The Penn State McNair Journal

Summer 2010, Volume 17

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THE PENN STATE MCNAIR JOURNAL

Summer 2010 Volume Seventeen

Table of Contents

McNair Scholar Articles

WELCOME

Since 1991, the Penn State McNair Scholars Program has enriched the lives of students at Penn State. The McNair Program holds a very special place in our lives, as well as in the lives of the faculty and staff who work with our students. This publication celebrates their achievements and we offer it to our readers with pride and pleasure.

This is the seventeenth issue of the Penn State McNair Journal. We congratulate the 2010 Penn State McNair Scholars and their faculty research advisors! This journal presents the research conducted in the summer of 2010 by undergraduate students from Penn State who are enrolled in the Penn State McNair Scholars Program.

The articles within this journal represent many long hours of mutual satisfying work by the Scholars and their professors. The results of their research are published here and have also been presented at various research conferences around the country. We are especially proud to see how these students have grown as researchers and scholars. The hard work, dedication, and persistence required in producing new knowledge through research is most evident in these articles.

We very much appreciate the guidance, expertise, caring and patience of our fine group of Penn State faculty research advisors. For their ongoing support and assistance, we thank Graham Spanier, President of Penn State University; Rodney Erikson, Provost of Penn State University; Hank Foley, Senior Vice President of Research and Dean of the Graduate School; Regina Vasilatos-Younken, Associate Dean of the Graduate School, and Suzanne Adair, Assistant Dean and Senior Director of the Office of Graduate Educational Equity Programs, the administrative home of the McNair Scholars Program.

We are also fortunate to have the support and encouragement of many faculty and staff members who have worked with our students as social mentors or who have presented workshops and seminars on the many aspects of graduate and faculty life. You give the most precious of gifts to our students – your time in volunteering to support, encourage and nurture our Scholars' hopes and dreams.

Teresa Tassotti

Project Director

TRIO PROGRAMS ON THE NATIONAL LEVEL

Since their establishment in the mid-sixties as part of Lyndon Johnson's War on Poverty Program, the federal TRIO Programs have attempted to provide educational opportunity and make dreams come true for those who have traditionally not been a part of the educational mainstream of American society. The TRIO programs are funded under Title IV of the Higher Education Act of 1965. While student financial aid programs help students overcome financial barriers to higher education, TRIO programs help students overcome class, social and cultural barriers to higher education. There are eight TRIO programs, which include the original three – Upward Bound, Talent Search and Student Support Services. The additional programs are Educational Opportunity Centers, Upward Bound Math & Science Centers, the Ronald E. McNair Post-Baccalaureate Achievement Program, a dissemination program, and a training program for TRIO staff. McNair programs are located at 208 institutions across the United States and Puerto Rico. The McNair Program is designed to prepare participants for doctoral studies through involvement in research and other scholarly activities.

TRIO PROGRAMS AT PENN STATE

The 11 TRIO Programs at Penn State comprise six of the nine TRIO programs. There are two Educational Opportunity Centers, one in Philadelphia and the other serving southwestern Pennsylvania, two Talent Search Programs serving western Pennsylvania and the city of York, Ronald E. McNair Scholars Program, four Student Support Services Programs, Upward Bound, and Upward Bound Math & Science. These programs annually serve more than 6,000 students, from 6th graders through adults, all with clear potential for academic success. The programs operate at the following Penn State campuses: University Park, Wilkes-Barre, Greater Allegheny, and the Pennsylvania Institute of Technology. The programs also operate in communities across the state, often linking with middle schools, high schools, and community agencies. The programs focus on helping students overcome economic, social, and class barriers so that they can pursue education beyond high school.

MCNAIR SCHOLARS PROGRAM AT PENN STATE

Designed for low-income and first-generation college students, and students from groups underrepresented in graduate education, the McNair Scholars Program at Penn State encourages talented undergraduates to pursue the doctoral degree. The program works closely with these participants through their undergraduate career, encourages their entrance into graduate programs, and tracks their progress to successful completion of advanced degrees.

The goal of the McNair Program is to increase graduate degree attainment of students from the above-mentioned underrepresented segments of society. McNair Scholars are presented with opportunities to study and do research in the University's state-of-the-art facilities in order to hone those skills required for success in doctoral education. Through both academic year and summer program components, McNair Scholars are required to complete a series of steps that lead to their application and enrollment in a graduate program of their choice.

Since 1991, the McNair Scholars Program at Penn State has helped 207 students earn their baccalaureate degrees. Of these graduates, 156 or 75 percent have gone on to graduate school at institutions across the country and overseas. As of January 2011, 35 or 17 percent have earned their doctoral or professional degrees and another 79 or 38 percent have earned their master's degrees only. Currently, there are 53 or 26 percent of alumni who are still enrolled in graduate programs. Among the institutions McNair alumni have attended or now attend are: Arizona State, Boston University, Columbia, Cornell, DePaul, Harvard, Howard, Indiana University-Bloomington, Johns Hopkins, New York University, Ohio State, Penn State, Purdue, Rice University, Stanford, Temple, Texas A&M, UCLA, University of California-Berkeley, University of California-Davis, University of Chicago, University of Maryland-College Park, University of Michigan, University of North Carolina-Chapel Hill, University of Pennsylvania, University of Texas-Austin and Yale, to name just a few.

Summer 2010 McNair Scholars and Program Staff

Summer 2010 Penn State McNair scholars, program staff, McNair alumni and other special guests gather together at the conclusion of the 2010 National Penn State McNair Summer Research Conference held July 16-18, 2010 on the University Park campus.

ABOUT RONALD E. MCNAIR

Dr. Ronald Erwin McNair, the second African American to fly in space, was born on October 21, 1950, in Lake City, South Carolina. In 1971, he received a Bachelor of Science degree, magna cum laude, in physics from North Carolina A&T State University. He continued his education at the Massachusetts Institute of Technology (MIT) where, in 1976, he earned his Ph.D. in physics.

While at MIT, McNair performed some of the earliest development of chemical and high-pressure CO lasers. He went on to study laser physics at E'cole D'ete Theorique de Physique in Les Houches, France. He was well published and nationally known for his work in the field of laser physics through the Hughes Laboratory.

In 1978, McNair realized his dream of becoming an astronaut when he was selected from a pool of several thousand applicants to be included in the first class of thirty-five applicants for the space shuttle program. Ronald McNair and six other astronauts died on January 28, 1986 when the space shuttle *Challenger* exploded after launching from the Kennedy Space Center in Florida.

McNair was an accomplished saxophonist; held a sixth-degree, black belt in karate; and was the recipient of three honorary doctorates and a score of fellowships and commendations. He was married to the former Cheryl Moore and is the father of two children, Reginald Ervin and Joy Cheray. After his death, Congress approved funding to honor the memory of McNair by establishing the Ronald E. McNair Post-Baccalaureate Achievement Program, which became the sixth program funded under the TRIO Programs umbrella.

"Historians, who will write about McNair, the man, will discover that there was much more to him than his scholastics achievements. Friends who knew him, say he walked humbly and never boasted about his achievements. They say his commitments were to God, his family and to the youths he encouraged to succeed."
(Ebony, May 1986)

SPECIAL ACKNOWLEDGEMENTS

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McNair Alumni on the Move

We congratulate our recent graduates and are very proud of their accomplishments. We also extend congratulations to those Penn State McNair alumni who have earned their graduate degrees as well as those alumni currently enrolled in graduate studies.

At the graduate level…

Mimi (Abel) Hughes (PSU 2002)	M.S., University of California-Los Angeles Ph.D., University of California-Los Angeles
Juan Abreu (PSU 2002)	J.D., Rutgers University
Felix Acon-Chen (PSU 2004)	M.S., Stevens Institute of Technology
Taimarie Adams (PSU 2003)	J.D., Harvard University
Luis Agosto (PSU 2005)	Ph.D, University of Pennsylvania
Christopher Arlene (PSU 2004)	M.P.P., Harvard University
Karla (James) Anderson (VSU 1999)	M.S., Central Michigan University
Omotayo Banjo (PSU 2004)	Ph.D., Penn State University
Angelo Berrios (PSU 2000)	M.S, Joseph's University
Aaron Brundage (PSU 1995)	M.S., Penn State University Ph.D., Purdue University
Jose Buitrago (PSU 1995)	M.L.A., Harvard University
Sherese Burnham (PSU 1999)	M.A., University of Central Florida
Saalim Carter (PSU 2007)	M.A., University of Chicago
Jacqueline Cauley (PSU 2009)	M.A., Queen's University (Belfast)
Sofia Cerda-Gonzalez (PSU 1999)	D.V.M., Cornell University
Andra Colbert (VSU 2005)	M.Ed., Johns Hopkins University
Michael Collins (VSU 2005)	M.D., Howard University
Trinaty Crosby (PSU 2005)	M.S.W., Howard University
Evelyn Cruz (VSU 1996)	M.S., University of Virginia
Lurie Daniel (PSU 2000)	J.D., New York University
Natasha Deer (PSU 1995)	M.A., Florida State University
Alicia DeFrancesco (PSU 1997)	M.B.A., Babson College
Jorge Delgado (PSU 2004)	M.S., Purdue University
Eve Dunbar (PSU 1998)	Ph.D., University of Texas-Austin
Latia Eaton (VSU 2003)	M.S.W., University of Baltimore
Carol Elias (VSU 1997)	M.Ed., Virginia State University
Mark Elwell-Heyler (PSU 2002)	M.S., Cornell University
Natasha Faison (PSU 1999)	M.S., Penn State University, M.A., University of Michigan
Max Fontus (PSU 1999)	Ph.D., Indiana University-Bloomington
Tiana Garrett (VSU 2001)	M.P.H., Ph.D., University of North Carolina-Chapel Hill
Michael Godeny (PSU 2002)	Ph.D., University of Florida
Antoinette Gomez (PSU 1994)	M.S., Clark-Atlanta University M.S.W., University of Denver
Cristina Gonzalez (PSU 1999)	M.D., Albert Einstein Medical School
Sherie Graham (PSU 2002)	M.P.H., University of Michigan
Derek Gray (VSU 1998)	M.L.A., SUNY-Albany M.A., SUNY-Albany
Mark Harewood (VSU 2000)	M.A., Webster University

