and MR continue to be associated with culturally diverse students, especially African Americans. The implementation of special education policies, procedures, and criteria continue to come under scrutiny for their lack of reliability and validity. An example of this can be seen in the eligibility definition of MR. Although, PL 94-142 established the definition of mental retardation to include intellectual functioning scores of 70 or below and deficits in adaptive behavior and school achievement, state special education eligibility definitions included maximum

intellectual functioning scores ranging from 69 to 80 and varied significantly on what constituted deficits in adaptive behavior and academic achievement (NRC, 1982, 2002). State definitions continue to vary, especially on criteria for deficits on adaptive behavior and academic functioning (NRC, 2002)

During the early 1980s, five of Ohio's largest urban school districts were accused by OCR of improper implementation of PL 94-142. Eligibility for Ohio's mild MR program was defined as "children incapable of profiting from regular class assignments without assistance because of retarded intellectual development in mastering skills necessary to advance beyond a minimal level of education" (Smith, 1983, p. 208). The ambiguity in this definition led to the overrepresentation of African Americans in the mild MR category across the state. OCR accused the school districts of violating the civil rights of students through intentionally maintaining segregated schools. The findings of the investigation showed that culturally diverse students were unjustifiably being placed in certain special education classes (Smith). In addition, Brady et al. (1983) indicated that in California investigators found that the MR evaluation criteria, as specified by law, were not being implemented properly.

Another example of the inconsistency in the implementation of special education policy is seen in the findings of Mascari and Forgnone (1982). The researchers conducted a study examining a group of EMR students who had been dismissed from special education four years prior to the study due to court litigations, changes in the conceptualization and definition of MR, and the implementation of PL 94-142. The majority of the dismissed students were re-referred because they were unsuccessful in general education. Most of the re-referred students were re-certified for special education

with a SLD disability label. The reliability and validity of special education practices and policies are questionable because of the inconsistencies in “disability” labeling. This trend was observed quite frequently throughout the country.

Another category that received much attention for its questionable eligibility criteria was ED. The federal ED definition found in the original law remains unchanged today. Phrases such as “over a long period of time and to a marked degree” (NRC, 2002, p. 241) used to describe the consistency and severity of behaviors lack specificity and engender highly subjective interpretation of this policy (NRC). Shortly after the inception of P.L. 94-142, state definitions were examined to determine the degree of consistency found between their definitions of SED and federal guidelines. The study concluded there were many inconsistencies between state definitions and federal guidelines. Mack (1980) found that only 35 states had included the federal definition requirement of "over a long period of time and to a marked degree", only 40 states had included the federal definition requirement that the “child's condition must adversely affect educational performance”, only 10 states specified the inclusion of autism or schizophrenia in their definition, and there was no mention of the exclusion of socially maladjusted children by over two thirds of the states. This information illustrates why the reliability and validity of classification systems are frequently questioned.

Bias in the Special Education Process

One of the most frequently indicated causes of overrepresentation in special education is related to the validity and reliability of decisions made throughout the process. These educational decisions can have long-term effects on student outcomes. In an address to the National Education Association in 1972, Mercer described the

significance of appropriate educational decisions as “Educational decisions which systematically favor one group over another predetermine which group will occupy the seats of power and which group will remain powerless” (p.1). From special education referral to placement, educational decisions can be affected by different types of bias (Artiles & Trent, 1994). In the following sections, bias is conceptualized as prejudicial attitudes and opinions towards a certain viewpoint or psychometric error (Reynolds & Gutkin, 1999).

The Referral Process

de La Cruz (1996) indicated that after a relatively short time in general education, approximately two years, minority students with academic or behavioral difficulties are typically referred for special education. Decisions to refer students for special education are often initiated by teachers. Teacher referral, arguably the most important decision in the special education process, is influenced by a number of contextual variables (NRC, 2002); however, research on this phase of the process is limited (Hosp & Reschly, 2003). Hosp and Reschly (2003) conducted a meta-analysis of literature investigating referral rates for African Americans, Hispanics, and Whites. Results revealed that African Americans were referred 1.3 times more frequently for intervention or assessment than Whites; however, there was no major discrepancy found between the referral rates of Whites and Hispanics. The authors concluded that more research is needed on the possible causes of the differences in referral rates. Since teachers tend to be the initial referral agents, their attitudes, expectations, and opinions are particularly significant in the special education referral process. Some research has focused on the impact of biased

teacher perceptions in the referral process (e.g., Bahr & Fuchs, 1991; Knotek, 2005; Tobias, Zibrin, Menell, 1982; Ysseldyke & Algozzine, 1982).

Due to the changing demographics of the United States population, teachers are more frequently exposed to children from cultures different than their own. When there is misinterpretation of cultural behavior, the perpetuation of negative stereotypes may result (Artiles & Trent, 1994; Chamberlain, 2005; NRC, 2002). Consequently, ethnocentric standards about behavior, held by members of the mainstream culture, may result in school personnel making more referrals for special education, having lower expectations for minority students, and assessing culturally diverse students more negatively (Artiles, Harry, Reschly, & Chinn, 2002). Artiles and Trent argue that in American culture diversity is unconsciously equated with disability. Oswald et al also corroborate this viewpoint by indicating that "differences in behavior or learning needs may be interpreted as disability rather than acknowledged as cultural difference" (p. 57). This type of perception can easily lead to differential referral rates by school personnel.

Biased attitudes of teachers can result in inappropriate referrals (Harry, 2002), which oftentimes lead to special education placement (de la Cruz, 1996; Green, 2005; Hosp & Reschly, 2003; Kearns, Ford, & Linney, 2005). Although difficult to investigate, the impact that cultural bias has on decision-making should not be underestimated (NRC, 2002). Attitudes, expectations, and opinions are constructed through the observer's cultural lens (Neal-Barnett, Contreras, & Kerns, 2001) and exert a strong influence on their behavior. The implication of cultural bias is not a new phenomenon in relation to special education. As early as 1977, empirical evidence was found that implicated teacher bias in referrals for special education (Bahr & Fuchs, 1991). In the 1980's several

simulation studies were conducted investigating the role of bias on referral decisions and perceptions of students' behavior. A meta-analysis of these studies revealed that teachers had negative perceptions of students based on student race (NRC, 2002). More recently, Costello and Janiszewski (1990) found that perception of problematic behavior was not related to academic achievement, but related to race, gender, and SES variables. Zimmerman, Khory, Vega, Gil, and Warheit (1995) found that White and Hispanic teachers rated African American children as having more problematic behavior than students of other ethnic groups. However, African American teachers reported equal numbers of problem behaviors across ethnic groups. They also found a large discrepancy between the ratings of African American parents and non African American teachers, with the ratings by teachers indicative of more problematic behavior.

According to Webb-Johnson (2002) certain aspects of traditional African American culture (e.g., spirituality, harmony, movement, verve, affect, communalism, expressive individualism, orality, and social time perspective) are less tolerated by teachers, making those children who engage in these culturally-adaptive behaviors more susceptible to referral. Webb-Johnson conducted a qualitative study in a small urban elementary school setting examining the African American cultural dimension of expressive individualism. Game-playing, dissembling, and defiant coping strategies was interpreted as manifestations of expressive individualism. It was observed that as a result of engaging in these culturally-appropriate behaviors, African American students received more negative attention.

In contrast, Bahr and Fuchs (1991) failed to replicate previous findings that biased perceptions impacted the referral process. They surveyed 40 general education teachers

from nine inner city middle schools in a southeastern metropolitan city. Seventy-three percent of the teachers were female. African American teachers comprised 30% of the sample, with White teachers comprising the remainder. They were asked to nominate one nondisabled, most difficult to teach student (DTT). The teachers selected 40 male students. Of the male students, there was equal representation of African American and White students. Results indicated that African American DTT students were rated as more appropriate for special education referrals than White DTT students. However, teacher descriptions and ratings of students were not significantly different for the African American and White students. The authors concluded that although more DTT African American students were rated as appropriate for special education referrals, teachers made non-biased referral decisions because the DTT African American students had significantly lower academic achievement.

More recently, a study conducted by Jussim, Eccles, and Madon (1996) found no evidence that race/ethnicity, gender, or social class impacted teacher perceptions. In addition, Kearns et al. (2005) surveyed 152 school psychologists nationwide regarding overrepresentation of African Americans in special education and found that biased teacher referrals were not perceived as one of the most influential factors. Clearly, more research is needed on the impact of cultural perceptions on the decision-making process during the referral phase of the special education process.

The Assessment Process

Although, teachers have been described as reliable and valid “tests” for predicting student outcomes (Bahr & Fuchs, 1991), indirect measures of performance, such as behavioral rating scales, can be influenced by biased attitudes more than other

standardized instruments used during an assessment. Some researchers posit that minorities often receive poor ratings from White teachers on these types of instruments (Harry & Anderson, 1994). These subjective rating scales are oftentimes utilized when investigating emotional and behavioral functioning to validate placement in ED programs and mild MR programs, categories in which African Americans have been historically overidentified. In a study conducted by Mehan, Hertweck, and Miehls (1986), teachers were described as focusing more on the negative behaviors of referred students who were considered behavior problems, even though the nonreferred students engaged in the same type of behavior as well. The presence of confirmatory bias was implicated as influencing the teacher's perceptions of the two groups of students. Confirmatory bias is described as the tendency to search for and accept data that supports initial perceptions, while rejecting evidence that disconfirm initial perceptions (Reynolds & Gutkin, 1999).

In addition to the perceptions of teachers, the perceptions of other professionals can also impact the process. Confirmatory bias was also found amongst school psychologists (O'Reilly, Northcraft, & Sabers, 1989), which is concerning because they are perceived as the "gatekeepers" of special education due to their influential roles in the evaluation of students for special education placement (Macmillan, Gresham, & Bocian, 1998). School psychologists were shown to most likely agree with referral concerns despite contradictory information (O'Reilly et al.).

Psychometric bias has also been implicated as contributing to overrepresentation of minorities in special education. For many years, the validity of standardized tests has been challenged due to the inherent cultural biases believed to exist in these instruments (Gravois & Rosenfield, 2006; Harry & Anderson, 1994). Proponents of this hypothesis

believe that traditional tests are created, administered, and normed mostly by members of the majority culture; thus, the cognitive abilities of minority students are not accurately estimated (de la Cruz, 1996). In the past, based solely on their performance on standardized tests, minority students were placed in low academic tracks and special education classes. In 1969, the Association of Black Psychologists requested a moratorium on the use of intelligence tests for educational decision-making due to the belief by some that the instruments were biased against minority students (NRC, 1982). Standardized measures, such as IQ tests, were heavily relied upon during special education eligibility meetings for making educational programming decisions (de la Cruz, 1996; Bickel, 1982; NRC, 1982). The role of these tests in special education decisions, especially for minority children, received much attention.

The 1982 NRC report indicated that after a thorough review of the available literature "little evidence for test bias" (p. 61) was found. More recently, Skiba et al. (2002) investigated the role of psychometric bias in standardized testing influencing placement in special education. Construct validity, item bias, sample bias, differential predictive validity, and examiner or language bias were investigated as possible sources of error. Their conclusion supported previous findings that standardized tests do not appear to be biased against minority students (Niesser et al., 1996; Kearns et al., 2005); yet, the utility of standardized assessment, especially IQ testing, continues to be heavily debated.

The discussion of special education assessment of minority children is incomplete without mention of issues related to IQ and race. This debate spans more than 150 years and is yet to be conclusively resolved (Rushton & Jensen, 2005). Shortly after Dunn's

(1969) seminal article was published, Arthur Jensen published an article concluding that the Black-White IQ difference had a genetic component and therefore, was unalterable by educational practices (Jensen, 1969). Jensen's perspectives on race and IQ received much attention in the professional literature as well as the popular press, leading to years of heated debates on the issue (Rushton & Jensen, 2005).

Some important conclusions drawn by Jensen (1969) included: a) IQ was heritable, b) compensatory educational programs were unable to increase IQ or school achievement, and c) the differences between African Americans and Whites is genetic, with African Americans having inferior cognitive abilities (Rushton & Jensen, 2005). The reaction in the public and professional domains to the article was described by Herrnstein and Murray (1994) as "immediate and violent" (p. 9). The IQ debate spilled over into popular press again in 1994 with the publication of Herrnstein and Murray's *The Bell Curve*. In this controversial book, Herrnstein & Murray reiterated Jensen's previous findings. Some of their important findings included a) IQ is highly predictive of economic and social success, b) 40-80% of IQ is genetically heritable, c) the differences in IQ scores cannot be entirely explained by environmental factors, and d) IQ is largely unalterable to any significant degree.

Again, a hailstorm of criticisms and supports flooded the popular press and professional literature. In response to the controversial conclusions about the heritability of intelligence, the American Psychological Association (APA) established a task force in 1996 to investigate the intelligence debate. The report (Niesser et al., 1996) concluded the following: a) IQ test scores have moderate predictive validity for individual school achievement, b) IQ scores also correlate with accomplishments outside of school, such as

occupation, when variables such as education and family background have been statistically controlled, c) individual differences in intelligence are influenced by genetics and environment, d) intelligences tests do not seem to be biased against African Americans, and e) the reason for the Black-White IQ difference is unknown.

Additionally, the task force indicated that there are many types of intelligence, yet very few are measured psychometrically. More importantly it indicated that knowledge of group IQ means had few implications for individuals because the variance of scores within groups is much greater than between groups (Niesser et al., 1996). Oftentimes preconceived judgments about the ability of minority students are made based on their ethnicity and reinforced by low IQ and academic test scores. Even though it is undeniable that IQ tests are moderate predictors of school performance, they only account for approximately 25% of the variance in school achievement (Neisser et al., 1996). Over reliance on these instruments in the school setting is questionable since it is possible to improve the school learning of children without changing IQ scores (Niesser et al.).

While both *the Bell Curve* (1994) and the APA report (Neisser et al., 1996) acknowledged that the differences between African Americans and Whites were diminishing on standardized instruments, only the APA report acknowledged that compensatory education programs and quality of formal education contributed to this outcome. Compensatory educational programs are linked to less special educational eligibility, retention, and high school graduation. The overemphasis of IQ scores and other standardized measures of achievement places many minority students at risk for being referred or labeled for special education, although the problem may be more related to educational experience (Skiba, Poloni-Staudinger, Simmons, Feggins-Azziz, & Chung,

2005). Along with compensatory educational programs, consistent attendance and quality instruction both impact intelligence and scholastic aptitude (Neisser et al.). An example of this can be seen in a comparison of cognitive abilities of students who were consistently in school and those of students who did not receive a consistent, formalized educational experience. During the school integration movement, African American students in Virginia who were not able to attend school for a few years due to its closure by White politicians had IQ tests scores 6 points lower per missed year of school than a control group of African American students who were enrolled consistently in a formalized educational environment (Neisser et al.).