Atiya Harmon (PSU 2002)	M.S., University of Pennsylvania
Dennis Harney (PSU 1993)	M.A., University of Pennsylvania
Janet Harris (PSU 1996)	M.Ed, Duquesne University
Meng He (PSU 2002)	M.S., American University
Angela Hess (PSU 1998)	Ph.D., University of Iowa
Jeffrey Himes (PSU 1997)	M.A., West Virginia University
Priscilla Hockin-Brown (PSU 1996)	M.S., Michigan State University
Dustin Holloway (PSU 2002)	Ph.D., Boston University
Alisa Howze (PSU 1994)	Ph.D., Texas A&M University
Juliet Iwelumor (PSU 2006)	Ph.D., Penn State University
Andrea Jones (VSU 1998)	M.A., Virginia State University
Michelle Jones-London (PSU 1996)	Ph.D., Penn State University
Irene Karedis (PSU 2006)	M.A., Institute of World Politics
Leshawn Kee (VSU 1998)	M.A., Regents University
Haroon Kharem (PSU 1996)	Ph.D., Penn State University
Robert Ksiazkiewcz (PSU 2007)	M.A., University of Pittsburgh
Carrie (Hippchen) Kuhn (PSU 2001)	M.A., Stanford University
Judy Liu (PSU 1995)	M.S., University of California-Berkeley
	Ph.D., University of California-Berkeley
LaShawne Long-Myles (PSU 2001)	M.Ed., Xavier University
Lanik Lowry (PSU 2002)	M.B.A., University of Maryland-College Park
	M.A., University of Maryland-College Park
Charmayne Maddox (PSU 2004)	M.Ed., Penn State University
	M.Ed., Chestnut Hill College
Lourdes Marcano (PSU 1995)	M.B.A., University of Tennessee
Debra Marks (VSU 1996)	M.S., University of Virginia
	M.B.A., Liberty University
Leanna Mellott (PSU 2000)	Ph.D., Ohio State University
Robert Miller (PSU 1999)	Ph.D., University of Kentucky
Bethany Molnar (PSU 1998)	M.S., Northeastern University
Shartaya Mollett (PSU 2007)	M.S.W., University of Pittsburgh
Nicole Morbillo (PSU 1998)	D.P.T., New York University
Ndidi Moses (PSU 2000)	M.A., Penn State University,
	J.D., University of Connecticut
Rashid Njai (PSU 2000)	M.P.H., University of Michigan
	Ph.D., University of Michigan
Julio Ortiz (PSU 2002)	Ph.D., Penn State University
Robert Osmanski (PSU 1995)	M.S., Penn State University
Hui Ou (PSU 2005)	M.S., Cornell University
Mark Palumbo (PSU 2000)	M.S., Wright State University
	Ph.D., Wright State University
Tracie Parker (VSU 2003)	M.A., Ohio State University
Anjana Patel (PSU 2008)	M.P.H., Drexel University
Franche Pierre-Robinson (VSU 2002)	M.Ed., University of Illinois-Chicago
Tiffany Polanco (PSU 2004)	Ph.D., Rutgers University
Kenya Ramey (VSU 2006)	M.A., Temple University
Cavin Robinson (PSU 2002)	M.A., Ph.D., DePaul University
Caryn Rodgers (PSU 2000)	Ph.D., St. John's University
Armando Saliba (PSU 2003)	M.A., University of Incarnate Word
Lilliam Santiago-Quinones (PSU 1998)	M.Ed., Bowling Green State University
Thomas Shields (PSU 1998)	M.A., Penn State University
Christie Sidora (PSU 2000)	M.A., Duquesne University
Andrew Snauffer (PSU 1996)	M.S., Michigan Technical University

Melik Spain (VSU 1996)	M.S., Virginia Tech University
Anthony Spencer (PSU 1999)	Ph.D., Northwestern University
Kashra Taliaferro (PSU 2003)	M.Ed., University of Maryland-College Park
Scott Test (PSU 2008)	M.L.A., Clarion University
Constance Thompson (VSU 1996)	M.S., Cornell University
Anthony Paul Trace (PSU 2004)	M.S., Ph.D., University of Virginia
Shawyntee Vertilus (PSU 1998)	M.P.H./M.D., New York Medical College
Katherine Wheatle (PSU 2008)	M.P.H., Emory University
Patrice White (VSU 2001)	M.A., University of Maryland-College Park
Romon Williams (VSU 1995)	M.S., Wake Forest University
Wendy Williamson (PSU 1995)	M.B.A., Penn State University
Michele Wisniewski (PSU 2004)	Pharm.D., Massachusetts College of Pharmacy
Kenya Wright (VSU 1997)	M.S., North Carolina State University
Robert Allen Young (PSU 2007)	M.Ed., University of Pittsburgh
Heneryatta Ballah (PSU 2004)	M.A., Ohio State University, now pursuing Ph.D. In Women's Studies at same institution
Michael Benitez (PSU 2001)	M.Ed., Penn State University, now pursuing Ph.D. in Educational Leadership at Iowa State University
Laurian Bowles (PSU 1999)	M.A., University of London, M.A., Temple University now pursuing Ph.D. in Anthropology at same institution
Debbie Charles (PSU 001)	M.S., University of Maryland-College Park now pursuing V.M.D. at Tuskegee University
Dipnil Chowdhury (PSU 2007)	M.S., University of Pennsylvania, now pursuing Ph.D. in Engineering at same institution
Catherine Crawford (PSU 1996)	M.Ed., Central Michigan University now pursuing graduate studies at Cappella University
Felecia Evans-Bowser (PSU 2002)	M.S., Texas Tech University, now pursuing Ph.D. at same institution
Oneximo Gonzalez (PSU 2007)	M.S., University of Pittsburgh, now pursuing Ph.D. in Biomedical Engineering at same institution
Maria Gutierrez-Jaskiewicz (PSU 2005)	M.A., University of California-Berkeley now pursuing Ph.D. in Near East Studies at Yale University
Marissa (Graby) Hoover (PSU 2000)	M.S., Temple University, now pursuing Ph.D. in Educational Leadership at Penn State University
Angel Miles (PSU 2003)	M.A., University of Maryland-College Park, now pursuing Ph.D. at same institution
Amber Ortega (PSU 2008)	M.S., Penn State University, now pursuing Ph.D. at University of Colorado in Atmospheric Sciences
Zakia Posey (PSU 1999)	M.S., Michigan State University, now pursuing Ph.D. at same institution
Kristin Rauch (PSU 2004)	M.S., University of California-Davis now pursuing Ph.D. at same institution
Sassy Ross (PSU 2001)	M.F.A., New York University now pursuing Ph.D. in English at University of Utah
Steven Thompson (PSU 1997)	M.S., Indiana University-Purdue, now pursuing Ph.D. at Clemson University
Kahlil Williams (PSU 2001)	M.A., Ph.D., University of Pennsylvania, now pursuing J.D. at Columbia University

At the undergraduate level…

Ilyas Abukar (PSU) August 2010
Diana Barrantes Gomez (PSU) May 2010
Danielle Forbes (PSU) May 2010
Marlena Freeman (PSU) May 2010
Dawn Gannon (PSU) May 2010
Tatiana Gochez-Kerr (PSU) May 2010
Victoria Jackson (PSU) May 2010
Sopheavy Lim (PSU) May 2010
Justin Meyer (PSU) May 2010
Genevieve Miller-Brown (PSU) May 2010
Alisa Shockley (PSU) May 2010
Chelsie White (PSU) May 2010

On to graduate school in Fall 2010…

Diana Barrantes Gomez now pursuing graduate studies in Biomedical Sciences at Johns Hopkins University
Danielle Forbes now pursuing graduate studies in Educational Leadership at University of Illinois-Urbana Champagne
Marlena Freeman now pursuing graduate studies in Food Science at University of Georgia
Dawn Gannon now pursuing graduate studies in Creative Writing at University of Baltimore
Tatiana Gochez-Kerr now pursuing graduate studies in Sociology at University of Illinois-Urbana Champagne
Victoria Jackson now pursuing graduate studies in Political Science at University of Texas-Austin
Justin Meyer now pursuing graduate studies in Clinical Psychology at Texas A&M-College Station
Genevieve Miller-Brown now pursuing graduate studies in Bioengineering at Columbia University
Alisa Shockley now pursuing graduate studies in Geography at University of Illinois-Urbana Champagne
Chelsie White now pursuing graduate studies in Health Policy Administration at Penn State University

In graduate school as of Fall 2010…

Latoya Currie (VSU 1999) Virginia Commonwealth University (Education)
Alana Curry (VSU 2007) Tuskegee University (Veterinary Medicine)
Blake Garcia (PSU 2009) Texas A&M-College Station (Political Science)
Jennifer Geacone-Cruz (PSU 2002) Bunka So-en Daigaku University (Fashion Design)
Kathy Goodson (VSU 2005) University of Maryland-College Park (Biochemistry)
Paula Henderson (PSU 2005) Barry University
Lissette Herrera (PSU 2009) LaSalle University (Psychology)
Janay Jeter (PSU 2010) Drexel University (Public Health)