In short, the assessment process is heavily influenced by legal requirements and ethical principles. Although, most assessments include a battery of instruments examining cognitive, behavioral, and academic functioning, the usefulness and meaning of these results is highly debated in the literature. The impact of cultural bias and the existence of psychometric bias have both been frequently implicated as causes of overrepresentation in the assessment phase of the special education process. The debate about the influence of these two sources of error is unresolved and ongoing.

The Placement Process

The final stage in the special education eligibility process is placement. Students can receive special education services in a number of ways across a continuum of least restrictive to most restrictive settings. However, historical trends in placements demonstrate that minority students are more likely to be found eligible for special education and receive more of their instruction outside of the general education classroom. Argulewicz (1983) examined the rate and types of special education

placements across ethnic/racial groups in a school district in the southwest United States to investigate the impact of bias in special education placement decisions. His study found that middle class Hispanic, Spanish-speaking students had a high probability of placement in special education programs, while middle class African Americans had the lowest probability of placement. Low and mid-SES Hispanic, Spanish-speaking students and low SES African Americans had a higher probability than any other ethnic groups to be enrolled in special education programs. Cultural/linguistic variables were found to be more influential in the probability of special education placement than SES. Level of acculturation appeared to affect placement decisions, although it was clearly indicated as an exclusionary factor for special education eligibility in the state that the research was conducted. The author concluded that socio-political influences seemed to be operating when disproportionate ethnic placements exist. He recommended that decision makers be able to substantiate the validity of assessment procedures used for culturally diverse students and document the effectiveness of programs.

Hosp and Reschly (2002) conducted a study investigating placement decisions for 230 learning disabled African American and White, 3rd through 5th graders in four school districts in Delaware. The study examined 102 variables that were hypothesized as being related to placement decisions (i.e., prereferral interventions, referral concern, academic achievement, behavior, type of LD). Several 2 x 2 ANOVAs examining the main effect of each variable and ethnicity were computed to determine if there were differences between African Americans and Whites on time spent outside of the general education classroom. Results revealed that placement decisions (i.e. time spent outside of general education classroom) for African American and White students did not indicate that

biased practices were used. The authors indicated that restrictiveness of placement was related to severity of academic difficulties, behavior problems, and family involvement, across ethnic groups. They concluded that the underlying causes of disproportionate representation of African Americans in special education “may be more complex than the simple allegations of racial discrimination support” (p. 232).

Overrepresentation and Poverty

The influence of socioeconomic status further complicates the overrepresentation debate. Some researchers maintain that more minorities are in special education programs because a greater proportion of them live in perpetual poverty (Kaufman, 1999), with African American and Hispanic students being four and three times as likely, respectively, as White children to have disadvantaged backgrounds (NRC, 2002). Others respond that the relationship is correlational, at best, and inconclusively linked (Chinn & Hughes, 1987; Kearns et al., 2005; MacMillan & Reschly, 1998). According to Macmillan and Reschly (1998), ethnicity is inaccurately emphasized as a risk factor for disproportionality because evidence strongly links SES to academic difficulties. The "Figment of the Pigment" (p. 20) has distracted researchers from focusing on the impact of poverty on development. The authors emphasized that SES should explain more of the variance in high incidence disabilities than racial/ethnic group membership. Other researchers also conclude that SES has differential impacts on student outcomes (e.g., cognitive ability, high school graduation, unemployment) (Smith, Brooks-Gunn, & Klebanov, 1997; Hosp & Reschly, 2004; NRC, 2002).

The NRC (2002) described the impact of poverty on cognitive abilities as follows: “biological and social/contextual contributors to early development …differ by race and

…leave students differentially prepared to meet the cognitive and behavioral demands of schooling" (p.357). Artiles et al. (2002) argued that because poverty affects many systems of the child's environment, it can contribute directly and indirectly to poor educational outcomes (e.g., special education placement; high school dropout). However, Artiles (1998) also encouraged that we acknowledge the great amount of resilience the African American culture has shown in the face of adversity and refrain from assuming that disproportionality is solely the result of poverty.

Oswald et al. (1999, 2001, 2002) have demonstrated in several studies that gender and ethnicity affect the likelihood of special education placement. Oswald et al., (1999) examined variance in minority disproportionality through the use of nationwide databases. The researchers examined fiscal, demographic, and economic variables at the district level to determine the variance contributed by these predictors to overrepresentation of students in special education. The variables, which comprised the environmental model, included (a) median housing value, (b) median income for households with children, (c) percent of children below poverty level, (d) percent of children at-risk, (e) percentage of adults without high school diplomas, and (f) percentage of students not proficient in English. The environmental model, found to be statistically significant, accounted for 11.7% of variation in Seriously Emotionally Disturbed (SED) category and 35.6% in the mild MR category.

The addition of racial/ethnic variables to the model was hypothesized to increase the predictive power of the model. When racial/ethnic group information was added, a statistically significant increase in the amount of variance accounted for in SED and mild MR categories was found. The new model accounted for 13% of the variation in SED

category and 36% in the mild MR category. For African American students specifically, the addition of the race/ethnic group variable increased the amount of variance accounted for by the model from 12% to 18.5% for SED eligibility and from 26.9% to 36.1% for mild MR. After taking into account variables associated with SES, race/ethnicity factors were clearly influential in determining eligibility for African American students in SED and mild MR. The authors concluded that "demographic variables were found to be significant predictors of identification of students as MMR or SED; however, after the effects of these variables were accounted for, the likelihood of being identified as MMR or SED was still significantly influenced by ethnicity" (p. 203)

In a study examining minority students with mild MR using national data compiled in the *Elementary and Secondary School Civil Rights Compliance Report,* Oswald et al. (2001) reported statistically significant correlations between ethnicity, gender, and mental retardation. They examined the extent of disproportionality by ethnic/racial groups, as well as correlations between socio-demographic variables and MR eligibility. The socio-demographic variables investigated included: student-teacher ratio, per pupil expenditures, at-risk student population, minority student enrollment, LEP student enrollment, median housing value, median income for households with children, percentage of children living in poverty, and percentage of adults in the community who did not obtain a high school diploma.

Using White females as the comparison group, the authors concluded that African American males were significantly overrepresented in the MR category based on OCR data from the 1994-1995 school year. In addition to gender and ethnicity, the authors also found statistically significant associations between the socio-demographic district-level

variables and MR placements (Oswald et al., 2001). For example, a weak to moderate, statistically significant, positive correlation was found between poverty and MR placement for all gender/ethnic groups, except female Asian/Pacific Islanders. The results of a logistic regression analysis indicated that the sociodemographic variables explained "some significant portion of the variation in districts' mental retardation identification rates" (p.358). However, the model that included both the socio-demographic variables and the gender/ethnic variables was a significantly better predictor than both the socio-demographic model (χ^2 [1485, N = 41,726,796] = 667,570, $p < .0001$) and the gender/ethnic model (χ^2 [1620, N = 41,726,796] = 383,788, $p < .0001$), independently. There was also a significant interaction effect between gender/ethnicity and sociodemographic variables (χ^2 [1458, N = 41,726,796] = 86,224, $p < .0001$). These results indicated that both sociodemographic variables and student characteristics influence the likelihood of MR identification. The results also revealed "the impact of the socidemographic characteristics is different for each of the various gender/ethnicity combinations" (p.359).

Overrepresentation of African Americans and American Indians was found to increase as poverty decreased. Thus, "living in a community of with a low rate of poverty markedly increases the odds of MR identification for African Americans and Native Americans…in relation to the rates of their White counterparts" (Oswald et al., 2001, p. 360). In areas with a high poverty rate, MR identification rates were more similar across gender/ethnic groups. This finding, along with the finding that African American students who live in predominantly White communities are likely to be identified as MR,

substantiates the hypothesis that overrepresentation is linked to racial/ethnic factors in addition to SES.

In another major study, Oswald et al. (2002) again demonstrated that after accounting for the effects of SES, gender and ethnicity significantly affected the likelihood of students being identified as LD. Based on OCR data from the 1994-1995 school year, the authors concluded that males across ethnic groups were significantly overrepresented in the LD category, with the exception of male Asian/Pacific Islanders. As in the previous study, the authors again used White females as the comparison group for calculating odds ratios to determine the extent of disproportionality. In addition to gender and ethnicity, the authors also found statistically significant associations between the socio-demographic district-level variables (i.e., student-teacher ratio, per pupil expenditures, at-risk student population, minority student enrollment, LEP student enrollment, median housing value, median income for households with children, percentage of children living in poverty, and percentage of adults in the community who did not obtain a high school diploma) and LD placements.

A weak, statistically significant, positive correlation was found between the overall LD identification rate and the percentage of nonwhite students and LEP students in the school district for all groups, except White students. The results of a logistic regression analysis indicated that the sociodemographic variables explained "some significant portion of the variation in districts' LD identification rates" (p.53). However, the model that included both the socio-demographic variables and the gender/ethnic variables was a significantly better predictor than both the socio-demographic model (χ^2[1,485,N = 41,819,191] = 667,570, $p < .0001$) and the gender/ethnic model (χ^2[1,620,N =

41,819,191] = 383,788, $p < .0001$), independently. There was also a significant interaction effect between gender/ethnicity and sociodemographic variables (χ^2[1,458,N = 41,819,191] = 86,224, $p < .0001$). These results indicated that both sociodemographic variables and student characteristics influence the likelihood of LD identification. The results also revealed "the impact of the socidemographic characteristics is different for each of the various gender/ethnicity combinations" (p.54).

Thus, living in a community of with a high rate of poverty markedly increased the odds of LD identification for African Americans, Hispanic, and Asian male students in relation to the rates of their White peers. In contrast, LD identification decreased with increasing poverty for male American Indian and White students. Furthermore, when all the predictor variables were taken into account, identification of Black and Hispanic students and White male students actually increased slightly at the median value of the sociodemographic variables, while overrepresentation of American Indian students diminished slightly.

Using 1990 OCR data, 1990-1991 National Center for Educational Statistics (NCES) Common Core Universe survey data, and NCES 1990 Census school district special tabulation data, Eitle (2002) also investigated the impact of political, cultural, and economic variables on MR placement for African American students. The author also showed that many of these factors were linked to disproportionality of African Americans in MR programs. Of particular interest were the results of the relationship between poverty and MR placement. She hypothesized that White median household income would be positively associated with overrepresentation. The data indicated that as the median income of White families increased, the overrepresentation of African American

students in mild MR programs also increased. There was also a significant positive correlation between the proportion of African American families living in poverty and overrepresentation. In addition, disproportionality decreased as college educated, African American heads of households increased and as White poverty increased to a certain proportion (i.e., 17% of White families living in poverty). In districts with White poverty rates exceeding 17%, overrepresentation of African Americans in MR programs were likely to be found. The author concluded that socio-political structures influence MR placement rates. These findings add support to the complexity of the poverty, race, and special education issue.

Hosp and Reschly (2004) corroborated most of the findings in the Oswald et al. (1999) study. Using national databases, they investigated the influence of academic, demographic, and economic variables on overrepresentation of African Americans in LD, MR, and ED categories. Results indicated that economic variables (e.g., median housing value of community, median income of households with children, % of adults in the community who have a 12th grade education or less, without a diploma, % of children in community who are at risk) and demographic variables (e.g., White students in district, African American students in district, % of students in district identified as LEP, etc) were reliable predictors of overrepresentation of African Americans in MR and ED categories. Economic variables were the strongest predictors of overrepresentation in the MR category across ethnic/racial groups, while demographic variables and academic variables were strongest for ED and LD, respectively. Demographic variables were stronger predictors of overrepresentation of African American students in ED and LD categories. SES and race both contributed significantly to the overrepresentation in

special education programs. The academic variables were the weakest predictors of overrepresentation across ethnic/racial groups and eligibility categories.

Skiba et al. (2005) also examined the influence of race, poverty, and other socio-demographic variables on minority disproportionality in special education. Data were collected from the *Uniform Ethnic and Racial Questionnaire* and the *Uniform Federal Placement Questionnaire,* which compiled information from the 295 school districts in a Midwestern state for the 2000-2001 school year. The analyses consisted of Ordinary Least Squares (OLS) regression to predict disproportionality in specific disability categories and logistic regression to assess the independent effects of ethnicity/race, poverty, and district-level resources and outcomes on special education placement. Similar to previous studies, there was a moderate correlation between poverty and race (r=.535). Overall, poverty was significantly correlated with academic achievement and special education placement.

However, poverty did not account for all the variability in disproportionality and was described as "a weak and inconsistent predictor of overall disproportionality" (Skiba et al., p.141). For the mild MR category, increased poverty predicted increased disproportionality; yet, for the categories of ED and moderate MR, poverty failed to have significant predictive results. More interesting, in the categories of LD and SLI, more affluent districts had higher rates of disproportionality. These researchers concluded that using race as a proxy for poverty is inaccurate because poverty does not account fully for the variance due to race. This was evidenced by the moderate correlations between poverty, special education placement, and academic achievement, while the correlations

between race (e.g., percentage of African American enrollment) and these variables were significantly lower.

In contrast to Oswald et al. (2001), this study found that increased poverty was significantly associated with increased disproportionality. Overall, the results showed that when race and poverty are simultaneously considered, race is a stronger predictor than poverty of special education placement. The authors concluded that their results "failed to establish in reliable relationship between rates of poverty and disproportionate placement in special education" (p.141).

In summary, an analysis of available research demonstrates that poverty is linked to increased rates of overrepresentation of students, minorities especially, in special education. With such a substantial proportion of African American children living in impoverished conditions, it seems plausible that these children are more at-risk for special education placement. However, the research also indicates that for these students specifically, their racial/ethnic background and gender also places them at risk for special education. The nexus of special education, poverty, and race is complicated and further research is needed.