Renee Killins (PSU 2007)	Purdue University (Life Sciences)
Chong Mike Lee (PSU 2007)	Penn State University (Molecular Biology)
Edward Mills (VSU 2003)	University of Illinois at Urbana-Champaign (History)
Jennifer Mulcahy-Avery (PSU 2009)	Boston University (Clinical Psychology)
LaShauna Myers (PSU 2003)	University of Pennsylvania (Higher Education)
Milton Newberry (PSU 2007)	University of Georgia (Wildlife Sciences)
Benjamin Ogrodnik (PSU 2009)	Ohio State University (English)
Fawn Patchell (PSU 2007)	Penn State University (Nutrition Sciences)
McKenna Philpot-Bowden (VSU 2004)	St. Joseph's University (Education)
Natalie Ragland (PSU 2001)	Ross University (Veterinary Medicine)
Sue Annie Rodriguez (PSU 2008)	Arizona State University (Human Development & Family Studies
Adriana Segura (PSU 2006)	Northwestern University (Medicine)
Kedesha Sibliss (VSU 2003)	Howard University (Medicine)
Luisa Soaterna (VSU 2004)	Virginia Commonwealth University (Health Administration)
Marquita Stokes (PSU 2009)	Northwestern University (Clinical Psychology)
Joshua Walker (PSU 2007)	American University (Education)
Aimy Wissa (PSU 2008)	University of Maryland-College Park (Aerospace Engineering)
Daniel Zaccariello (PSU 2008)	Rice University (Political Science)

Educational Disparities between the Native and Immigrant Populations in the United States

Rafiat Adebowale, McNair Scholar
The Pennsylvania State University

McNair Faculty Research Advisor:
Kevin J.A. Thomas, Ph.D
Assistant Professor of African and African
American Studies, Sociology, and Demography
College of Liberal Arts
The Pennsylvania State University

The majority of literature argues that immigrants, especially those of Asian-origin, have higher educational attainment than the native population in the United States. This study examines the educational attainment of the native and immigrant population in the United States. The purpose of the study is to be able to identify which racial and immigrant groups have the highest and lowest levels of educational attainment. The three levels of educational attainment that will be measured are high school graduate, bachelors' degree and graduate degree (Masters and PhD). The data that will be used in this analysis comes from the 2000 Census; there are approximately 1, 452, 355 individuals between ages 25 and 65 in the study all of whom are of either Black, White, Hispanic, or Asian origin.

"Education has opened many, many doors. However, there are still innumerable doors shut tight -- unopened yet. These are the doors of the future. Perhaps one of my children will open one of these doors -- I shall help give him the key."

-Anonymous

What drives an individual to succeed? Is it family background, personal ambition, or the desire to be and do better than what is expected? All of these factors and more can contribute to an individual's educational attainment. Education is the solution to many of the world's evils like poverty, violence and ignorance (Prospect.org). So what leads to high levels of educational attainment and achievement? In this study, we examine educational attainment using US census information on highest level of degree completed.

Specifically, this study examines the determinants of educational attainment in the native and immigrant population in the United States. The ultimate goal of the study is to see if there are differences in educational attainment between the native and immigrant population and whether these differences can be found across racial groups. In the course of the empirical analysis, we expect to be able to identify which racial and immigrant groups have the highest and lowest levels of educational attainment.

One of the goals of this research is to be able to learn why certain groups have higher educational attainment and why others have lower levels. Although the United States is one of the most industrialized nations in the world we are still lagging behind other countries in educational attainment (highereducation.org). In an age where new technological ideas are running rampant, it has become increasing important to give American youth the educational tools they need to compete with the rest of the world. President Barack Obama has been quoted as saying that one of his goals is to reform the educational system and to provide high quality education for all Americans (whitehouse.gov). If we are able to learn what variables are holding back American children's educational attainment, we can better formulate a plan to change those variables and replicate the successful ones into the society.

In the United States 1 in every 5 child is an immigrant or the child of an immigrant (Feliciano, 2006), it is crucial that our native population is able to keep up with the immigrant population. It is an all too common thing that immigrant youth are able to come into the United States and perform far better than native youth in high school and post-secondary education (Glick and White, 2004). There undeniably needs to be a change in the American educational system to ensure all of the children in the system can perform to the best of their ability.

Literature Review

The main factors associated with educational attainment among the native and immigrant populations are migrant status (voluntary or involuntary), location, parental involvement and expectations, family characteristics, pre-immigration characteristics, age of arrival of immigrants, English proficiency, generation status and duration of residence in the United States. These factors determine not only an individual's education achievement and success, but also influence how well they will adapt to the American culture.

Whether or not a person came into the United States voluntarily or involuntarily (i.e. through annexation or slavery) has a tremendous impact on their educational attainment. Voluntary immigrants are more optimistic about their future success in the United States and therefore work harder to obtain their piece of the American dream (Goyette and Xie, 1999). Voluntary immigrants also emphasize education as a tool needed for upward mobility (Glick and White, 2004). Involuntary minority groups are more likely to resist educational goals in opposition to the values of the dominant society (Hirschman and Lee, 2005). Although some involuntary minorities have been in the United States for hundreds of years (African-Americans, Latinos and Native-Americans) they may be unable to assimilate to the dominant white majority because they view school success as "selling out" to the dominate culture (Schmid, 2001). Rong and Brown (2001) argue that voluntary black immigrants are likely to perform better than their native involuntary counterparts, but the authors also make a distinction in their research that immigrant Africans are more likely to have higher educational attainment than immigrant Caribbean's.

Immigrants and minorities have been known to settle in large metropolitan cities and sometimes that could either be a hindrance or an advantage in terms of educational attainment. Studies have shown that students in predominantly African-American and Hispanic high schools are less likely to earn a high school diploma and/or college degree (Goldsmith, 2009) whereas less segregated heterogeneous communities tend to have higher levels of educational attainment (Massey et al, 2007). The low performance of schools that are predominantly African-American and Hispanic can be attributed to funding issues and expectations (Goldsmith, 2009).

Predominantly minority schools tend to have lower funding than predominantly white schools (Goldsmith, 2009). Another crucial factor that can be attributed to the low performance of inner-city children is the low expectations that the teachers and the community hold for them (Goldsmith, 2009). If the children in these communities are constantly told that they will not reach their full potential, they will believe that, and continually perform at substandard levels. The influx of immigrants in a community could potentially deter their education further (Lloyd, Tienda, and Zajacova, 2001). When a community sees an increasing amount of immigrants entering their schooling systems, the schools will have to change their curriculum to meet the needs of the new students (more ESL classes…etc) (Betts, 1998). When that happens money that can be potentially be used to help native students is used on the immigrant newcomers (Betts, 1998).

Immigrants who settle in large enclaves tend to do better than those who are isolated because in immigrant communities the "it takes a village to raise a child" mentally settles in (Hao and Bonstead-Burns, 1998). Many recent immigrants live in homogenous communities and have their neighbors and community members monitor their child, and because they are from similar ethnic backgrounds the respect and the solidarity still exist and translates into success for many of the children (Hirschman, Lee and Emeka, 2003).

Those immigrants who lack the financial resources to live in more desirable neighborhoods or those who are isolated from members of their ethnic group, tend live in less attractive parts of town (Hao and Bonstead-Burns, 1998). When this happens, they are exposed to the unprivileged parts of American society and according to Hao and Bonstead-Burns (1998) they will find themselves assimilating to the culture of the disadvantaged.

Parental involvement in their children's education (parent-teacher interaction, monitoring homework...etc), can also lead to higher levels of educational attainment (Hirschman, Lee and Emeka, 2003). As previous studies indicate, immigrant parents have higher levels of involvement and high expectations for their children; these expectations more often than not translate into academic success for immigrant children (Hao and Brunstead-Burns, 1998). "Asian parents have much higher academic expectations than U.S. parents do and often push their children to attain as much education as possible" (Goyette and Xie, 1998, p.27). As much as parent-teacher interaction is important to a child's educational attainment, parent-child interaction is as equally important. High levels of parent-child interaction will not only increase a parent's educational expectations but also increases the child's expectation for themselves.

The structure and characteristics of a family (immigrant or native) is important for a child's educational attainment. Children living with one parent or neither parent generally tend to have lower levels of educational attainment because of the lack of social support (Lloyd, Tienda, and Zajacova, 2001). Parents who stay and live together, and extended families where older relatives monitor and motivate adolescents, can increase a youth's chances of upward mobility (through higher levels of educational attainment) (Portes and Fernandez-Kelly, 2008). Immigrants generally come from either two-parent families or from families with strong social networks where there are more stable psychological conditions that lead to higher academic achievement and educational aspirations than of those children who live in single parent isolated homes (Zhou, 1997). Another family characteristic that could potentially affect a child's educational attainment is the number of children in a family. Previous studies have found an inverse relationship between family size and completed levels of schooling of individuals in a

household (Lloyd, Tienda, and Zajacova, 2001). Socio-economic status (SES) is arguably one of the most debated issues on whether or not it affects an immigrant's educational attainment (Schmid, 2001). In the United States, socio-economic status can be a strong predictor of educational attainment because rich people can afford to go to school (Schmid, 2001). When it comes to immigrants, SES can be a neutral predictor of educational attainment because rich and poor immigrants both have an opportunity to be successful in the United States.

An immigrants SES in their country of origin is an important variable determining their future success in the United States. According to Cynthia Feliciano (2006), it is unknown if host countries are sending the 'best and the brightest' or the 'poorest of the poor'. Their pre-migration status can show where they will measure up amongst America's elitist. If an immigrant is poor in their country of origin, they are likely to be poor in the United States, if they are rich in their country of origin they have a potential to be rich in the U.S. or less rich in the United States. Some immigrants who have high SES in their country of origin, drop down a couple of rankings when they come to the U.S., but are willing to do so to further their children's educational attainment and achievement (Feliciano, 2006).

The age of arrival of an immigrant can predict two things: likelihood of adaptation and educational attainment. Younger immigrants have an increased probability for higher levels of educational attainment than older immigrants (Chiswick and Burman, 2003). Younger immigrants also fare better than older immigrants because they haven't spent years of non-transferable human capital in their country of origin (Chiswick and Burman, 2003). The more time spent in their home country, the more resources (education and employment) invested in that country; at times those resources do not transfer into their host country, which essentially means an individual will have to start over.