Measuring the Overrepresentation of Minorities in Special Education

In order to examine the overrepresentation of minorities in special education, special measurement techniques must be employed. As in the Dunn (1968) article, early statistical analysis consisted of educational guesses and estimations (MacMillan & Reschly, 1998). Once federal regulations mandated data collection, great attention was given to the way in which the information was analyzed and reported (Chinn & Hughes, 1987; Hosp & Reschly, 2003). Composition Indices, Risk Indices, and Risk Ratios are

frequently used to present overrepresentation data; however there is an on-going debate within the literature about the most appropriate method of measurement (e.g., Argulewicz, 1983; Chinn & Hughes, 1987; Dunn, 1968; Mercer, 1973b; U.S. Department of Education, 2003).

Composition Indices are one of the earliest methods used to quantify disproportionality. Composition Indices reflect the percentage of students, by ethnic group, that receive special education services based on disability or educational environment (Chinn & Hughes, 1987; Hosp & Reschly, 2003; Salend et al., 2002; Skiba et al., 2005). A type of composition index was used to substantiate the plaintiff's claim of disproportionality in the *Larry P. vs. Riles* case. In the California school district where the case emerged, a composition index was used to determine that African American students comprised 66% of the school aged EMR population; yet, African American students only comprised 29% of the school aged population (Harry & Anderson, 1994).

Strengths of this method include being easily interpreted, easily computed, and its application to specific disabilities or environments. However, misinterpretation of composition indices is likely, especially among consumers of research (Artiles, Harry, Reschly, & Chinn, 2002; Coutinho & Oswald, 2000). Limitations include its sensitivity to the population demographics and its proclivity to being misinterpreted. Without data that describes the demographics of the general population, interpretation of the composition is easily misconstrued. For example, Composition Indices will vary directly with the percentage of representation in the general population; therefore, some groups will be more represented than others in special education because of their prevalence in the population. Hosp and Reschly (2003) warn that this method can "inflate the appearance

of disproportion" (p. 69); however, Skiba et al. (2005) described the Composition Index as a promising method for illustrating disproportionality.

In contrast, Risk Indices answer a slightly different question. Risk provides information about the percentage of students from ethnic/racial groups that are represented in specific eligibility categories (Gravois & Rosenfield, 2006; Hosp & Reschly, 2003; MacMillan & Reschly, 1998; NRC, 2002). It is calculated by dividing the number of students in a given ethnic/racial group in a certain disability category by their total enrollment in the school population. For example, in School District A, if there are 8000 African American students in the population and 200 are categorized as MR, 2.5% of all African American students in the district received services as MR. The Risk Index is essentially a probability index; therefore, it is not influenced by population demographics as is the composition index. However, risk is directly influenced by overall special education identification rates. If special education identification rates are high, risk will be high, and vice versa. In response, researchers have developed ways to determine Risk ratios. Risk Ratios are indices of the likelihood of a certain group's representation in categories or environments. Although Risk Ratios are not without limitations, many researchers believe they are the best indices of disproportionality (Morgan, 2003; OSEP, 2003).

Currently OSEP (2003) recommends measuring disproportionality through computing Risk Ratios. Risk Ratios provide an index of the likelihood of specific groups being represented in special education. This method is also referred to as the "odds ratio" or "relative risk" (Hosp & Reschly, 2003; NRC, 2002; Salend et al., 2002; Skiba et al., 2005). This ratio can be applied to eligibility categories as well. Risk ratios represent

proportions of risk (i.e., risk for African Americans to risk for all students in population) in eligibility categories or educational environments. Risk Ratios are obtained by dividing the Risk Index for one group by the Risk Index of another group or all other groups (Gravois & Rosenfield, 2006; NRC). Ratios greater than 1.0 indicate greater risk for identification, while ratios less than 1.0 indicate decreased risk for special education identification. Unlike the Risk Index, it is not influenced by overall special education identification rates. Risk Ratios are also not impacted by an ethnic/racial group's overall percentage of enrollment; however, small numbers of students in the target group or comparison group make interpretation difficult (Westat, 2003). When using the Risk Ratio, it is imperative to identify the comparison group. Most often the comparison group used is White students.

The Office for Civil Rights (OCR), entrusted with the duty of ensuring that students are not discriminated against, began collecting biannual survey data about the ethnic/racial and gender demographics of the nation's school districts in the late 1970's (NRC, 1982). Early reports focused on sex and race classifications for students in special education programs for EMR, TMR, SED, SLD, and SI. The OCR partnered with the NRC to study disproportionality and formulate policy that would help protect students against such discrimination. Results of the analysis found that 38% of the students enrolled in EMR classes were African American, although African American students only comprised 16% of the school aged population. A form of a Risk Ratio calculation showed that minority students were 2.5 times more likely than Whites to be assigned to EMR classes. With the exception of SLD and SI, a substantial difference was found between the risk indices of African American students and other ethnic groups. For

example, 3.46% of the total school aged African American population was identified as EMR, while risk indices for Whites, Hispanics, Asian/Pacific Islander, and American Indian/Alaskan Natives were 1.07, .98, .37, and 1.73, respectively.

Chinn and Hughes (1987) examined the trends in overrepresentation, using data collected by OCR, from 1978 through 1984. In 1978, 1/3 of the school districts in the US were included in the sample; however, in the years immediately following, there were significantly less districts represented in the report. The 1978 sample included approximately 42 million students, while the 1984 sample included approximately 19 million students. The 1978 OCR survey sampled approximately 6000 school districts, including 54,000 schools (NRC, 1982). However, this sample was not a random, nationally representative sample of school districts (MacMillan & Reschly, 1998). It included the largest 50 school districts and a sample of other school districts. Because the methods for selecting school districts varied from year to year, the proportion of African Americans included in the sample also varied significantly (MacMillan & Reschly). The authors recommended that representation in special education above or below 10% of a target group's total enrollment in the school population, be considered disproportionate. In 1978, blacks composed 38% of the school-aged EMR population, yet only represented 15.71% of the total school enrollment. The percentage of African Americans enrolled in school fluctuated from 15.71% in 1978 to 24.52% in 1984; however, their enrollment in EMR, TMR, and SED programs, during all four years of data collection, met the authors' definition of overrepresentation. They were identified as EMR, TMR, and SED at twice the rate, as would be expected based on their total enrollment in the school population. The only category that African Americans were not overrepresented in was SLD. In all

four years, Hispanics were not disproportionately represented in EMR, TMR, SED, LD, or SI. American Indians/Alaskan Natives were overrepresented in LD all four years and overrepresented in EMR three of the four years that data was reviewed. Whites had a disproportionately low representation in special education programs and a disproportionately high representation in gifted/talented. With the exception of Asians/Pacific Islanders, all minority groups were underrepresented in gifted/talented programs.

From data drawn from three nationwide publications, Zhang and Katisyannis (2000) found that more African Americans and American Indians/Alaskan Natives were represented in special education programs for all disabilities, EBD, LD, and MR. Oswald, Coutinho, Best, and Nguyen (2001) analyzed national data and found that African American males were 3.26 times more likely than White females to be identified as MR. Hispanic males and females were .95 and .70 times, respectively, more likely than White females to be identified as MR. African Americans composed 21% of the special education school-aged population, even though they represented only 16% of the school aged population (US Department of Education et al., 2003).

In 2002, the NRC was again requested by OCR to investigate minority representation in special education. Their analysis was expanded to gifted education and all categories of special education eligibility. Data was taken from the Elementary and Secondary School Civil Rights Compliance Report (E&S Survey) and the U.S. Department of Education, National Center for Education Statistics Common Core of Data 1998-1999. The National Center for Education Statistics Common Core of Data 1998-1999.annually collects fiscal and non-fiscal data about all public schools, public school

districts, and state education agencies in the United States. The E&S Survey sampled one-third of the nation's approximately 15,000 school districts (NRC, 2003). School districts with at least 25,000 students are included in each administration of the survey. This sample included 37 percent of all school districts, which contained 77 percent of public school students enrolled in grades 1–12. Risk indices for all five ethnic/racial groups, across disability categories, range from 5.31% for Asian/Pacific Islander to 14.28% for African Americans. African Americans, American Indians/Asian Pacific Islanders, and Hispanic students continue to represent the largest proportions of the special education population (NRC). Minority students were also much more likely to be labeled MR than their White peers. African Americans comprised 33% of the MR enrollment, while comprising 17% of the total school age population. The Risk Index for African American students in the mental retardation category has gradually declined from 4% in 1976 to 2.64% in 1998. However, data from 1998 revealed that African Americans were more than twice as likely as Whites to be label MR. The results of the study showed that African American students were overrepresented in MR programs across the nation, larger EMR programs had greater disproportionality, and low SES school districts were most disproportionate (Harry & Anderson, 1994).

Recent data from U.S. Department of Education (2003) show that African American students have a 45% greater likelihood of placement in special education programs than all other ethnic/racial groups combined. African American students are nearly 3 times more likely to be classified as MR, while all other ethnic/racial groups have a decreased risk or very low risk. African American students are more than twice as likely to be labeled ED, compared to students of all other racial groups with the exception

of American Indians/First Americans. The *Twenty-fifth Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act* (2003) indicated the percentage of African American students with disabilities served through special education services was substantially higher than all other ethnic/racial groups. Demographics from the 2000 Census estimated that approximately 14% or 7.4 million of the school-age population is African American, yet a disproportionate amount of African Americans comprise the school-aged special education population, 20% or 1.2 million students (US Census Bureau, 2000; US Department of Education et al., 2003). Put another way, there are almost 3 times as many White students in special education as African American students, yet African Americans are nearly 3 times more likely to be identified as MR.

Solutions to the Problem of Overrepresentation

Possible solutions to the disproportionality problem are abundant in the literature. Systemic changes to special education eligibility and placement procedures (Dunn, 1968; NRC, 2002), improved quality of educator training programs (Artiles et al., 2002; Dunn, 1968; NRC), increased research commissioned by federal, state, and local officials examining disproportionality and the development of empirically-supported classroom strategies for children with learning difficulties (Cartledge, 2005; NRC), development of culturally relevant pedagogy (Artiles & Trent, 1994; Chamberlain, 2005), early intervention services (NRC), increased educational funding (Blanchett et al., 2005), and utilization of prereferral intervention teams (Artiles et al; Rosenfield & Gravois, 2006) have been frequently recommended as possible solutions to the overrepresentation problem. Among these, the implementation of prereferral interventions (PITs) is one

response to underachievement that is employed quite frequently in the public school system.

Creation and Implementation of Prereferral Intervention Teams (PIT)

The earliest form of Prereferral Intervention Teams (PITs), called Teacher Assistance Teams (TAT) came into existence in the late 70's (Chalfant, Pysh, & Moultrie, 1979) as an outgrowth from EHA (Reynolds & Gutkin, 1999) and in response to the high number of referrals to special education (Papalia-Berardi & Hall, 2007). TATs were a function of general education with the goal of reducing inappropriate referrals to special education by providing academic and behavioral interventions for students and training teachers to become more effective at resolving student, classroom, and school-wide problems (Flugum & Reschly, 1994; Graden, Casey, & Christenson, 1985; Papalia-Berardi & Hall, 2007).

More recently, the 1997 reauthorization of IDEA mandated the implementation of prereferral interventions prior to special education referral (Knotek, 2003). There were no guidelines provided by IDEA around the implementation of prereferral interventions (Cohen, 2003; Buck, Polloway, Smith-Thomas, & Cook, 2003); consequently, the prereferral process is inconsistently implemented among the states (Buck et al., 2003). A recent study shows that although 67% of state departments of education require prereferral interventions to be implemented prior to special education referral, only 39% of states mandate the implementation of PITs (Truscott et al., 2005). Yet, 86% strongly recommends implementation of PITs to meet this requirement of IDEA (Truscott et al., 2005).

Prior to the establishment of mandatory pre-referral interventions by IDEA, some state departments of education were already implementing PITs. In 1985, the state of Georgia found itself a litigant in a civil suit, accusing the state of implementing discriminatory educational practices. *In Marshall v. Georgia* (1985), several school districts were accused of placing disproportionate numbers of African American students on low ability tracks and in special education. Reschly (1991) described the ruling in the *Marshall* case as "permit[ing] overrepresentation and intelligence test use if other protections were rigorously implemented…" (p. 258). Although the court's ruling supported the practices of the school district and did not find them to be discriminatory, the litigants were required to submit proposals about ways to remediate overrepresentation and some of the other issues that were uncovered with the special education process. The proposal that was eventually accepted created the Student Support Team (SST) initiative, a form of pre-referral intervention team that is now mandated in every public school system across the state. Yet, the state of Georgia continues to struggle with the issue of overrepresentation, with several school districts identified as overrepresenting minority students in special education.

Implementation Models of PITs

In addition to the TAT model, there are several models of PIT implementation recommended in the literature (Burns, Vanderwood, & Ruby, 2005); however, the most frequently utilized models are consultation-based delivery systems intended to provide support to students within the general education environment (Flugum & Reschly, 1994; Truscott et al., 2005). Most PITs employ a problem-solving approach aimed at operationalizing the problem, developing and implementing interventions, monitoring

progress, and generating recommendations (Truscott et al., 2005; Weishaar, Weishaar, & Budt, 2002). PITs are also referred to as Intervention Assistance Teams, Teacher Support Teams, Student Assistance Teams, Student Support Teams, Problem Solving Teams, Instructional Consultation Teams, Instructional Support Teams, and Mainstream Assistance Teams. Most PITs consist of general education teachers, special education teachers, school administrators, school psychologists, and other educational specialists (Yocum & Staebler, 1996; Burns, 1999; Weishaar et al., 2002; Meyers, et al., 1996).

Although the models have slightly different functions, team compositions, and methods of problem-solving, the overarching goal for all models is to provide support for teachers and students in general education, improve teacher effectiveness, and reduce referrals to special education (Cohen, 2003; Papalia-Berardi & Hall, 2007). However, the research-to-practice gap is very apparent in the area of PIT implementation. Truscott et al. (2005) reported that due to their speedy implementation and lack of guidelines provided by most states, many PITs are not research-based models and therefore are unprepared to fulfill its functions (Burns et al., 2005).

Effectiveness of PITs

The literature reveals that PITs are highly recommended and prevalent in school settings; yet, there is limited research attesting to their effectiveness (Burns & Symington, 2002). Additionally, Burns et al. (2005) reported that "there is a relatively small body of research addressing PIT effectiveness, and existing studies have been criticized for serious methodological concerns such as low sample sizes and a lack of control groups" (p. 95). This finding is especially concerning since in the most recent reauthorization of

IDEA (2004) the role of the PIT is fundamental to special education eligibility (Burns et al.).