English language proficiency can be a somewhat controversial and sensitive topic (Glick and White, 2004). There are those who believe that once an immigrant moves to the United States they need to adopt English as their primary language (Glick and White, 2004). There are also others who believe proficiency in the English language does not translate into success for an immigrant (Glick and White, 2004). For immigrants, keeping their native tongue but also adapting to the language of the majority, it is an essential key in their adaptation and future success in the United States. Glick and White (2004) believe that parents who are confident in their English speaking skills are more likely to engage in contact with their child's school and therefore can better assist their children's educational needs. Children that come from bi-lingual families can sometimes have an upper hand. Studies have shown that having bi-lingual parents can improve academic achievement because such parents can both connect with school system and immigrant community leading to a bigger support system for the child (Glick and White, 2004). Holding all other variables constant, retention of native language promotes academic achievement (Hao and Bonstead-Bruns, 1998).

Immigrant generation plays an important role in educational attainment and school performance (Chiswick and Burman, 2003). Second generation youth academically outperform native youth (Chiswick and Burman, 2003). But as immigration generation increases (third, fourth, and fifth) the playing field between immigrant and native populations becomes level and they begin to perform the same. This could be attributed to the fact that the longer a family stays in the United States the more American they become and start losing their traditional values like the importance of education (Chiswick and Burman, 2003).

The reasons immigrants come into a country vary, some come primary for an education, some come to work, and others come to live in the United States. Those immigrants who stay in the United States for longer periods of time generally have higher educational attainment and are more familiar with American society (Chiswick and Burman, 2003). Those who have a higher propensity to return to their country of origin will have a lower incentive to invest in human capital for themselves and their children in their host country (Chiswick and Burman, 2003). They do not want to waste human capital in a country that they are only planning to stay a short period of time in.

Hypothesis

After gathering information from the literature review three hypotheses were formed. The first being that immigrant Asians will have the highest levels of educational attainment among all other groups, followed closely by immigrant blacks. The literature has shown that the Asian culture highly values education and sees it as a means for upward mobility. Asians in the United States also have the highest income levels among all other racial groups so it is very plausible that they would have the highest levels of educational attainment. African immigrants could possibly have the highest educational attainment, but Caribbean immigrants could potentially be bringing down the levels of educational attainment for black immigrants. Though there are slight discrepancies in literature on whether either African immigrants or Caribbean immigrants have higher levels of educational attainment, more literature seems to agree on the fact that African immigrants have higher levels of educational attainment than those of their Caribbean counterparts. The second hypothesis was Hispanic natives will have the lowest educational attainment. One of the main variables in the literature review is English proficiency. When an individual in the United States is not proficient in the English language studies show that their levels of educational attainment will be low as a result. The literature also tends to show that those of Hispanic origin (especially those of Mexican heritage) struggle more with English proficiency than any other race. Immigrant Hispanics could potentially struggle as much as native Hispanics when it comes to English proficiency, but a great deal of scholars in the field have shown the immigrants have higher levels of educational attainment than natives in the United States. With the combination of lower levels of English proficiency and the large amount of literature that states that immigrants have higher educational attainment, it extremely probable that Hispanic natives will have the lowest levels of educational attainment. Lastly the final hypothesis states that there will be little to no disparities in the educational attainment of native Whites and native Asians. The literature has shown that Asians historically have higher levels of educational attainment than all other races. Since native whites have moderate levels of educational attainment it would be possible that a third or fourth generation Asian native would have similar levels of educational attainment as a white native.

Data and Methods

In this study of educational attainment data from the 2000 United States Census Bureau will be used to analyze the levels of educational attainment between the native and immigrant populations. The United States Census data is a reliable, up to date, and widely used data set and

is clearly representative of the American population. There will be four main racial groups that will be compared to one another and the groups will be as follows: native Black-origin Americans against Black-origin immigrants, native Hispanic-origin Americans against Hispanic-origin immigrants, native Asian-Americans against immigrant Asians, and native European-origin white Americans against immigrant European-origin whites. These four racial groups are important to the study because they are the most visible and prominent racial groups in the United States.

European-origin white immigrants are those who identify themselves within the white-non Hispanic race. Black immigrants are foreign-born individuals who identify their race as non Hispanic black. Asian immigrants are foreign-born individuals who identify themselves as belonging to the Asian race. Hispanic immigrants are those immigrants who were born in a Hispanic country and are of Hispanic origin.

The Census data set includes 1,452,355 individuals, 49.14% are male and 50.86% are female. All individuals in the study range from twenty-five years of age to sixty five years of age. Using twenty-five as the lower limit is appropriate because by twenty-five most people have completed their education. Sixty-five is known as the upper limit and is appropriate to use because it is the upper limit for the working age population.

Immigrants in this study will be defined as anyone who was born aboard (excluding military personal) and migrated to the United States. Natives are defined as persons who were born in the United States. One of the main variables in the study that will be analyzed is English proficiency. English proficiency will be measured as the ability to speak English very well or speak only English. Other variables in the study include sex, year of immigration.

In this study educational attainment will be measured in terms of highest degree attained. The three levels of educational attainment will be high school degree, Bachelors degree, and Masters/PhD degrees.

The programs used to analyze that Census data will be SPSS and STATA. STATA will be the primary program used to run frequencies and SPSS will be used to test statistical significance and to conduct multivariate regression analysis.

Findings

Table 1 presents the distribution of the important demographic variables used in the analysis for immigrant and natives in all of the four racial categories. The table reports the frequencies of mean age, percentage of males, percentage of those who believe they are proficient in English, and generational status. White immigrants have the highest mean age of all individuals in the study with an average age of 44.1, whereas Hispanics immigrants have the lowest mean age at 39.3. A great deal of literature argues that men are more likely to migrate then females so gender, more specifically the percentage of males is an important demographic variable. Table 1 shows that within the immigrant groups, Hispanics have a higher percentage of males (52.9%) than any other group. The table also shows that immigrant Asians have the lowest percentage of males at 46.7%.

As the literature review noted, language proficiency is an important variable in determining educational attainment. Hispanics, out of all other racial groups in this study, have been historically disadvantaged in terms of this variable. Table 1 shows that among both natives

and immigrants, Hispanics have the lowest percentage of English proficiency in relation to all other groups. Hispanic immigrants' percentage of English proficiency stands at 29.5% whereas the highest percentage of English proficiency in immigrants belongs to those of Black origin, with a percentage of 80.7. Hispanic natives also have the lowest percentage of English proficiency at 83.4%; native Whites have the highest at 99.4%.

Another variable used in this study was generational status; most scholars tend to agree that time of arrival into the host country in an important factor in educational attainment. In this study, there are four generational groups. Those who belong to the 1.75 generational group are immigrants who came into the host country between the ages of 0-5. The 1.5 generation is classified as those immigrants who come into a country between the ages of 6-12 years of age. 1.25 generation immigrants are individuals who come into a host country between the ages of 13-17 and consequently immigrants who come into the country after the age of 18 are labeled as "other generation".

Asian immigrants have the highest percentage of other generation immigrants at 81.1%, whereas white immigrants have the lowest at 64%. Asians are the least likely immigrant group to belong to the 1.75 generational cohort with only 4.5% of Asian immigrants coming into the country from the ages of 0-5. White immigrants have the highest percentage of immigrants coming in from both the 1.75 and the 1.5 generational cohorts. Hispanic immigrants have the highest percentage of immigrants that belong to the 1.25 generation with 16%. In all the immigrant racial categories the largest percentages of immigrants are from the "other generation" which means that most of the immigrants in the study came into the United States after the age of 18.

Table 1: Distribution of Demographic Variables

	Blacks		Whites		Asians		Hispanics	
	Immigrant	Native	Immigrant	Native	Immigrant	Native	Immigrant	Native
Age (Mean)	41.2***	42.2	44.1**	43.9	41.7***	39.8	39.3***	40.1
Males (%)	48.1%***	45.6%	48.5%***	49.5%	46.7%***	49.5%	52.9%***	48.1%
English Proficient (%)	80.7%***	99.2%	74.7%***	99.4%	51.3%***	96.2%	29.5%***	83.4%
Generational Status								
1.75	5.2%	-	18.1%	-	4.5%	-	5%	-
1.5	7.4%	-	9.8%	-	6.5%	-	7.8%	-
1.25	10.4%	-	8.1%	-	7.9%	-	16%	-
Other	77%	-	64%	-	81.1%	-	71.2%	-
Sample Size	13,375	143,385	51,317	1,042,084	49,733	9,958	90,753	66,543

Note: ***P<0.001, **P<0.01., *P<0.05

Table 2 presents an in-depth analysis of the educational attainment of the 1.75, 1.5, and other generational categories. The table shows the relationship between the generational groups and the four racial categories in their attainment of a high school, bachelors, and graduate degrees. The table also shows how the generational immigrants compare relative to the US born group. When it comes to Blacks, 1.75 and 1.5 generation immigrants outperform US born Blacks in the attainment of high school, bachelors and graduates degrees. Other first generation immigrants have lower percentage of getting high school degrees than US born Blacks, but 1.75, 1.5, 1.25 and other first generation immigrants are more likely to get both bachelors and graduate degrees at higher rates than US born Blacks. US born Whites have higher levels of high school graduates than both 1.5 and other generation White immigrants, but all other generational groups of White immigrants have higher rates of bachelors and graduate degrees than US born Whites. The educational attainment patterns of Asians are somewhat unsystematic. US born Asians have higher rates of high school graduation than both 1.5 and other generation groups, but have the lowest rates of bachelor's degrees than 1.75, 1.5, and other first generation groups. When it comes to graduate degrees, US born Asians have higher levels of graduate degree attainment than 1.5 generation, but other first and 1.75 generations have higher percentages of graduate degrees than US born Asians. Other 1st generation Asians have the highest percentage of graduate degree at 19.1% compared to not only other Asian generational immigrants but than all other generational immigrants and US born racial groups. This seems to contradict what most

literature says about other 1st generation immigrants. Most researchers tend to agree that other 1st generation immigrants (those 17 and older) have lower levels of educational attainment because they don't want to waste human capital in their host country when they already spent human capital in their home country(Chiswick and Burman, 2003).

When it comes to Hispanics, 1.75 generation immigrants have the higher educational attainment than all other Hispanic groups (including US born); they have the highest percentage of high school, bachelors, and graduate degrees. Other 1st generation Hispanic immigrants have the lowest education attainment followed by 1.5 generation Hispanic immigrants. US born Hispanics closely trail behind 1.75 generation immigrants in educational attainment.

Graphs 1-4 show the educational attainment of the native and immigrant populations of the four racial categories. Although unlike Table 2, the graphs are not broken down into generational status. However, they still provide a clear interpretation of the data. In all the groups (except Blacks), the native population has higher rates of high school graduates than the immigrant populations. Yet in all groups (except Hispanics), immigrants have higher levels of attainment of bachelors and graduate degrees than natives. In all categories of educational attainment (high school, bachelors, and graduate degrees) native Hispanics have higher rates than their immigrant counterparts. Graphs 1-4 are important to the study because the tables reinforce the findings in Table 2. They also show that the older first generation immigrants bring down the educational attainment of all immigrants as a whole. With the exception of Hispanics, immigrants are still able to outperform the native population when it comes to post-secondary education.

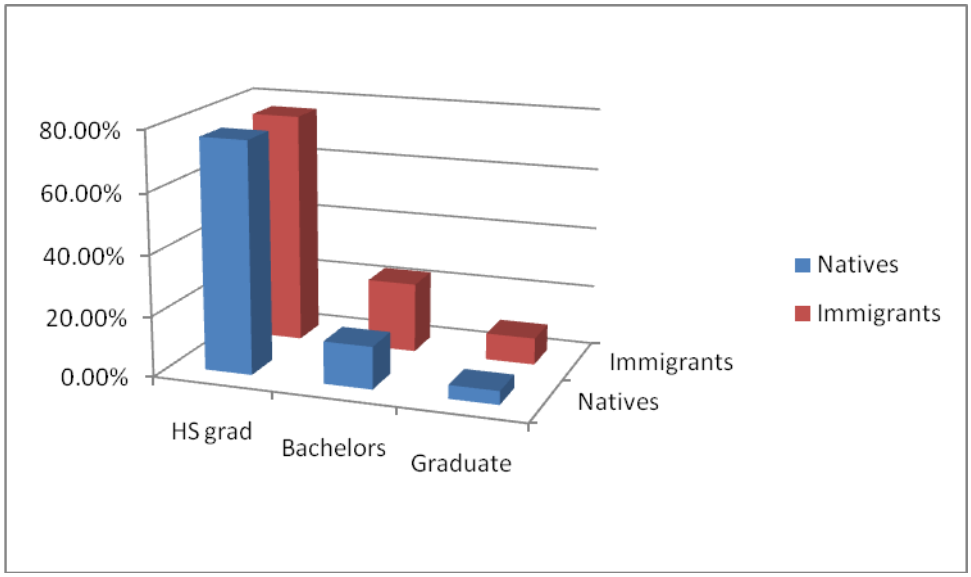
The low educational performance of immigrant Hispanics may possibly be attributed to their English Language proficiency. Graph 5 shows that Hispanic immigrants have the lowest level of English proficiency and that only 29.52% are proficient in English. Additionally, although Hispanic natives have higher educational attainment when compared to Hispanic immigrants, Hispanic natives have the lowest educational attainment of all other native racial groups. This could be attributed to their low levels of English Proficiency Graph 6 provides evidence that Hispanic natives have far less English proficiency (83.42%) than other native racial groups.

Table 2: Distribution of Generational Status and Degree Attained

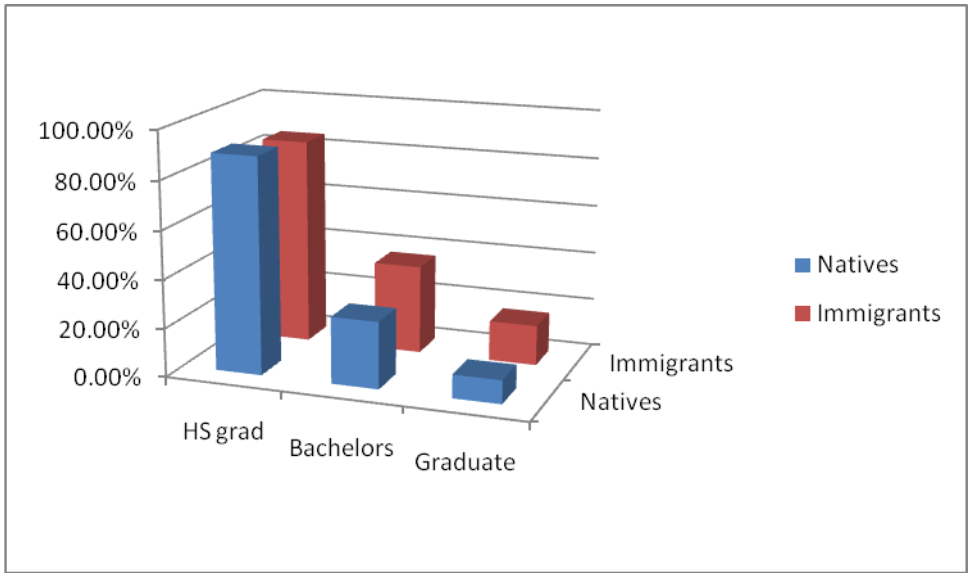
	High School Graduate	Bachelors Degree	Graduate Degree
Blacks			
US-Born	76.2%	13.95%	4.5%
1.75 Gen immigrants	90.2%***	30.3%***	9.9%***
1.5 Gen immigrants	87.3%***	29.1%***	8.7%***
1.25 Gen immigrants	86%***	26%***	9.1%***
Other 1st gen immigrants	73.2%***	21.5%***	8.7%***
Whites			
US-Born	89.2%	27.5%	9.6%
1.75 Gen immigrants	93.4%***	36.6%***	12.9%***
1.5 Gen immigrants	88.6%	33.2%***	13.3%***
1.25 Gen immigrants	79%***	29.4%**	11.1%**
Other 1st gen immigrants	83.4%***	37.9%***	18.7%***
Asians			
US-Born	93.2%	43.9%	14.8%
1.75 Gen immigrants	95.4%***	52.9%***	17.1%*
1.5 Gen immigrants	91.9%*	46.5%*	13.5%
1.25 gen immigrants	85.1%***	38.6%***	11.6%***
Other 1st gen immigrants	80.1%***	45.4%*	19.1%***
Hispanics			
US-Born	71.8%	13.3%	4.1%
1.75 Gen immigrants	73.4%*	16.3%***	5.3%***
1.5 Gen immigrants	59.9%***	11.6%***	3.9%
1.25 Gen immigrants	35.8%***	5%***	1.6%***
Other 1st gen immigrants	36.9%***	7.9%***	3.5%***