A meta-analysis, including nine published studies or technical reports, conducted by Burns and Symington (2002) found that the PITs had a significant impact on student and systemic outcomes. Student outcome measures included time on task, task completion, scores on behavior rating scales, and observations of target behavior. Systemic outcomes included referrals to special education, special education placements, percentage of referrals that resulted in special education eligibility, number of students retained, and increase in consultative activities by school psychologists. They also found a significant difference between the effectiveness of PITs associated with university-based training and field-based PITs, with the former found to be significantly more effective because of the lack of fidelity in implementation of field-based PITs.

Gravois and Rosenfield (2006) investigated a form of PIT, called Instructional Consultation (IC) team, on the disproportionate referral and placement of minority students in special education. They found that after two years of PIT implementation there were significant decreases in referral and placement of minorities in special education. They also indicated that over the last 10 years this model of PIT has significantly reduced the total number of referrals and special education placements for all students, regardless of ethnicity. However, one limitation to the generalizability of the study was that PITs that were linked to decreases in referrals received extensive university-based support and training.

There appears to be many barriers that can impact the effectiveness of PITs implemented in typical school settings. Factors that may impact PIT effectiveness include

social group dynamics (Etscheidt & Knesting, 2007; Gutkin & Nemeth, 1997; Iverson, 2002), training (Kovaleski, 2002), administrative and faculty support (Kovaleski), and implementation integrity (Burns, Vanderwood, & Ruby, 2005; Lane, Pierson, Robertson, & Little, 2007). However, there has been little research conducted on variables hypothesized as impacting PIT effectiveness (Burns et al.; Iverson).

The performance of PITs is arguably impacted by the dynamics of group problem-solving. Research has shown that under certain conditions group problem solving can be more effective than individuals (Nijstad & Stroeboe, 2006); however, individual bias, low motivation, team composition, and stressful conditions can contribute to the ineffective performance of the group (Kerr & Tindale, 2004). Knotek (2003) also found that bias and other social forces could impede the effectiveness of the problem-solving process. In a microethnographic study investigating bias in the problem-solving process of PITs in two rural southern schools, Knotek found that PITs were vulnerable to individual bias, group bias, and other social influences. He found that bias was most likely to occur when the PITs were discussing students with behavior problems or those from low SES backgrounds. Knotek concluded that this tendency, though difficult to directly measure, may be contributing to the overrepresentation of African American students in special education.

Reynolds and Gutkin (1997) report that group decision making, such as that found in Multidisciplinary Diagnostic Teams (MDTs) and PITs, can result in poor decisions based on irrelevant student data, resource availability, and subjective individual opinion. Group dynamics such as group polarization, group think, and the influential power of the majority can result in decreased effectiveness of PITs. Because the process involves the

input of multiple individuals, having team members trained in group process skills helps facilitate systematic decision making (Iverson, 2002).

The paucity of policies or training for the implementation and functioning of PITs also impact their effectiveness (Truscott et al., 2005). Among the state departments of education surveyed by Truscott et al. less than half sponsored training on the implementation of the process. Thus, the lack of guidance at the state level results in inconsistencies in PIT implementation; therefore, most field-based PIT programs are inconsistent with models described and recommended in the literature (Telzrow et al., 2000). Burns et al. (2005) suggested that "training… [is] especially important when implementing a PIT" (p.100).

Obtaining administrative and faculty support for implementing PITs is crucial to its success (Iverson, 2002). Papalia-Berardi and Hall (2007) reviewed seven empirical studies assessing TAT social validity as rated by general education teachers. Social validity refers to the evaluation of consumer satisfaction. Results indicated that teachers' gave mediocre satisfaction ratings of TATs, indicating that "they did not overwhelmingly support or reject aspects concerning the purpose, process, and outcomes of TAT implementation" (p.104). Lane et al. (2004) investigated 354 elementary teachers' views of interventions generated by PITs and found that substantially more teachers were satisfied with the goals (e.g., 62% of teachers surveyed) and procedures (e.g., 58% of teachers surveyed) of the interventions and less were satisfied with student outcomes (e.g., 27% of teachers surveyed). In contrast, a study investigating teacher perceptions of the PIT process by Telzrow, McNamara, and Hollinger (2000) found that members of the teams rated the process as having a positive impact on student outcomes.

While, the PIT process has been shown to be cost effective (Burns & Symington, 2002), it can require a substantial time investment. The establishment of a shared vision between administrators and team members is crucial to the success of the process. Administrators must support the funding, time resources, and personnel necessary for the collaborative consultation that is required during the PIT process (NABSE & ILLIAD Project, 2002). Team members must perceive the process as useful and meaningful for it to be effective. Team members' motivation, attendance, expectations, preparation, and critical thinking are impacted by their commitment to the process and vice versa. Administrative and faculty support impact the fidelity of the implementation of PITs and therefore, the implementation of the recommendations of the PITs by the classroom teachers.

The fidelity of PITs refers to the treatment integrity of the implementation of the process. Treatment integrity refers to the extent to which the process or plan is executed as designed (Gresham, 1989; Lane et al., 2004). Treatment integrity data is rarely reported in studies examining the effectiveness of the PIT process, which complicates assessing its effectiveness (Lane, Mahdavi, Borthwick-Duffy, 2003). However, due to the clear difference in effectiveness of university-based PITs and field based PITs, one can easily surmise that treatment integrity significantly impacts the effectiveness of the team. Lane et al. suggested that accurate analysis of the PIT process requires the inclusion of treatment integrity data. One study found that PIT members perceived teams as being more effective when the process including procedures that assessed treatment integrity (Bahr, Whitten, Dieker, Kocarek, & Manson, 1999). Although available research supports that high fidelity implementation impacts effectiveness (e.g., Kovaleski, 1999),

limited research is available about the components of the PIT process that make the process effective (Flugum & Reschly, 1994).

Information from the behavioral consultation literature indicates that the most critical aspect of problem-solving is problem identification (Elliott & Sheridan, 1992). Elliott and Sheridan (1992) argue that "the single most important process variable in consultation is problem identification. Thus, the best predictor or plan implementation and resolution…is to define problems in behavioral terms" (p. 320). Flugum and Reschly (1994) reviewed the literature and found that indices of quality PIT implementation were described as: (a) behavioral definition, (b) baseline data, (c) intervention plan, (d) treatment integrity, (e) graphing, and (f) assessment of change. These indices were investigated as predictors of prereferral intervention outcomes with PITs. They found low implementation of the quality indicators in the prereferral intervention process. However, there was a significant relationship between the presence of these indicators and student outcomes.

Telzrow et al. (2000) studied these components by reviewing independent work products of multidisciplinary teams and student outcomes. They found the implementation of the quality indicators varied significantly. Six of the quality indices were found to have significant, but modest correlations with ratings of student outcomes. Highest fidelity scores were obtained for "Behavioral Definition of the Problem" and "Clearly Identified Goal". Lowest fidelity scores were obtained for "Hypothesized Reason for the Problem" and "Treatment Integrity". The indices "Clearly Identified Goal" and "Data Indicating Student Response to Intervention" were significant predictors of student outcome. Statistically significant, albeit moderate, correlations were found

between Behavioral Definition of Problem", "Baseline Data", "Clearly Identified Goal", "Systematic Intervention Plan", "Data Indicating Student Response to Intervention", and "Comparison of Student Response to Baseline" and student outcomes (e.g., *r*=.16 to .24).

Results indicated that although problem-solving models of pre-referral intervention practices were generally implemented for at-risk students, the reliability of their implementation was elusive. More recently, Iverson (1999) also emphasized the importance of certain components of problem-solving by stating "experts linger on the identification and definition of the problem, thereby enhancing the probability that the solution will be a quality one" (p. 659). Iverson also argued the importance of selecting appropriate data collection methods that adequately address the target problem to enhance effectiveness of the problem-solving process.

Using PITs to Diminish Disproportionality for Minority Students

In 2002, The Council for Exceptional Children published a report entitled "Addressing Overrepresentation of African American Students in Special Education: The Prereferral Intervention Process- An Administrator's Guide". This project was in collaboration with the National Alliance of Black School Educators (NABSE) and the IDEA Local Implementation by Local Administrators Project (ILLIAD). The focus of the project was to inform school administrators about the use of the prereferral intervention process, school climate, family involvement, and professional development to prevent the overrepresentation of African American students in special education. The report suggests that when PITs are functioning properly (e.g., high fidelity implementation), special education referrals are significantly reduced and student improvements are

obtained. Kovaleski (1999) insisted that consistent, high integrity implementation of PITs was necessary to reduce the overrepresentation of students with disabilities.

The literature reveals that ethnicity, quality of PIT implementation, and referrals to special education are important variables when examining the overrepresentation problem of minorities in special education. Therefore, the purpose of the current study was two-fold: (a) to identify the relative risk inherent in each phase of the special education process for students of color; and (b) to determine whether an association exists between the quality of PIT implementation, referrals for initial psychoeducational evaluations, referrals for special education, and student ethnicity. The present investigation differs from previous research in several important ways. First, few studies have empirically examined the impact of PITs on disproportionality. Second, this study examined the quality of implementation of the PIT process, its relationship with student ethnicity, its association with referral for comprehensive evaluations, and its association with special education referrals. There are no known studies that have examined these variables simultaneously. Third, analysis of direct work products of PITs, rather than assessing team members' perceptions of the functioning of the team, provides research on PITs that is limited in the available literature. Lastly, the study determined if the quality indices of the PIT process significantly differed for students of color, which also had not been explicitly investigated.

Disproportionality has been linked to bias in the special education eligibility process, poverty, poor quality instruction, prejudicial attitudes, and low cognitive abilities. There has been a great amount of emphasis placed on investigating many of the aforementioned variables; however, there has been substantially less examination of the

efficacy of the recommendations made for decreasing disproportionality, such as implementing PITs (Arnold & Lassman, 2003). The prereferral process is widely implemented, yet there is a need for information about the quality of the process and its impact on disproportionality. The current study addressed these issues and incites further research about solutions to decrease the problem of disproportionality.

This chapter included literature related to disproportionality, special education, and the prereferral intervention process. The research reviewed demonstrated the significance of the disproportionality problem, especially related to minority students and their families. The effects of stigmatizing labels, segregated educational placements, and low expectations can have diminishing and long-lasting negative consequences on the education and psychological development of minority students. The focus on diminishing disproportionality is much greater than merely wanting minority students in regular education classrooms. It's about ensuring that all students regardless of race, color, sexual orientation, religion, etc have access to educational opportunities that will help them become successful citizens.

CHAPTER 3

METHOD

Research Question 1

What were the risk ratios for students by ethnic/racial group throughout the phases of the special education process: (a) referral to PITs, (b) referral for initial psychoeducational evaluation, (c) referral for special education, and (d) special education placement?

The rationale for investigating this question was to determine where in the special education process disproportionality began and to investigate the impact of PITs on reducing disproportionality. Risk ratios, by ethnic/racial group at each phase in the process, were used to address the question. The research hypothesis was that risk ratios at all phases would be higher for minority students compared to other students. The data sources used to answer this question were child count data for referrals for PIT services by race, initial psychoeducational evaluations by race, special education referrals by race, and special education placements by race for 2004-2005 school year.

Research Question 2

What was the relationship between student ethnicity, initial psychoeducational evaluations, and PIT implementation?

The rationale for investigating this question was to determine if there was a difference in PIT implementation, measured by adherence to the problem-solving model, for the following two conditions, student ethnicity or receiving an initial psychoeducational evaluation. The research hypotheses were that significant differences in PIT implementation would be found between PIT records of students who were not

referred for initial psychoeducational evaluations and PIT records of students that were referred for initial psychoeducational evaluations. Significant differences were expected between the PIT records of minority students versus non-minority students. The data sources used to answer this question were component ratings on the Likert Scale and Scoring Rubric for Problem Solving Components instrument (Telzrow et al., 2000) on PIT records, ethnicity data, and initial referral status data from the 2004-2005 school year. Descriptive statistics and 2 (ethnicity) x 2 (initial evaluation status) ANOVAs were used to address this research question.

Research Question 3

What was the relationship between student ethnicity, special education referrals, and PIT implementation?

The rationale for investigating this question was to determine if PIT implementation is associated with student ethnicity or referrals for special education. The research hypotheses were that there would be significant differences in PIT implementation, measured by adherence to the problem-solving model, on PIT records of those students who were referred for special education in comparison to the PIT records of those who were not referred. Interaction effects between ethnicity and referral for special education also were anticipated showing that minority students who were referred for special education received lower quality PIT implementation. The data source used to answer this question were component ratings on the Likert Scale and Scoring Rubric for Problem Solving Components (Telzrow et al., 2000) instrument on PIT records, ethnicity data, and special education referral data from the 2004-2005 school year. Descriptive

statistics and 2 (ethnicity) x 2 (special education referral status) ANOVAs were used to address this research question.

Phases of the Special Education Process

In this school district, prior to students being referred for special education, PITs are required to intervene to help them become successful in general education. Although the prereferral process is not meant to be a precursor to special education placement, PITs are inevitably linked to special education because the success or failure of the process directly impacts referrals for special education. Examining special education referrals and thus, disproportionality, must begin with an examination of the prereferral process, which in this district is the PIT. As a result, for the purposes of the current study, the prereferral process is conceptualized as the initial phase of the special education process.

Prereferral Intervention Team (PIT) Assistance

When children are first identified as having academic or behavior issues that seem to affect educational progress, they are referred to the Prereferral Intervention Team (PIT). This building level team consists of general and special education teachers, administrators, and specialists who consult with the classroom teachers to devise interventions that can be implemented within the general education setting. The structure and implementation of the PIT varies greatly across the district from highly-structured, formalized procedures to informal, extemporaneous systems. Most frequently, the PIT chairperson is the assistant principal; however, teachers may serve in this role as well. PIT implementation training is provided by educational specialists (e.g., school psychologists, special educators, speech pathologists, etc.) to all teachers and administrators in the school district. This training is delivered throughout the year,

focusing on different aspects of the PIT process (e.g., data collection, interventions, overview).