Note: ***P<0.001, **P<0.01., *P<0.05

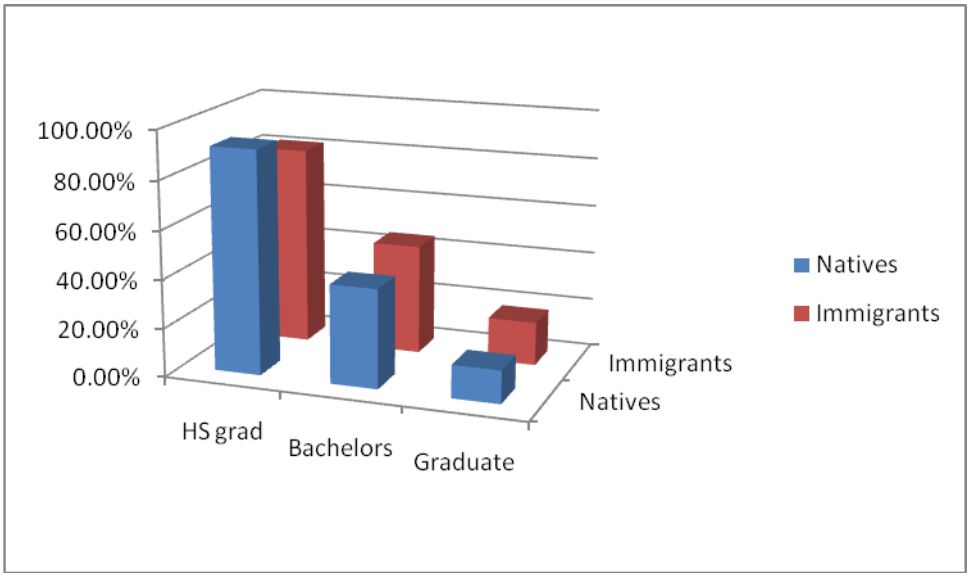
Graph 1: Black Educational Attainment



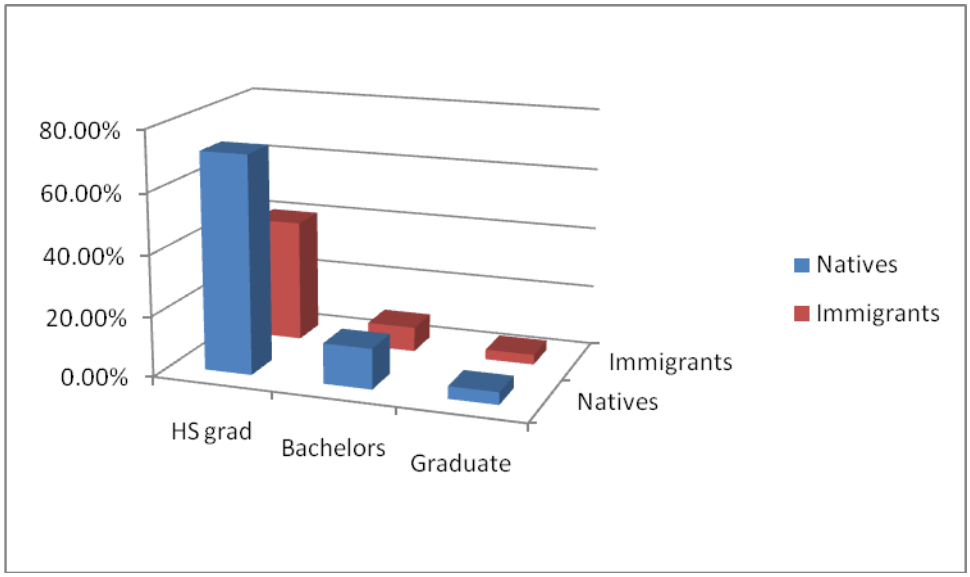
Graph 2: White Educational Attainment



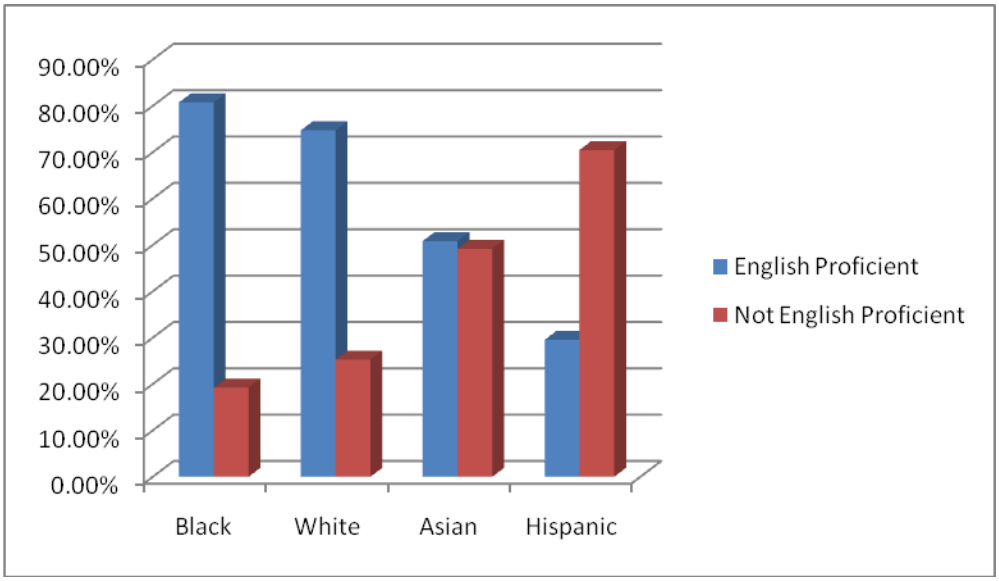
Graph 3: Asian Educational Attainment



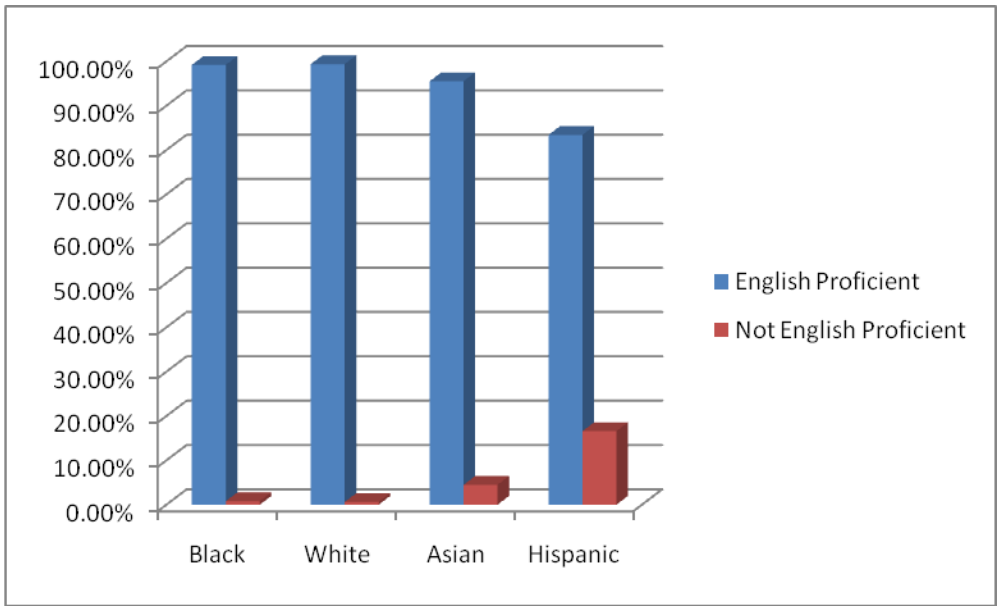
Graph 4: Hispanic Educational Attainment



Graph 5: Immigrant English Proficiency



Graph 6: Native English Proficiency



Findings from the Multiple Regression Analysis

Regression analyses were performed to determine how variables such as age, gender and English proficiency affected the educational attainment of 1.75, 1.5, 1.25, and other 1st generation immigrant groups. As shown in Table 3, high school degree attainment was the first level of education analyzed. When it comes to blacks in the population, age and gender (more specifically if they are male) are negatively associated with complete high school educational attainment. If a black individual is English proficient the logit of his/her probability of attaining a high school degree increases by 0.63. When controlling for all three variable, 1.75 black immigrants had the highest probability of being a high school graduate while 'other' 1st generation immigrants than the lowest probability compared to Black natives.

In terms of attainment of bachelor's degrees for blacks, in Table 4 the same patterns exist. Again gender and age negatively affect blacks' likelihood of obtaining a bachelors degree. There is however a slight discrepancy when it comes to English proficiency. English proficiency is not as important of a determinant of bachelor's degree attainment for blacks as it was for high school degree attainment. Yet again, relative to the reference group (i.e. Black natives), black immigrants belonging to the 1.75 generation group have the highest probability of getting a bachelors degree followed by 1.5, 1.25, and 'other' 1st generation immigrants. Gender is the only variable that negatively affects graduate degree attainment; both age and English proficiency have positive effects. The 1.75 generation has the highest probability of obtaining a graduate degree at 1.05 trailing behind is the 1.25, than 1.5 and lastly the other 1st generation immigrants.

White educational attainment was the next group analyzed. Table 3 shows that as with blacks, when it comes to white individual's attainment of high school degrees, age and gender also have negative effects. Again as with blacks, English proficiency has a positive effect on attainment of a high school degree. Relative to White natives, 1.75 generation white immigrations have a higher probability of obtaining a high school degree at 0.49.However, the results indicate that after age, gender, and language proficiency are controlled 1.5 and other 1st White immigrants are not significantly likely to graduate from high school than White natives and 1.25 generation.

When analyzing bachelor's degree attainment for whites, it is apparent, when analyzing Table 4, that being a younger English proficient male is an advantage whereas as being older seems to be a disadvantage. Compared to White natives, other 1st generation white immigrants have the highest probability of getting a bachelors degree, after controlling for the three variables, followed by White immigrants in the 1.75, 1.5, and 1.25 generations. Table 5 shows that age, gender and English proficiency are all advantages for white immigrants in terms of graduate degree attainment. Other 1st generation whites have the highest probability of attaining a graduate degree, 1.75 and 1.5 generation have the same probability at 0.41 and 1.25 generation have the lowest probability of attaining a graduate degree.

Table 3 infers that younger English proficient Asian males who belong to the 1.75 generation have the highest probability of being a high school graduate among Asians. Being older (age) negatively affects an Asian's high school graduate attainment while being male and English proficient are positive factors in their high school graduate attainment. In the population of Asians, those who belong to the 1.75 generation have the highest probability of getting a high school degree, after other factors are controlled, followed by 1.5 (not significant), other 1st, and

1.25 generations. When examining bachelor degree attainment for Asians, Table 4 shows that Younger English proficiency Asian males who are part of the other 1st generation cohort have the highest probability of having a bachelor's degree. Being male and English proficient have positive effects on obtaining a bachelors degree, while age (being older) does not. Compared to Asian natives, other 1st generation Asian immigrants have the highest probability of attaining a bachelor's degree whereas 1.25 generation immigrants have the lowest probability although the latter is not significant in the Asian population. The same patterns are present in Table 5, again being male and English proficient are positive indicators of obtaining a graduate degree; age (probability of being older) is still a negative factor. Relative to Asian natives, other 1st generation immigrants have the highest probability of attaining a graduate degree while those belonging to the 1.5 generation have the lowest probability, although the probability is not significant.

The final racial group analyzed in the study is Hispanics. Table 3 shows that younger Hispanic females who are English proficient have a higher probability of getting a high school degree. Being male and older are negative factors in the attainment of a high school degree among Hispanics; English proficiency was the only positive variable. Although not statistically significant in the population, Hispanics belonging to the 1.75 generation have the highest probability of having a high school degree relative to Hispanic natives; Hispanics who belong to the 1.25 generation have the lowest probability.

In Table 4 it is apparent that the same patterns are persistent for bachelor's degree attainment, younger Hispanic females who are proficient in English are more likely to attain a bachelors degree. Compared to Hispanic natives, Hispanic immigrants who identify with the 1.75 generation have a higher probability of having a bachelor's degree; Hispanics who belong to the 1.25 generation have the lowest probability after other factors are controlled. In Table 5 gender, age, and English proficiency are all positive factors when dealing with graduate degree attainment of Hispanic immigrants. Compared to Hispanic natives, other 1st generation immigrants have the highest probability of getting a graduate degree whereas those who belong to the 1.25 generation have the lowest probability.

Table 3: Multiple Regression Analysis for High School Graduate

High School Graduate	Black	White	Asian	Hispanic
Immigrant				
1.75 generation	0.85***	0.49***	0.27*	0.03
1.5 Generation	0.57***	0.03	-0.05	-0.39***
1.25 Generation	0.53***	-0.54***	-0.37***	-1.06***
Other 1st Generation	0.03	0.00	-0.22***	-0.80***
Natives (Reference)	(0.00)	(0.00)	(0.00)	(0.00)
Age	-0.03***	-0.02***	-0.03***	-0.02***
Gender	-0.24***	-0.20***	0.23***	-0.17***
English proficient	0.64***	1.09***	1.63***	1.15***
Not English proficient (Reference)	(0.00)	(0.00)	(0.00)	(0.00)
N	155362	1086373	58126	154085
Pseudo r2	0.0214	0.0147	0.1255	0.1290

Note: ***P<0.001, **P<0.01., *P<0.05

Table 4: Multiple Regression Analysis for Bachelors Degree

Bachelors Degree	Black	White	Asian	Hispanic
Immigrant				
1.75 Generation	0.98***	0.40***	0.17***	0.25***
1.5 Generation	0.94***	0.30***	0.06	0.003
1.25 Generation	0.79***	0.18***	-0.009	-0.55***
Other 1st Generation	0.63***	0.66***	0.72***	0.13***
Natives (Reference)	(0.00)	(0.00)	(0.00)	(0.00)
Age	-0.003***	-0.008***	-0.02***	-0.0006
Gender	-0.23***	0.09***	0.27***	-0.07***
English proficient	0.44***	0.50***	1.38***	1.25***
Not English proficient (Reference)	(0.00)	(0.00)	(0.00)	(0.00)
N	155362	1086373	58126	154085
Pseudo r2	0.0087	0.0039	0.0794	0.0476

Note: ***P<0.001, **P<0.01., *P<0.05

Table 5: Multiple Regression Analysis for Graduate Degree

Graduate Degree	Black	White	Asian	Hispanic
Immigrant				
1.75 Generation	1.05***	0.41***	0.06	0.36***
1.5 Generation	0.94***	0.41***	-0.11	0.17**
1.25 Generation	0.97***	0.23***	-0.09	-0.36***
Other 1st Generation	0.82***	0.90***	0.85***	0.49***
Natives (Reference)	(0.00)	(0.00)	(0.00)	(0.00)
Age	0.02***	0.02***	-0.01***	0.02***
Gender	-0.24***	0.16***	0.58***	0.04
English proficient	0.55***	0.48***	1.30***	1.23***
Not English proficient (Reference)	(0.00)	(0.00)	(0.00)	(0.00)
N	155362	1086373	58126	154085
Pseudo r2	0.0173	0.0090	0.0695	0.0346

Note: ***P<0.001, **P<0.01., *P<0.05

Discussion and Conclusions

In the beginning of this study, three hypotheses were formed. The first one was that immigrant Asians will have the highest levels of educational attainment among all other groups, followed closely by immigrant blacks. After analyzing the data the hypothesis was proven to be partially correct. Given that graduate degrees are the highest level of educational attainment in the study, graduate degree attainment will be used to measure the highest level of educational attainment. Immigrant Asians were proven to have the highest level of graduate degree attainment at 17.89% but immigrant Blacks did not closely follow immigrants Asians instead immigrant Whites did. Immigrant Whites graduate degree attainment stands at 16.53% whereas immigrant Blacks graduate degree attainment is at 8.83%.

The second hypothesis stated that Hispanic natives will have the lowest educational attainment. Again the hypothesis was incorrect. Although Hispanic natives have the lowest educational attainment among all the native groups, Hispanic *immigrants* have the lowest educational attainment among all groups, both natives and immigrants. An explanation for the low performance of immigrant Hispanics could possibly come from the fact that the group has the lowest levels of English proficiency. Table 3 (Immigrant English Proficiency) shows that 70.48% of immigrants Hispanics in the study were not English proficient.

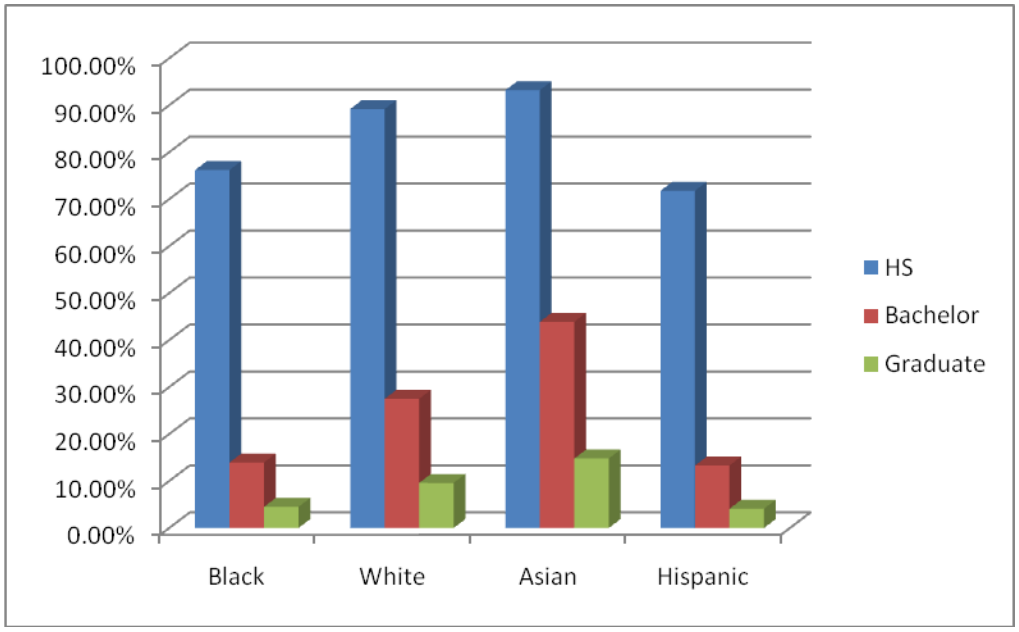
The third and final hypothesis stated that there will be little to no disparity in the educational attainment of native Whites and native Asians. This hypothesis was always proven to be incorrect. Graph 7 shows the breakdown of the educational attainment in the native

population. . Again because graduate degrees are the highest levels of educational attainment in this study, they were the level used to compare native Asians and Whites. The percent of U.S. born Whites, in the population, that have graduate degrees stands at 9.6%; for U.S. born Asians in the population the percentage is 14.8. Native Asians graduate degree attainment is over five percent higher than native Whites.

So again the research question comes up: Why do some people have higher educational attainment than others? Is it race, cultural values or personal ambition? The exact answer to the question may never be known but what is known is that this current generation of college students will be the most educated generation in American history (Stern, 2010).

There is vast amount of literature available on educational attainment but there is more research that needs to be done on the factors that determine future educational success. There needs to be a partnership between government officials and academics in order for us to reform the American educational system so that all pupils can succeed. This data set will continue to be worked with more in depth and the next step will be to determine if country of origin has an effect on educational attainment. Regions in Asia, Europe, and Africa will be separated into north, south, west, and east to establish if country of origin or more specifically region is a determinant of educational attainment.

Graph 7: Native Educational Attainment



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Double bang flashes with IceCube

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Abstract

Astronomy and particle astrophysics with the IceCube Neutrino Observatory benefit from tau neutrino detection. Tau neutrinos produce distinct, nearly background free electromagnetic showers within the volume of IceCube. The search for tau neutrino extragalactic point sources requires accurate event reconstruction. Utilizing LED flashers within IceCube allows for the simulation and calibration of the detector for tau neutrino event reconstruction. The search for the classic double bang tau neutrino event geometry within existing flasher data provides only a few useful events for configuration. A Monte Carlo simulation shows a quadratic relationship between the number of actively flashing IceCube modules and the number of expected calibration events. Consequently, data with more active flashers should be collected to produce the events useful for tau neutrino event configuration.

1 Introduction

Neutrino astronomy opens a new window into the cosmos. Massive clouds of matter hide large portions of the sky rendering much inaccessible to contemporary astronomy. Neutrinos on the other hand rarely interact with matter and carry cosmological information to Earth nearly uninhibited. Neutrinos born in the vicinity of gamma ray bursts, supernovae, active galactic nuclei, and exotic particle events travel directly to Earth while other particles become deflected. It's hypothesized that the neutrino flux will be highest from the direction of such high energy events such as black holes and supernova explosions [1].

The IceCube Neutrino Observatory at the South Pole observes the Cherenkov radiation resultant from neutrino collisions with antarctic ice. The three known "flavors" of neutrino -the electron (νe), the muon (νμ), and the tau (ντ) neutrinos created in a ratio 1:2:0 respectively. The tau neutrino (ντ) in particular promises insight into the phenomenon known as neutrino flavor oscillation. Neutrinos should arrive at Earth with a flavor ratio 1:1:1 due to neutrino oscillation [2].

The search for energetic cosmic events profits from the detection of ντ. Only distant sources significantly contribute to ντ flux since a νe or a νμ produced in the atmosphere must travel much farther than the Earth's diameter to oscillate into a ντ . The lack of astmospheric background distinguishes the tau neutrino from the other neutrino flavors in terms of astronomical importance. Locating high energy processes such as active galactic nuclei benefits from the accurate detection of ντ events within IceCube.

The reconstruction or analysis of events taking place within IceCube utilizes the precise timing information associated with the arrival of Cherenkov radiation at the different photomultipliers within the detector. Depending on the times at which the data acquisition system within IceCube recorded radiation at specific photomultiplier tubes, information such as the trajectory of an incoming ντ may be reconstructed. This crucial time and intensity information for incoming radiation must be calibrated for accuracy.