The referral of a student to the PIT is made most often by the classroom teacher, but could also come from parents and other school personnel. The PIT recommendations are based on referral concerns. Examples of recommendations include tutoring, Early Intervention Programs (EIP), computer-assisted instruction, behavior modification plans, and phonics instruction. After the recommendations of the PIT are implemented for at least six weeks, the PIT reconvenes to review the student's progress. One of the main goals of the PIT is to formulate strategies that the teacher can easily implement in the general education classroom, without significant modifications to the classroom environment. Approximately 11% of the student population received PIT assistance during the 2004-2005 school year. Of those students receiving PIT support (n=2159), 59% were White (*n*=1271), 35% Black (*n*=745), 4% Hispanic (*n*=88), and less than 1% Asian/American Indian (*n*= 2) or Multicultural (*n*=31). The ethnicity/race was not identified for 22 students.

PIT Referral for Initial Comprehensive Psychoeducational Evaluation

After PIT assistance, if the student continues to demonstrate academic or behavioral difficulties, the PIT may request an initial psychoeducational evaluation. Referrals for initial psychoeducational evaluations must be approved and deemed appropriate by a district-level team of administrators and educational specialists (e.g., Quality Support Team [QST]). Members of this team include school psychologists, speech pathologists, special education coordinators, and assistant principals. Information compiled by the PIT is reviewed and the committee recommends if an initial

psychoeducational evaluation is appropriate. Information reviewed by the QST includes data collection that shows the student's response to implemented interventions, attendance records, work samples, standardized testing, background/family history, academic or behavioral screening results, vision/hearing screening results, functional behavioral assessments, grades, behavior charts, anecdotal observations, curriculum based assessments, and disciplinary records. If initial psychoeducational evaluation is deemed necessary and appropriate, the school psychologist conducts the assessment and reviews the results with the PIT. Subsequent to the completion of the assessment, the PIT reconvenes to discuss the results and recommendations of the evaluation. The PIT decides whether to implement other interventions or refer the student for special education evaluation. If maintained in the PIT process, the student continues to be closely monitored by the PIT. The PIT phase can be by-passed for students with severe academic or behavioral difficulties. In the sample of students referred for an initial comprehensive evaluation (n=267), 62% were White (*n*=164), 26% Black (*n*=70), and 6% Hispanic (*n*=21).The ethnicity was not identified for 12 records.

PIT Referral for Special Education

In addition to requesting and initial psychoeducational evaluation, the PIT can also refer students for special education evaluation. If the PIT determines that the interventions implemented have been unsuccessful or that the student's difficulties are too severe for typical interventions, the student may be referred for special education evaluation. If the student is referred for special education, the lead special education teacher at each school is responsible for obtaining any further information needed for consideration of special education services. After all necessary information and

documentation is gathered, the information is sent to a district-level special education administrator for review to ensure all necessary information and documentation has been obtained in order to determine special education eligibility. In the referred sample (*n*=264), 60% were White (*n*=159), 36% Black (*n*=94), 4% Hispanic (*n*=11), less than 1% Asian/American Indian (*n*= 0) and Multicultural (*n*=0).

Eligibility for Special Education

A final meeting is held with the PIT team and the district-level special education administrator to discuss eligibility. At this meeting, eligibility status is determined. If the student is found ineligible for special education services, the PIT committee retains responsibility for implementing intervention and other services. If the student is found eligible for special education services, an individualized educational plan (IEP) is drafted and subsequently implemented. In the sample identified as eligible for special education (*n*=209), 58% were White (*n*=116), 36% Black (*n*=75), and 6% Hispanic (*n*=12).

Sample

Population demographic of students within special education process. During 2004-2005 school year, 2159 students were active in the PIT process. Of those students that were active in the PIT process, 267 students were referred for initial psychoeducational evaluations. Of those students active in the PIT process, 264 students were referred for special education evaluation. Of those student referred for special education evaluation, 209 students were found eligible for special education. For the ethnic make-up of the students involved in the special education process, see Table 2. Records with unidentified ethnicity were excluded from the final analysis.

Table 2

Population Demographic of Students within Special Education Process 2004-2005 School Year

Ethnicity	District Enrollment	PIT	Initial Evaluation	Special Education Evaluation	Special Education Eligibility
White	13358	1271	164	159	122
% of Total Population	(70%)	(59%)	(61%)	(61%)	(58%)
African American	4198	745	70	94	75
% of Total Population	(22%)	(35%)	(26%)	(34%)	(36%)
Other Ethnicities	1528	121	21	11	12
% of Total Population	(8%)	(6%)	(8%)	(5%)	(6%)
Unidentified	0	22	12	0	0
% of Total Population	(0%)	(1%)	(4%)	(0%)	(0%)
Total	19084	2159	267	264	209
% of Total Population	100%	100%	100%	100%	100%

PIT records evaluation. For Research Questions 2 and 3, data were obtained from 270 PIT records randomly selected from a district-wide database. Due to the substantially fewer students identified as Hispanic, American Indian/Pacific Islander, Asian American, or Multicultural, they were excluded from the analyses for questions two and three; therefore, the final sample included 251 PIT records (See Table 3) of students identified as either African American or White. These records included data for students from kindergarten through twelfth grades who were referred for PIT assistance, an initial comprehensive psychoeducational assessment, special education eligibility, or found

eligible for special education services. Students included in this sample progressed through the eligibility process in the order described above. Some students by-passed the PIT process and their initial stage was a comprehensive psychoeducational evaluation or referral to special education; however, these records were excluded from the PIT records evaluations.

Table 3.

Demographic Data for PIT Records Analyzed with Likert Scale

Variable	n	Percent
Race		
White	153	61.0
African-American	98	39.0
Gender		
Male	152	60.6
Female	99	39.4
Referred for Initial Evaluation		
No	198	78.9
Yes	50	19.9
Referral for Special Education		
No	210	83.7
Yes	37	14.7
Special Education Placement		
No	217	86.5
Yes	30	12.0

Note. n=number of PIT records

Of these records, 153 were of students identified as White, while 97 were records of students identified as African American. The sample included PIT records of 152

males and 99 females. The majority of the records were from elementary schools, representing 79% of the sample (*n*=197). Middle school records and high school records represented 13% and 8% of the sample, respectively. Information regarding the referral concerns was also gathered. Academic concerns were indicated in 59% of the sample (*n*=148), behavioral concerns represented 10% of the sample (*n*=24), and PIT records with both types of concerns represented 31% of the sample (*n*=78). Referrals for initial psychoeducational evaluations were documented in 20% of the records (*n*=50), while 80% of the records (*n*=198) contained no indication of referral for initial psychoeducational evaluation. Referral for special education eligibility was documented in 15% of the records (*n*=37), while 85% (*n*=210) did not contain documentation indicating that a referral for special education had been made. Lastly, 12% (*n*=30) of the PIT records indicated that students were found eligible for special education services.

Instrument

The instrument used to review the PIT records was developed by Telzrow et al., (2000). The Likert Scale and Scoring Rubric for Problem Solving Components (Telzrow et al.,) was used to evaluate PIT implementation. The instrument included eight components of the problem-solving model, with ratings operationally defined by the scoring rubric (see Table 4 for instrument). Possible scores ranged from 1 to 5 on each component. A score of 1 indicated that there was very little to no documented evidence of existence of any elements of a particular component, while a score of 5 indicated that there was well-documented evidence of particular elements of the component. The demographic sheet elicited the following information: name, grade, school, gender, ethnicity, referral concern (academic, behavioral, both), whether a referral for initial

evaluation was made (yes/no), whether a referral for special education evaluation was made (yes/no), and whether special education placement was recommended (yes/no).

Table 4

Likert Scale and Scoring Rubric for Problem Solving Components

Problem Solving Component	Likert Scale and Scoring Rubric
1. Behavioral definition of the target behavior	1 = target behavior is not identified 2 = intermediate between 1 and 3 3 = area of concern is identified (e.g., reading, attendance), but concern is defined in a nonbehavioral terms (e.g., “trouble with”, “weakness in,” etc 4 = intermediate between 3 and 5 5 = concern is described entirely in measurable, observable, and behavioral terms and is related to the student’s academic or behavioral performance
2. Direct measure of the student’s behavior in the natural setting prior to intervention implementation (baseline data)	1 = estimates or general descriptive information about student’s behavior; no baseline data 2 = intermediate between 1 and 3 (e.g., raw samples that are not summarized or quantified) 3 = indirect measures of the student’s behavior are provided (e.g., scores on standardized tests) 4 = intermediate between 3 and 5 5 = multiple samples of direct measures of student behavior in the natural setting are reported (e.g., three baseline probes in reading,) [Note: unless there are three data points on graph or a reference to median scores for baseline, assume no multiple samples]

Problem Solving Component	Likert Scale and Scoring Rubric
3. Clearly identified goal or target behavior for student	1 = no specific goal or objective is identified 2 = intermediate between 1 and 3 3 = a goal has been identified, but no information is provided about what level or accuracy or by what date it should be accomplished (neither date nor level, or date only) 4 = intermediate between 3 and 5 5 = the desired goal or target behavior has been established with a specific, clearly stated criterion level (how much and when)

Problem Solving Component	Likert Scale and Scoring Rubric
4. Hypothesized reason for problem	1 = interventions are designed without consideration of the possible factors related to the concern; no hypothesized reason for the problem 2 = intermediate between 1 and 3 3 = some possible factors related to the concern beyond child characteristics are considered 4 = intermediate between 3 and 5 5 = a thorough analysis of possible factors related to the concern has been conducted, beyond child characteristics, for a 5, assume several areas are thoroughly considered and that one or more of these drives the intervention

Problem Solving Component	Likert Scale and Scoring Rubric
5. Systematic step-by-step intervention plan	1 = no systematic intervention plan; vague general information about interventions 2 = intermediate between 1 and 3 3 = a plan of action is devised, but not all specifics are provided 4 = intermediate between 3 and 5 ("what" in intervention warrants higher score than where, when) 5 = a plan of action is devised which specifies what will occur, who will do it, where the intervention will occur, and when the intervention will be implemented.
6. Evidence that intervention was implemented as designed: treatment integrity	1 = no information about treatment integrity is provided 2 = intermediate between 1 and 3 (e.g., a name is listed on treatment integrity line on worksheet) 3 = vague, general statement about the integrity of the intervention provided (e.g., an assertion that the intervention occurred) 4 = intermediate between 3 and 5 5 = data about the integrity of the intervention are provided (e.g., attendance records for tutoring, copies of home notes, dates and running record of what occurred during the intervention)
7. Data indicating student response to intervention	1 = no monitoring of the intervention is evident 2 = intermediate between 1 and 3 (score when there is a description of student response to intervention, but no evidence of data) 3 = some quantifiable data are reported about the student's response to intervention, but the results are not graphed 4 = intermediate between 3 and 5 5 = results of the intervention are collected on a consistent schedule over a period of time and are depicted on a graph

Problem Solving Component	Likert Scale and Scoring Rubric
8. Direct comparison of the student's postintervention performance with baseline data	1 = no comparison is made between the student's postintervention performance is compared with baseline data 2 = intermediate between 1 and 3 3 = the student's postintervention performance is compared with baseline data through the use of quantifiable data that are not graphed (no baseline, no graph, but data supplied) 4 = intermediate between 3 and 5 (e.g., no baseline, but graph) 5 = Evidence the student's performance improved significantly from baseline and target goal was achieved or exceeded.

Telzrow et al. (2000) found statistically significant correlations between certain components of the scale and student outcomes. "Behavioral Definition of Problem", "Baseline Data", "Clearly Identified Goal", "Systematic Intervention Plan", "Data Indicating Student Response to Intervention", and "Comparison of Student Response to Baseline" were found to have moderate correlations with student outcomes (e.g., r=.16 to .24; Telzrow et al., 2000). Because multiple raters were utilized during the study, Telzrow et al. (2000) also reported rater agreement indices (RAIs) for the problem solving components, which ranged from .97 to .87.

Procedure

Population demographics of students within special education process. As part of a district-wide initiative for the investigation of the disproportionate representation of minorities in special education, ethnicity data for the students within the special education process were extracted from district-wide databases and used to compute risk

ratios. This produced four sets of risk ratios for the investigation of Research Question 1. The risk ratios examined the representation of African American students in comparison to other students at all four phases of the special education process. Ethnicity information was initially provided by parents, who identified the race of their student by choosing one of the following categories: American Indian/Alaskan Native, Hispanic, Pacific Islander/Asian, Black, White, or Multiracial.

PIT records evaluation. Prior to the evaluation of PIT records with the Likert scale and Scoring Rubric (Telzrow et al., 2000), the researcher and two specialist-level school psychologists received 12 hours of training applying the instrument to PIT files not included in this study. The PIT records, which were randomly selected by a computer program, were assigned identification numbers for anonymity and documents linking coded data to identifiable records were maintained in a locked cabinet in the office of the district-level PIT coordinator. From the PIT records assessed with the Likert Scale and Scoring Rubric (e.g., Research Questions 2 and 3; Telzrow et al.), the following information was obtained: school, grade, race, gender, referral concerns, whether or not a referral for an initial evaluation had been, whether or not a referral for special education had been made, and whether or not the student was found eligible for special education. For PIT records evaluations, only those records of African American and White students were reviewed. For the purpose of data analysis, ethnicity was coded as 0 for White students and 1 for African American students. For the phases of the special education process (i.e., initial referral, special education referral, and special education placement), the presence of the conditions were coded as 1, while the absence of these conditions were coded as 0. On the Likert Scale and Scoring rubric, a rating of 1 was

assigned when there was no information available about a particular component. Separate ratings were obtained for the components of the problem-solving process.

General Information about Data Analysis

The Office of Special Education Programs (OSEP) and WESTAT, a research corporation, recommended that for assessing disproportionality, the risk ratio is the best single measurement (OSEP, 2003a). In order to compute the risk ratio, also referred to as odds ratios or relative risk ratios in the literature, risk indices—which is the proportion of group representation—are first calculated by dividing the number of students from the ethnic group of interest served in each phase by the their group's total enrollment in the district. The risk indices are then compared, resulting in the risk ratio (See Table 5). For the purpose of the current analyses, the comparison group was operationally defined as all other students who were not identified as a member of the target ethnic group. A risk ratio of 1.00 indicates no difference between the risk of the target racial/ethnic group and the comparison group (i.e., the members of the target racial/ethnic group are no more likely than students from all other racial/ethnic groups to be represented in a certain phase). A risk ratio greater than 1.00 indicates the risk for the racial/ethnic group is greater than the risk for the comparison group, while a risk ratio less than 1.00 indicates the risk for the racial/ethnic group is less than the risk for the comparison group.

A correlations matrix was computed to determine the problem-solving components that demonstrated significant relationships with independent factors (e.g., ethnicity, initial evaluations, special education referrals; see Table 6). The components that demonstrated significant relationships with the factors and those components indicated in the research as having a significant impact on student outcomes (e.g., Elliott

& Sheridan, 1992; Iverson, 1999; Telzrow et al., 2000) were used to investigate differences in PIT implementation. Separate two-way ANOVAs were computed with initial evaluation (yes/no) or special education referral (yes/no) and ethnicity as between-subjects factors and the components of the Likert scale (Telzrow et al., 2000) as dependent variables.

Table 5

Methods for Assessing Risk in PIT Phases

Measurement Index	Description	Formula
Composition Index	Proportion of students by ethnicity/race within each phase	(Number of students from racial/ethnic group/ Total Number of students receiving assistance) * 100
Risk Index	Likelihood of group representation within each phase	(Number of students from racial/ethnic group in category / Total number of enrolled students in district from racial/ethnic group) * 100
Risk Ratio	Comparison of risk indices between two ethnic/racial groups per phase	Risk for ethnic group/ Risk for comparison group

Table 6

Intercorrelations between Problem Solving Components and Ethnicity, Referrals for Initial Evaluations, Special Education Eligibility, and Special Education Placement

	1	2	3	4	5	6	7	8	9	10	11	12
1. Behavioral Definition	--	.54*	.49**	.29**	.43**	.43**	.49**	.43**	.01	.05	-.13*	-.05
2. Baseline Data		--	.51**	.28**	.50**	.43**	.49**	.48**	.06	.06	-.09	-.04
3. Clearly Identified Goal			--	.21**	.64**	.32**	.61**	.59**	-.06	.01	-.03	-.05
4. Hypothesized Reason for Problem				--	.21**	.31**	.22**	.16*	.06	.42**	.26**	.33**
5. Systematic Intervention Plan					--	.49**	.61**	.60**	-.06	-.04	-.12	-.12
6. Treatment Integrity						--	.56**	.49**	-.05	.10	-.00	.02
7. Data Indicating Student Response to Intervention							--	.79**	-.05	.04	-.02	-.04
8. Comparison of Student Performance with Baseline								--	-.12	.05	-.04	-.04
9. Ethnicity									--	--	--	--
10. Initial Referral										--	--	--
11. Special Education Referral											--	--
12. Special Ed. Placement												--

*p < .05. **p < .01.

Significant correlations between the components of the problem-solving process and phases of the special education process ranged from a negative correlation of -.13 (e.g., “Behavioral Definition” and “Special Education Referral”) to a positive correlation .42 (e.g., “Hypothesized Reason for Problem” and “Initial Evaluation”; See Table 6). A weak, yet statistically significant, negative relationship between “Behavioral Definition” and “Special Education Referral” was found. This indicates that as ratings on the “Behavioral Definition” component increased, students were less likely to be referred for special education. Based on the information obtained from the correlation analyses and

information in the literature, the final ANOVA analyses included the following quality indicators: “Behavioral Definition”, “Hypothesized Reason for Problem”, “Systematic Intervention Plan”, “Treatment Integrity”, and “Data Indicating Student Response to Intervention”. Also, a less stringent significance level (e.g., *p*=.10) was used for hypothesis testing due to the exploratory nature of this research (Minium, Clarke, & Coladarci, 1999).

As in Telzrow et al. (2000) rater agreement was assessed through RAIs, which measures the degree to which coders agree on their ratings in reference to the possible range of ratings for categorical or continuous data (Burry-Stock et al., 1996; See Equation 1). The index ranges from 0 to 1, with 1 indicating perfect agreement. The RAI was selected because it measures the degree to which coders agree on particular ratings and does not penalize the two coders for varying in their coding strategies (Burry-Stock, Shaw, Laurie, & Chissom, 1996). The RAI was also selected for its simplicity in interpretation and efficiency in calculation. RAIs were calculated separately for each of the quality indices on the Likert Scale and Scoring Rubric (Telzrow et al.).

$$RAI = \frac{1}{N}\sum N\left(\frac{1}{K}\sum K\left[\frac{1}{M}\sum M\left(1-\frac{\left|R_{mkn} - a\left(R_{mkn}\right)\right|}{I-1}\right)\right]\right) \qquad (1)$$

The basic formula for calculating the RAI is: RAI = 1 - (R1 - R2/ (I - 1)), where R1=coder A's rating, R2 = coder B's rating, and I = the range of the scale (in this case, I = 5). See Equation 1 for final formula. For RAI calculations, *a* represents the average, *K* = 1 for the component being rated, *N* = 20 for the number of cases evaluated, *M* = 2 for the number of raters, and *I* = 5 for the five-point Likert scaling of the items. RAIs were calculated for the components of the Likert Scale and Scoring Rubric for Problem

Solving Components (Telzrow et al.), comparing the independent ratings assigned by the raters and the first author. Twenty PIT records were randomly selected from the sample for calculation of RAIs (See Table 7). RAIs for the items on the Likert Scale ranged from .69 to .80, indicating moderate to high levels of rater agreement. The results are presented in the next chapter.

Table 7

Rater Agreement Indices (RAIs) for Problem-Solving Components

Problem-Solving Component	Rater Agreement Index
1. Behavioral Definition	.78
2. Baseline Data	.69
3. Clearly Identified Goal	.80
4. Hypothesized Reason for Problem	.74
5. Systematic Intervention Plan	.73
6. Treatment Integrity	.75
7. Data Indicating Student Response to Intervention	.80
8. Comparison of Student Performance with Baseline	.77

CHAPTER IV

RESULTS

Initial Analyses

Impact of PITs on Disproportionality

Research Question 1. What were the risk ratios for students by ethnic/racial group for (a) referral to PITs, (b) referral for initial psychoeducational evaluation, (c) special education referral, and (d) special education placement?

Table 7 presents the risk ratios for the four phases of the special education process. The risk ratios compare the risk of students of a specific ethnic group to that of all other students not identified as being a member of the target ethnic group. The use of "all other students" as the comparison group "enables risk ratios to be calculated for all racial/ethnic groups and allows the risk ratios to be calculated in the same manner for all racial/ethnic groups" (Bollmer, Bethel, Garrison-Mogren, Brauen, 2007, p. 188). Some researchers use only White students as the comparison group because they represent the mainstream culture; however, Westat (2003) asserts that there are negligible differences between risk ratios calculated with either denominator. The debate about which group represents the most appropriate denominator (i.e. "White students" or "All other students") remains unresolved in the literature (Bollmer et al., 2007). Since risk ratios are difficult to interpret when they are based on small numbers of students either in the racial/ethnic group of interest or the comparison group, students from other ethnic groups (e.g., Asian American, Hispanic, American Indian/Pacific Islander, Multicultural) were combined into the group, "Other Ethnicities", to decrease substantial variations in the magnitude of the risk ratios (OSEP, 2003).

As predicted African American students were more likely than other students to be represented at all phases of the special education process. As noted in Table 8, African American students are nearly twice as likely as other students to be referred to PITs, while others students are significantly less likely to be referred to PITs (*i.e.,* risk ratio White=.64; risk ratio Other = .69). At the initial evaluation phase, African Americans are 34% more likely than members of other ethnic groups to be referred for initial comprehensive evaluations. They have nearly a 70% greater chance than others to be referred for a special education evaluation and a 98% greater chance than others to be placed in special education. The risk ratios for Whites and other minority students (i.e., Other Ethnicities) were substantially less than 1 at all phases, except the "Initial Evaluation" phase. At this phase of the special education process, minority students (other than African Americans), were more likely to received evaluations (i.e., risk ratio = 1.03), while White students had a substantially lower risk than all other students to receive an evaluation (risk ratio = .77).

Table 8

Risk Ratios for Racial Groups for Phases of Special Education Eligibility 2004-2005 School Year

	District Enrollment	PIT	Initial Evaluation	Special Education Evaluation	Special Education Eligibility
White	13358	.64 (n=1271)	.77 (n=164)	.65 (n=159)	.55 (n=122)
African American	4198	1.91 (n=745)	1.34 (n=70)	1.96 (n=94)	1.98 (n=75)
Other Ethnicities	1528	.69 (n=121)	1.03 (n=21)	.50 (n=11)	.70 (n=12)
Total	19084	2128	255	264	200

PIT Case Evaluation

Chi-Square tests were used to determine whether statistically significant relationships existed between the factors (i.e., ethnicity, initial evaluations, special education referrals, and special education placements). For the purpose of data analysis, ethnicity was coded as 0 for White students and 1 for African American students. For the phases of the special education process (i.e., initial referral, special education referral, and special education placement), the presence of the conditions were coded as 1, while the absence of these conditions were coded as 0. To determine if the factors were related, the level of significance for the Pearson chi-square was set to .10. The results of the chi-square analyses indicated a significant relationship between ethnicity and special education placement ($\chi^2[1, N = 247] = 4.33, p < .04$), ethnicity and initial evaluations (χ^2 $[1, N = 248] = 4.37, p < .04$), initial evaluations and referral for special education (χ^2 $[1, N = 247] = 152.94, p < .001$), initial evaluations and special education placements(χ^2 $[1, N = 247] = 126.75, p < .001$), and special education referrals and special education placements (χ^2 $[1, N = 248] = 178.91, p < .001$). The results of the chi-square analyses indicated that African American students were likely to be referred for initial evaluations and found eligible for special education. Chi-square results also indicated that a significant association existed between initial evaluations, special education referrals, and special education placements, indicating that students who received initial evaluations were more likely to be referred for special education and found eligible for special education services (i.e., special education placement). Also, the results indicated that students who were referred for special education were likely to be found eligible for special education services.

On the Likert Scale and Scoring rubric, a rating of 1 was assigned when there was no information available about a particular component. Overall, the PIT records assessed showed low fidelity to the components of the problem-solving process (See Table 9). Components of the problem-solving process with the highest mean fidelity scores were "Clearly Identified Goal" (*M*=3.15, *SD*= 1.27), "Behavioral Definition" (*M*=3.00, *SD*=1.07), and "Baseline" (*M*=2.65, *SD*=1.19). The ratings on the "Clearly Identified Goal" component indicated that on average PITs established goals for student achievement, yet did not establish specific criteria for progress. The ratings on the "Behavioral Definition" component indicated that on average PITs identified a specific area of concern, but failed to provide operational definitions for the problem. The ratings on the "Baseline Data" component showed that PIT records on average included unanalyzed work samples, grade averages on report cards, or progress reports grade averages as measurement of pre-intervention or baseline functioning.
"Treatment Integrity" (*M*=2.10, *SD*=1.17) and "Comparison of Student Performance with Baseline" (*M*=2.28, *SD*=1.16) were the components of the problem-solving process with the lowest fidelity scores. Ratings on the "Treatment Integrity" component indicated that on average the PIT records contained vague information indicating that the classroom teacher was responsible for implementing the suggested intervention plan; however, artifacts, data, or anecdotal notes attesting to the implementation of the intervention as designed rarely appeared in the records. For the "Comparison of Student Performance with Baseline" component, PIT records on average included anecdotal information summarizing pre- and post-intervention functioning.

Table 9

Means and Standard Deviation of Ratings of Problem Solving Components

	N	Mean	SD
Behavioral Definition	251	3.00	1.07
Baseline Data	250	2.65	1.19
Clearly Identified Goal	250	3.15	1.27
Hypothesized Reason for Problem	250	2.42	1.17
Systematic Intervention Plan	250	2.41	1.12
Treatment Integrity	250	2.10	1.17
Data Indicating Student Response to Intervention	249	2.54	1.11
Comparison of Student Performance with Baseline	250	2.28	1.16
Total	251	23.54	7.36

Results of Factorial ANOVAs

The assumptions of ANOVA examined prior to the analyses included randomness, independent observations, homogeneity of variance, and normality. Randomness refers to the random selection of participants and independence refers to the uncorrelated nature of the observations. Stevens (1999) indicated that the most important assumption for ANOVA analyses is the independence of observations of the groups. Neither of these assumptions was of concern because of the methods employed in the current study.

The homogeneity of variance assumption refers to equal population variance means and violation of this assumption has minimal impact on the *F*-test when groups are equal (Huck, 2000). However, unequal sample sizes with unequal variances can affect the

F-test. Due to the unequal sizes of the groups in the current analysis, the homogeneity of variance assumption was tested using the Levene statistic. Based on the results of Levene test, in addition to using the *F*-test, the Welch's test was used for hypothesis testing when the homogeneity of variance assumption was violated because it does not assume equal population variances (Huck, 2000). Lastly, an examination of boxplots and probability plots indicated the current data fails to meet the normality assumption as well. However, because nonnormality is indicated as having only a minimal effect on type I errors in ANOVA analyses (Stevens, 1999), this violation was not corrected. Results of these tests are reported below.

Separate 2 X 2 ANOVAs were conducted on the problem-solving components that demonstrated significant correlations with independent conditions (e.g., ethnicity, initial evaluations, special education referrals; see Table 6) and on the problem-solving components indicated in the research as having a significant impact on student outcomes (e.g., Elliott & Sheridan, 1992; Iverson, 1999; Telzrow et al., 2000). The components of PIT implementation that were examined with factorial ANOVAs included: "Behavioral Definition", "Hypothesized Reason for Problem", "Systematic Intervention Plan", "Treatment Integrity", and "Data Indicating Student Response to Intervention". This produced ten sets of 2 x 2 ANOVAs, resulting in thirty *F*-tests. To prevent excessive Type I errors due to the large number of *F*-tests, the Holms procedure, a modification of the Bonferroni technique, was applied to the significance results of the ANOVAs. The Holms procedure was computed by dividing the desired study-wide Type I error risk (e.g., .10) by a function of the number of dependent variables and *p*-value rankings, which yielded a varying cutoff for significance for each *F*-test.

Research Question 2. What was the relationship between student ethnicity, initial evaluations, and PIT implementation?

For the conditions examined in Research Question Two, only one significant effect was found. Table 10 displays the group means, standard deviations, and sample sizes for PIT records by ethnicity and initial evaluation status on the “Hypothesis” component.

Table 10

Mean Ratings on Hypothesis Component by Ethnicity and Initial Evaluation Status

	Ethnicity					
	African Americans			Whites		
Initial Evaluation	Mean	SD	N	Mean	SD	N
Yes	3.37	1.37	25	3.45	1.31	24
No	2.20	.85	71	2.15	1.06	127

A significant main effect was found for initial evaluation condition, with a Holms adjustment applied for the “Hypothesized Reason for Problem” component (See Table 11); however, the Levene's test obtained significance [F (1, 245) = 4.99, p = .00), indicating that group variances are unequal (Stevens, 1999). Due to the violation of the homogeneity of variance assumption, Welch’s test was used to verify the significance of the main effect for the “Initial Evaluation” factor on the “Hypothesis Reason for Problem” component (See Table 12). The Welch’s statistic, which is very conservative as the differences between sample sizes increases, as is the case in this study, supported the *F*-test.

Table 11

ANOVA Results for Ethnicity and Initial Evaluations on Hypothesis Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	η^2
Ethnicity	.01	1	.01	.00	.92	.00
Initial Evaluation	59.12	1	59.12	51.42***	.00	.18
Ethnicity * Initial Evaluation	.18	1	.18	.16	.69	.00
Error	279.43	243	1.15			

*p < .10, ***p* < .05, *** *p* < .01

Table 12

Welch's Test for Verifying Main Effect for Initial Evaluations Factor on Hypothesis Component

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	60.80	1	60.80	53.26***	.00
Within Groups	279.64	245	1.14		
Total	340.44	246			

*p < .10, ***p* < .05, *** *p* < .01

On average, PIT records for students who received initial evaluations (*M*=3.42, *SD*=1.33) [F(1, 243) = 51.42, p <.01] received higher ratings on this component of problem-solving than those records of students not referred for initial evaluations (*M*=2.17, *SD*=.99). Although there was a statistically significant difference found on the "Hypothesis" component between PIT records for students who received an initial

evaluation and PIT records of students that did not, the magnitude of this difference was small (e.g., partial eta squared = .18).

Summary ANOVA analyses with nonsignificant results are included in Table 13 through Table 16. These results indicated that there were no significant main effects or interaction effects for ethnicity and initial evaluation status on any of the other components examined.

Table 13

ANOVA Results for Ethnicity and Initial Evaluations on Behavioral Definition Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.34	1	.34	.29	.59
Initial Evaluation	.67	1	.67	.57	.45
Ethnicity * Initial Evaluation	1.21	1	1.21	1.04	.31
Error	284.68	244	1.17		

*p < .10, ***p* < .05, *** *p* < .01

Table 14

ANOVA Results for Ethnicity and Initial Evaluations on Systematic Intervention Plan Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.24	1	.24	.19	.66
Initial Evaluation	.37	1	.37	.29	.59
Ethnicity * Initial Evaluation	.39	1	.39	.31	.58
Error	304.87	243	1.26		

*p < .10, ***p* < .05, *** *p* < .01

Table 15

ANOVA Results for Ethnicity and Initial Evaluations on Treatment Integrity Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.28	1	.28	.20	.65
Initial Evaluation	3.61	1	3.61	2.64	.11
Ethnicity * Initial Evaluation	.49	1	.49	.36	.55
Error	331.95	243	1.37		

*p < .10, ***p* < .05, *** *p* < .01

Table 16

ANOVA Results for Ethnicity and Initial Evaluations on Data Indicating Student Response to Intervention Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.52	1	.52	.42	.52
Initial Evaluation	.90	1	.90	.72	.40
Ethnicity * Initial Evaluation	.53	1	.53	.43	.51
Error	301.08	242	1.24		

*p < .10, ***p* < .05, *** *p* < .01

Research Question 3. What was the relationship between student ethnicity, special education referral, and quality of PIT implementation?

For the conditions examined in Research Question Three, one significant effect was found. Table 17 displays the group means, standard deviations, and sample sizes for PIT records by ethnicity and special education referral status on the “Hypothesis” component. A significant main effect was found for special education referral condition, with a Holms adjustment applied for the “Hypothesized Reason for Problem” component (see Table 18). The Levene's test did not obtain significance, indicating that group variances were equal (Stevens, 1999); therefore, the *F*-test results are reported.

Table 17

Mean Ratings on Hypothesis Component by Ethnicity and Special Education Referral Status

	Ethnicity					
	African Americans			Whites		
Special Education	Mean	SD	N	Mean	SD	N
Yes	3.44	1.34	18	3.22	1.26	18
No	2.29	.96	78	2.22	1.33	132

Table 18

ANOVA Results for Ethnicity and Special Education Referrals on Hypothesis Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	η^2
Ethnicity	.65	1	.65	.53	.47	.00
Special Education	35.21	1	35.21	28.70***	.00	.11
Ethnicity * Special Education	.18	1	.18	.14	.71	.00
Error	296.88	242	1.23			

*p < .10, ***p* < .05, *** *p* < .01

On average, PIT records for students who received special education referrals (*M*=3.33, *SD*=1.29) [F(1, 242) = 28.70, p <.01] received higher ratings on this component of problem-solving than those records of students not referred for special education (*M* = 2.25, *SD* = 1.07). On average, PIT records for students who were referred for special education contained a more thorough analysis of factors that could be contributing to the referral concern (e.g., Hypothesis component). Although there was a statistically significant difference found on the "Hypothesis" component between those PIT records for students who were referred for special education and PIT records of students that did not, the magnitude of this difference was small (e.g., partial eta squared = .11).

Table 19 displays the group means, standard deviations, and sample sizes for PIT records by ethnicity and special education referral status on the "Systematic Plan" component.

Table 19

Mean Ratings on Systematic Plan Component by Ethnicity and Special Education Referral Status

	Ethnicity					
	African Americans			Whites		
Special Education	Mean	SD	N	Mean	SD	N
Yes	2.22	1.11	18	1.92	1.14	18
No	2.33	1.10	78	2.52	1.11	132

The Levene's test did not obtain significance on the 2 x 2 ANOVA examining the conditions of ethnicity (African American/White) and special education referrals (yes/no)

on the "Systematic Plan" component, indicating that group variances were equal (Stevens, 1999); therefore, the *F*-test results are reported (See table 20) Statistically significant results for the special education main effect became nonsignificant with the application of the Holms procedure. This revealed that there were no statistically significant differences between the plans found in the PIT records for students of differing ethnicity or between the records of those students who were eventually referred to special education and those that were not.

Table 20

ANOVA Results for Ethnicity and Special Education Referrals on Systematic Plan Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	η^2
Ethnicity	.09	1	.09	.07	.79	.00
Special Education	3.94	1	3.94	3.19*	.08	.01
Ethnicity * Special Education	1.92	1	1.92	1.55	.21	.00
Error	299.27	242	1.24			

*p < .10, ***p* < .05, *** *p* < .01

Summary ANOVA results for the analyses with nonsignificant results are included in Table 21 through Table 23. These results indicated that there were not significant main effects or interaction effects for ethnicity and special education referral

on any of the other components examined. Overall, the analysis indicated that there were few statistically significant relationships between the conditions (e.g., ethnicity, initial evaluation status, special education referral status) and the problem-solving components.

Table 21

ANOVA Results for Ethnicity and Special Education Referrals on Behavioral Definition Component

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.00	1	.00	.00	.96
Special Education	.78	1	.78	.679	.41
Ethnicity * Special Education	.10	1	.10	.08	.77
Error	281.69	243	1.16		

*p < .10, ***p* < .05, *** *p* < .01

Table 22

ANOVA for Treatment Integrity Component, Ethnicity, and Special Education Referrals

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.06	1	.06	.04	.84
Special Education	.26	1	.26	.19	.66
Ethnicity * Special Education	.30	1	.30	.22	.64
Error	331.88	242	1.37		

*p < .10, ***p* < .05, *** *p* < .01

Table 23

ANOVA for Ethnicity and Special Education Referrals on Data Indicating Student Response to Intervention Component

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Ethnicity	.08	1	.08	.07	.80
Special Education	.39	1	.39	.32	.57
Ethnicity * Special Education	.55	1	.55	.45	.50
Error	295.65	241	1.23		

*p < .10, ***p* < .05, *** *p* < .01

CHAPTER V

DISCUSSION

This study was designed to describe the current state of disproportionality in one southeastern school district. It was also designed to determine if differences existed in PIT implementation based on, (a) student ethnicity (e.g., African Americans and White), (b) between students who were referred for initial evaluations and those who were not, (c) between students who were referred for special education evaluations and those who were not, or if differences existed in PIT implementation (d) between students who were placed in special education programs and students who were not. Prior studies have indicated that disproportionality is a nationwide problem that can be reduced with the implementation of a prereferral intervention process, such as PITs (Gravois & Rosenfield, 2006; Kovaleski, 1999; NABSE & ILLIAD, 2002). By maintaining high fidelity to the problem-solving process, PITs can reduce referrals for special education (Flugum & Reschly, 1994) and thus reduce disproportionality (Kovaleski, 1999; NABSE & ILLIAD, 2002). However, the generalizability of most results demonstrating PITs effectiveness at reducing special education referrals is questionable due to the significant differences in PIT implementation as suggested in the research and those found in applied settings (e.g., public school system) (Fuchs, Fuchs, Harris, & Roberts, 1996; Gravois & Rosenfield, 2006; Yocom & Staebler, 1996). Results from the current research are in many ways similar to findings of previous studies (Gibb, Rausch, & Skiba, 2006; Rock & Zigmond, 2001). African American students in this district were significantly more likely to be represented at every phase in the special education process, beginning with the prereferral process. Throughout the special education process, African Americans were

twice as likely as other students to be represented. These findings offer some information about why the overrepresentation problem exists in this district. As shown in Hosp and Reschly (2004), a larger proportion of minority students are referred for assistance, which ultimately leads to special education placement.

Also similar to previous research, the current study found relationships between elements of the prereferral problem solving stages and special education (Flugum & Reschly, 1994; Gutkin et al., 1988; McDougal, Clonan, & Martens, 2000). Specifically, better implementation of the "Behavioral Definition" component was linked to fewer special education referrals. This finding adds support to the assertions in the literature about the importance of proper problem identification in solving problems (Bergan & Tombari, 1975, 1976). In addition, the "Hypothesized Reason for Problem" component was linked to an increased likelihood of initial evaluations, special education referrals, and special education placements. These findings indicated that as more contextual hypotheses were formed about the causes of the students' problems, they were more likely to progress through the special education process. This is believed to be linked to the fact that extensive hypothesis formation most often occurred when educational specialists (e.g., school psychologists, speech pathologists, occupational therapists, special educators) were consulted. These specialists tended to be only consulted with when the PITs were unable to effect observable change. These components were unrelated to student ethnicity and suggest that implementation of the components were commensurate.

Statistically significant associations were also observed between ethnicity and initial evaluations and between initial evaluations, special education referrals, and special education placements. This supports previous findings (Algozzine, Ysseldyke, & Christenson, 1983; Hosp & Reschly, 2003) that linked referrals for assistance or assessment to special education placement. Although, in this district receiving an initial evaluation was meant to deter a child from special education placement, the results of the current study show that these students are likely to be referred and placed in special education.

Lastly, this study demonstrated that the PIT problem-solving process, as implemented in the cases reviewed, as typically implemented with poor fidelity to models described in the literature. Only the "Hypothesized Reason for Problem" component yielded statistically significant differences between students who received initial psychoeducational evaluations and those who were not and between students who were placed in special education and those who were not.

Findings and Implications

The Effectiveness of PITs on Diminishing Disproportionality

The disproportionality literature indicates that minority students are at a substantially higher risk of being identified throughout the special education process (Gibbs et al., 2006; Gordon, 1980; Gravois & Rosenfield, 2006; NRC, 2002). The current findings confirm the hypothesis that African American students were at substantially greater risk than other students at all phases (See Table 7). Although the formal special education assessment/identification process has received much attention throughout the years as a major culprit in disproportionality, the results of this study demonstrate that

disproportionality exists prior to special education assessment (e.g., Gordon, 1980; Rock & Zigmond, 2001).

Gravois and Rosenfield (2006) demonstrated that PIT implementation could substantially reduce the risk of special education placement for minority students. The results of the current study are not consistent with their findings. Gravois and Rosenfield (2006) showed that at schools with Instructional Consultation (IC) teams, minority students were substantially less likely than others to be referred or placed in special education (e.g., risk ratio =.66), while the current study shows that African American students referred to PITs were substantially more likely than other students for special education referral and placement (e.g., risk ratios= 1.70 and 1.90, respectively). However, there are important differences between PIT implementation between the current study and the Gravois and Rosenfield (2006) study. The Instructional Consultation (IC) Teams, received extensive support and training over five years from the University of Maryland, while training and support for PIT in the studied district was provided inconsistently by specialist-level school psychologists and educators who had no specific expertise in PIT implementation. It is logical to suspect that the quality, frequency, and duration of the training initiatives were quite different, with the university-based training assumed to be much more effective and extensive than the training provided to the PITs in the current study. The substantial differences between the results of the two studies may be largely explained by this important distinction.

Another difference between the two studies is the model of PIT that was implemented. In the IC team model, the teacher does not participate in group problem-solving teams, instead they receive direct consultation and support from only one of the

team members. PITs in the studied district were group-problem solving teams. The teacher was expected to independently carry out the recommendations of the team. Consequently, the IC team model, a model of direct consultation, may provide more support for teacher implementation of recommendations than do the PITs used in the studied district. Providing the teacher with more direct support may lead to higher fidelity of implementation of interventions (Lane et al., 2004).

Although, the quality of the prereferral team process and training may be important, Rock and Zigmond (2001) posed a very important additional concern about whether the pre-referral process was substance or symbolism. They examined the outcomes (e.g., retention, promotion, referral for special education) of students 2 years after PIT implementation (e.g., Intervention Assistance Teams [IATs]) to determine if PIT services deflected or merely delayed referrals for special education. The IAT model was similar to the model implemented in the current study, using a group-problem solving approach to create and design interventions. Extensive training on the IAT process was provided to the school district. After the first year of IAT implementation, 36% of the students in the process were referred to special education, whereas after the second year of IAT implementation, 44% of the students who had been receiving support for two years were referred to special education. Rock and Zigmond (2001) concluded that African American students were more likely to be referred and found eligible for special education than White students, that the disproportionality observed in the traditional referral process was also reflected in the PIT process, and that the IST process *delayed* but did not prevent special education services for some students. They described their findings as indicative of the inability of PIT process to affect meaningful changes in

the educational outcomes of at-risk students. Although the current study reviewed cases in just one year and the teams had been in place for several years, the current findings are similar in that PITs had a limited impact on reducing referrals to special education, for at-risk students across ethnic groups.

Quality PIT Implementation

Among others, Kovaleski (1999), Gravois and Rosenfield (2006), and Burns and Symington (2002) found that proper implementation of PITs can significantly reduce referrals to special education. However, in almost every case in the literature, the quality of the PIT process implementation is linked to researcher and university support. This study aimed to investigate the quality of implementation of the PIT process in a regular school district that had no such support. Consistent with the findings Telzrow et al. (2000) and other researchers (e.g., Burns et al., 2005; Kovaleski, 1999; Rock & Zigmond, 2001), the current study found that PIT process implementation was inconsistent and often poor (See Table 8). Kovaleski (1999) argued that "half hearted efforts at IST implementation are no better for at-risk students than what is traditionally practiced at non-IST schools" (p.180). The results presented here support that assertion. However, PIT implementation in the current district was not always poor.

Relationships between Components of Quality PIT Implementation, Ethnicity, and the Special Education Process

The literature on behavioral consultation indicates that some components of the problem-solving process (e.g., Problem Identification) are more important to problem solution than others. It has long been demonstrated that defining a problem in observable, behavioral terms is highly related to being able to intervene successfully (e.g., Bergan &

Tombari, 1975, 1976). The current study found a small, yet significant negative correlation between "Behavioral Definition" and special education referrals (e.g., -.13). This indicated that as PIT referral concerns became more operationally defined, students were less likely to be referred to special education.

In fact, information from the behavioral consultation literature indicates that the most critical aspect of problem-solving is problem identification (e.g., Behavioral Definition) and it also supports the importance of the "Hypothesis" component because when teachers believe problems are the result of external, environmental factors, they are more likely to implement the process with integrity (Elliott & Sheridan, 1992). The results of the current study, in relation the "Hypothesis" component, are also significant because they demonstrate the tendency of educators to perceive problems as being within-child rather than an interaction of student characteristics with the learning environment. The ratings on the "Hypothesis" component in the current study indicated that a thorough analysis of the problem was not conducted and that hypotheses about the problem were mostly related to within-child deficits. Teachers quickly form inaccurate impressions, especially of black males (Irvine, 1990); therefore, one could easily surmise that minority students are especially at-risk for receiving lower quality PIT implementation. This perception can impact the PITs when designing, choosing, or implementing interventions. Rathvon (1999) asserted that teachers (Christenson et al., 1983; Medway, 1979) and school psychologists (Alessi, 1988) overwhelmingly attributed the cause of student problems to within-child deficits, which are likely to result in teachers not implementing interventions appropriately and increased referrals to special education. Knotek (2003) also emphasized that the decision making process can be

negatively impacted by bias, especially the problem identification and intervention phases. In a microethnographic study conducted in two schools, he found that in relation to minority students and low SES students, the PITs' focus changed from trying to objectively identify the problem to merely validating the teacher's experience. If SES or ethnicity confounds the ability of PITs to identify problem, how can appropriate interventions be chosen, designed, or implemented? The Response to Intervention (RTI) approach aims to ensure that all students, regardless of ethnicity or SES, have access to effective instruction. The RTI approach advocates for the delivery of high quality instruction, research-based interventions, and prompt identification of individuals with disabilities (Harris-Murri, King, Rostenberg, 2006) for all students.

The relationships between the components of quality PIT implementation, ethnicity, and the special education process were examined (See Table 9). There were no statistically significant relationships observed between ethnicity and any of the components of quality PIT implementation. Based on the criticism by some that public and special education systems are differentially beneficial across ethnic groups (e.g., Losen & Orfield, 2002), it was hypothesized that differential implementation would also be seen in the PIT process. However, the results did not indicate the existence of a relationship between ethnicity and any components of quality PIT implementation. Implementation was generally poor across groups.

Since PITs have been described as reducing referrals to special education, statistically significant correlations were anticipated between ratings on components of PIT implementation (e.g., Likert Scale and Scoring Rubric) and the special education process. In the current study only two components of PIT implementation were shown to

have statistically significant relationships with phases of the special education process. There were significant positive correlations between initial evaluation (e.g., .42), special education referral (e.g., .26), and special education placement (e.g., .33) and the "Hypothesis" component of PIT implementation.

Based on the research about quality PIT implementation, if the process had been implemented with greater fidelity, differences should have been observed between students who were referred and placed and those that were not. To assess if there were differences in PIT implementation for the groups (e.g., Whites and African Americans; students referred for initial evaluations and students not referred; students referred for special education evaluations and students not referred; students placed in special education and students not placed), factorial ANOVAs were conducted on the "Behavioral Definition", "Hypothesis", "Response to Intervention", "Treatment Integrity", and "Systematic Plan" components because of statistically significant correlations with the factors and because they were indicated in the literature as being particularly important in PIT implementation (e.g., Elliott & Sheridan, 1992; Iverson, 1999). Contrary to expectations, there were no statistically significant differences between the students who were referred to special education and that were not on the "Behavioral Definition", "Response to Intervention", "Treatment Integrity", and "Systematic Plan" components

However, significant differences were found on the "Hypothesized Reason for Problem" component for students who were referred and placed in special education versus those who were not, indicating that students who were referred and placed in special education received a more thorough analysis of possible contributing factors to

their difficulties. A possible explanation for this might be that more thorough analyses about the causes of these students' difficulties happened because the PITs obtained more direct involvement of specialists (e.g., school psychologists, special education teachers, speech/language pathologists) due to the severity of the students' problems. Experts (e.g., school psychologists, special education teachers, speech/language pathologists) are more likely to conduct a more thorough analysis of the contributing factors to the referral concern (Elliott & Sheridan, 1992; Iverson, 1999). One would intuitively surmise that involving an expert, especially during the prereferral process, would result in children being less likely to receive special education services; however, the robust relationship between referral for assessment and eligibility (Artiles & Trent, 1994; Ysseldyke and Algozzine, 1983) seems to indicate that involving an expert, in any capacity, is highly correlated with eventual special education placement.

The significant associations between initial evaluations, special education referrals, and special education placements seem to indicate that studying them individually may be redundant. Although in this district, initial evaluations are meant to be used as a tool for PITs to design intervention plans, rather than special education eligibility, receiving an evaluation was linked to special education eligibility. School psychologists should ensure that students who are referred for initial evaluations are provided systematic, empirically supported intervention plans to help remediate their areas of difficulty. As mentioned earlier, a more direct PIT consultation model may need to be implemented especially for students that are referred for initial evaluations. The current study was exploratory in nature and limited its investigation to ethnicity and school related variables and examining differences in group means.

Eitle (2002) demonstrated that many community and school district variables are significantly correlated with the disproportionality of African Americans in mild MR programs. Some of the variables identified in Eitle's research are present in the district and community in the current study: (a) the suburban community that this district serves can be described as having a predominately White, middle-class population, (b) having a significant proportion of African American adults (e.g., over 25 years old) with less than a high school diploma (e.g., 20%), and (c) having limited economic and political resources for African American citizens. In addition to these community variables, some district-level variables that are of importance include having recently been released from a court-ordered school desegregation decree, located in Southern states, having a substantially smaller African American student population than White student population, and having recently been cited by OCR for disproportionate placement of African Americans in the mild MR category, specifically. However, the findings of the current study show that the referral and placement rates vary significantly between ethnic/racial groups throughout the special education process. For example, the Risk Ratio for referrals to PITs for African Americans students was 1.91, while the Risk Ratio for White students was .64. Similarly, the Risk Ratio for special education eligibility for African Americans students was 1.96, while the Risk Ratio for White students was .65. This suggests that in most school districts emphasis must be placed on reducing referral rates at all steps in the process in order to reduce the overrepresentation of African Americans in special education. However, this goal may not be easily achieved because a substantial proportion of African American students have limited exposure to high quality instructional practices, may be impacted by socio-cultural structures that adversely

influence referral decisions and educational outcomes, and are disproportionately influenced by the conditions associated with poverty.

Disproportionality in special education is just one of many undesirable by-products of the social issues faced by at-risk students and their families. For example, some scholars believe that the effect of poverty largely contributes to the difficulties that many African American students have at school (Hosp & Reschly, 2003; Macmillan & Reschly, 1998). The available research does not irrefutably confirm this hypothesis (e.g., Skiba et al., 2005). The author acknowledges the existence of many variables that can affect school achievement that are not under the immediate control of the school system, yet can substantially impact its effectiveness (e.g., crime, political structures, impact of SES, culture, and individual characteristics).

More importantly, IDEA 2004 acknowledges some of these contextual factors as exclusionary for special education eligibility. The current legal requirement for exclusionary factors for SLD eligibility include: (a) lack of appropriate instruction, (b) limited English proficiency, (c) MR, (d) ED, (e) sensory impairments, (f) cultural factors, or (g) environmental or economic disadvantage. The presence of any of these variables is supposed to exclude students from SLD special education services; however, it seems that the intent of the exclusionary factors is not being met. For example, in a survey of the fellows of the American Academy of School Psychology about important components of independent educational evaluations for SLD eligibility, the assessment of exclusionary factors was ranked 18th out of 20 possible components (Schrank, Miller, Caterino, Desrochers, 2006). This indicated that assessing exclusionary factors were not considered to be highly relevant to the determination of SLD for independent evaluations.

In addition, Albers and Humphries (2006) reported that a survey of 200 licensed school psychologists in Wisconsin revealed that the vast majority of IEP teams made little or no documentation of the consideration of exclusionary factors and rarely denied special education services due to the presence of the factors. The exclusionary factors are meant to protect students from being inappropriately placed in special education; however, the apparent lack of the consistent implementation of exclusionary factors contributes to minority students being disproportionately placed in special education.

Although the education of culturally, linguistically, and socio-economically diverse students can be challenging, the school system is capable of ensuring that all students receive quality instruction and early intervention services (National Research Council, 2002). Due to the inconsistent implementation of these services in the schools, there appear to be barriers to the realization of these initiatives. Predictable barriers to organizational change include insufficient funding, lack of qualified personnel, and lack of stakeholder support (Craig, 2006). Of these barriers, eliciting support from stakeholders may be the most influential in the educational organization. Obtaining stakeholder support can be influenced by a number of variables; however, overcoming people's resistance to change may be one of the most influential barriers to successful program implementation.

Jerald (2006) indicated that problems schools experience when attempting to make improvements include distrust from veteran teachers and minimal commitment from administrators and teachers. Gerber and Semmel (1984) indicated that "classroom teachers orient, both in terms of effort and positive affect, towards students whom they consider 'teachable' and away from students [who] are…difficult to teach" (p. 141).

What is disturbing is that resistance in the form of stereotypes and personal biases against certain cultural groups can limit the effectiveness of change initiatives. Quality instruction should be provided to all children, regardless of the student's cultural background, SES status, and their perceived "innate" cognitive ability. If minority students, especially, had more access to quality instruction, it is more likely that disproportionality will decrease.

School administrators need to utilize experts, such as school psychologists, in their schools and district to help minimize disproportionality. School psychologists can assist school administration in choosing the best model of PIT implementation that, with proper implementation, will lead to an increase in student achievement and reduction of referrals to special education. School psychologists could assist PITs function more appropriately by providing extensive training and information on the structure and functioning of the team and its members. School psychologists could also assist in program evaluation and help examine the effectiveness of teams for increasing the educational achievement of at-risk students.

To facilitate proper implementation of the PIT process, school administrators need to ensure that teachers receive proper support during implementation and that recommendations of the team are implemented with fidelity and consistency.

Future Research

The current study exposed several areas that need further study. One area of particular importance is quality PIT implementation. Future research in this area should focus on how to structure training so that a school district could utilize their experts to conduct training and help maintain a quality prereferral structure. Also because of the

varying models of PIT implementation, future research initiatives should focus on identifying which models are most effective. Emphasis should be placed on controlling variables such as type of training and support, demographics, and funding to maximize generalizability of findings. In addition, since the problem-solving process is so frequently used in PIT implementation, future research should examine the relationship between all of these variables in schools with a high fidelity PIT implementation to determine if certain components are more influential than others.

The current study was exploratory and only examined the PIT process in one school district. Future studies should also include a more nationally representative sample of schools that implement the PIT process. In addition to ethnicity, student-related variables (e.g., academic functioning, parent involvement, family SES) and nature of referral concern (e.g., Academic, Behavioral) should be included in the analyses to determine if differences in the variables are linked to fidelity of PIT implementation.

Also, it is important for future research to examine the social processes involved in the special education process to determine if and when social biases is most influential on a child's educational outcomes. Lastly, research should include investigating other means of reducing disproportionality (e.g., culturally-responsive pedagogy) in addition to PITs to determine if they are more effective at impacting this unyielding problem.

Limitations

A number of important limitations need to be considered. The current study only analyzed data from one school district for one school year, limiting generalizability. The results may have been different if the study included multiple districts over some years of implementation. Also, the current study was based in the southeast region of the country,

which previous studies have implicated as more likely to have disproportionality (Eitle, 2002; Zhang & Katsiyannis, 2002). Having data from other regions may have also strengthened the generalizability of the findings.

The current study is a nonexperimental design, which only allows inferences about relationships, not causality. This limitation is quite common in applied research. The impact of PITs on special education referral patterns are difficult to investigate with experimental designs due to the inability to control many variables that could be impacting the process in the naturalistic setting; however, this limitation is quite common in applied settings. This limitation is balanced by gains in external validity from studying a situation that is not experimentally manipulated and may be a closer representation of authentic school practices.

The violations of ANOVA assumptions due to the large discrepancy between group sizes and nonnormality of the distribution of the variables complicated the interpretation of the results obtained. Also, the factors in the current study were strongly correlated with each other, making it difficult to separate out their independent influences. Although, this is a violation of the orthogonality assumption of ANOVA, it is commonly seen in nonexperimental designs. Lastly, the dependent variables are significantly correlated with each other (moderate to high) which also influences the ability to use more sophisticated analyses.

Conclusion

The goal of this research is to draw attention to the impact of field-based PITs on disproportionality. Examining the functioning of field-based PITs is timely because of the important and significant changes in eligibility determinations in the newly reauthorized

IDEA (2004). Although required by IDEA, the pre-referral process in typical schools may be unable to fulfill its role in helping identify students with disabilities. Ultimately, the results of this investigation may inform national and local research on the implementation of field-based PITs and their readiness to assume this very important role. Only when all students, regardless or race, class, religion, or gender, have access to high quality schooling will progress be made toward diminishing disproportionality.

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