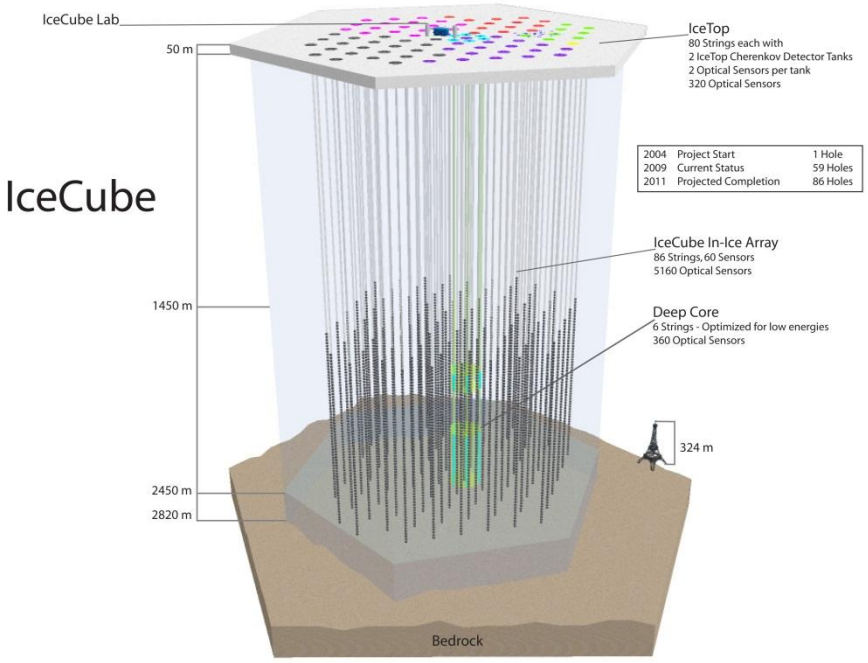
This paper considers whether flashing LEDs already deployed in the Ice-Cube detector may be utilized to generate event geometry similar to the geometry of an interacting ντ for calibration purposes. Past flasher runs as well as Monte Carlo computer simulations demonstrate that flasher data has the ability to generate data useful for ντ event configuration.

2 Neutrino astronomy with IceCube

The IceCube Neutrino Observatory resides primarily beneath 1450 m of ice at the geographic South Pole. The observatory includes over 4800 digital optical modules (DOMs) both above and below the Antarctic ice. The DOMs in surface tanks constitute an air shower array capable of observing the flux of incoming cosmic rays, whereas the in-ice DOMs accomplish the task of neutrino detection. Beginning at the depth of 1450 m below the surface 80 strings of 60 DOMs each comprise an array which spans 1 km^3 [2]. The observatory includes an additional 6 strings of densely packed (7 m spacing) DOMs known as the IceCube Deep Core. With the addition of Deep Core the IceCube array may resolve neutrino events down to energies of 5 GeV [3].

The construction of IceCube commenced in the Austral Summer between 2004 and 2005. IceCube improves upon its predecessor known as the Antarctic Muon And Neutrino Detector Array (AMANDA) in both size and optical module design. The IceCube DOM increases measurement fidelity by digitizing and time-stamping incoming analog waveforms detected within the photomultiplier tube (PMT) equipped to each module. IceCube currently collects data while under construction until 2011 when the last DOMs will be deployed [4]. A picture of the full detector including the Deep Core may be seen in FIG 1 [2].

FIG 1: Artist's rendition of the IceCube array



2.1 Double bang events

Neutrinos interact only by means of the weak nuclear force. During a weak force interaction between a $\nu\tau$ and an in ice atom, the exchange of a boson transforms the $\nu\tau$ into a charged tau lepton τ along with a shower of light emitting hadrons. This high energy τ moves through the ice at nearly the speed of light in vacuum and it moves faster than the speed of light in the medium due to the Rayleigh scattering of light in ice [5]. The Cherenkov cone of light following the τ triggers DOM PMTs revealing the path taken by the τ. At the end of its lifetime the τ decays, producing another flash of light.

The twin flash of light characterizing a $\nu\tau$ interaction provides a useful criterion for determining whether an interaction has occurred. A $\nu\tau$ with an energy of 2 -20 PeV may produce a number of event topology variations within IceCube's effective volume: the double bang, the lollipop, the inverted lollipop, the sugardaddy, and the double pulse [6]. A double bang event should have a space (Δx) and time (Δt) separation obeying

$$|c\Delta t - \Delta x| < \delta t \quad (1)$$

where δt represents the allowable deviation from light-like separation and c is the speed of light in vacuum. A double bang event satisfying (1) may be inferred from DOM measurements.

2.2 Digital optical modules

IceCube data acquisition starts with DOMs. Each DOM possesses a photomultiplier tube (PMT) capable of detecting the arrival of light. Once a photomultiplier tube has been triggered the DOM digitially encodes the incoming electromagnetic waveform. If multiple nearby DOMs indicate the arrival of a waveform, all DOMs send their on-board data to the surface. The data acquisition system on the surface decides whether or not a relevant physical event has occurred before recording the result to disk. Satellites may transfer relevant South Pole data to the northern hemisphere for analysis [4].

A $\nu\tau$ event within the effective volume of IceCube manifests itself through electromagnetic radiation and charged particles. These charged particles further excite the electromagnetic field through their movement. By collectively considering the intensity and arrival time of these wave fronts at many DOMs the source of light may be deduced.

DOMs may also utilize onboard flashers to produce electromagnetic radiation. Each DOM contains 12 gallium nitride LEDs pointing radially outward from the DOM. These LEDs connect to a flasher board and may produce 10^7 to 10^{10} photoelectrons. These LEDs have uses for calibrating the timing systems within and between DOMs in IceCube. The geometry of the light produced by these flashers may be used to simulate the geometry of $\nu\tau$ events. An IceCube event containing two DOMs satisfying (1) may be considered a $\nu\tau$ event mimic. These mimic events may be used to configure the IceCube array for more accurate event reconstruction.

3 Searching for flasher double bangs

Calibrating the IceCube data acquisition system to accurately reconstruct $\nu\tau$ events requires some model events. The LED flashers equipped to IceCube DOMs provide a suitable means to generate IceCube data. As discussed in section 2, $\nu\tau$ events may be characterized by a double

bang release of light. By instructing multiple DOMs to flash at regular intervals eventually two DOMs will flash close enough in time and satisfy the condition specified in (1). The information detected around an event satisfying the criterion in (1) may be compared with expectations. The difference in the expected event topology may be compared with the topology of the reconstructed empirical data.

The simplest approach to locating these calibration pairs involves passively collecting data from a flasher run and then performing an offline analysis. The applicability of this approach chiefly relies on two factors. The number of flashing DOMs necessary to produce a sizeable sample of calibration events must not be too high and the average time between calibration events must not be too long. Furthermore, in an ideal case two DOMs will flash with nearly the same period (within a few nanoseconds of each other) so that multiple calibration events may be extracted from a single pair. However, since the times at which DOMs begin flashing during a flasher run are random, it's unlikely an ideal pair will crossover. During a calibration event the crossover of two DOM periods happens slowly enough that at least one pair of flashes satisfies (1).

3.1 Flasher run analysis

The event analysis necessary to find a ντ mimicking event may be performed offline on data acquired during a flasher run. I utilized the IceTray software suite produced from within the IceCube collaboration to dissect the data produced at the South Pole during flasher runs. IceTray provides a reliable framework for manipulating and parsing a large amount of physical data in a fairly straight forward manner. Within this context I was able to search through records of flash times, flash frequencies, photon arrival times, physical module positions, and other run related information in order to find potentially interesting events. Data files arrive dense with encoded data which must first be processed using IceTray.

IceTray provides a programmer with numerous modules which operate on a unit of data called a frame. A frame represents data collected within a 40 μs time window. The South Pole DAQ inspects a continuous stream of data, most of which is noise, until an interesting physical event occurs. Upon detecting an event, the DAQ reads out all data within its buffer from 40 μs surrounding the physical event to output. IceTray provides feature extractor modules for opening an IceCube data file, interpreting the raw binary data and filling the IceCube frames with useable information. After these IceCube events have been written back to disk they may be processed.

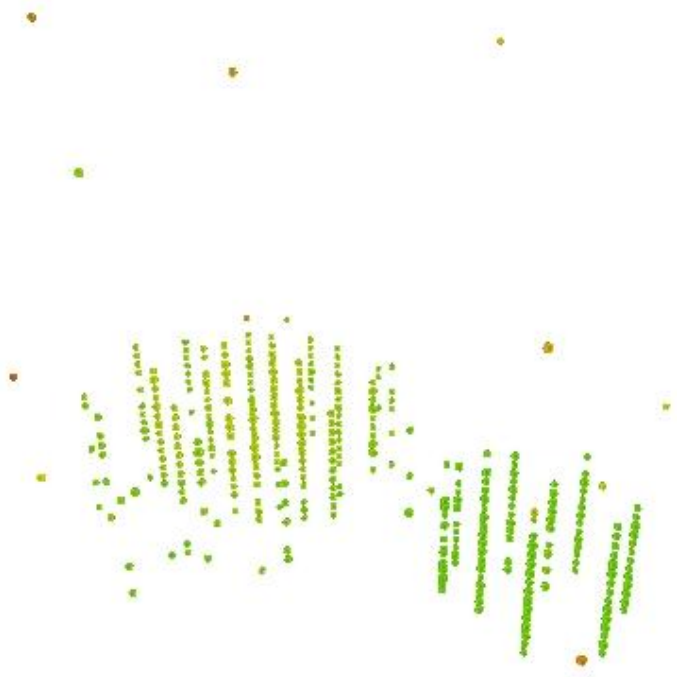
Within an IceCube file each frame contains either physics, geometry, or other information pertinent to data analysis. These frames may be processed in Python by accessing the IceTray framework. The example code below examines a physics frame in search of LED flasher data.

```
if ”I3EventHeader ” and ”flasher” in frame :
    eventHeader = frame[” I3EventHeader ”]
    frameStartTime = eventHeader.StartTime.GetUTCDaqTime()
    frameID = ”%d.%d.%d” % (eventHeader.RunID, \
                    eventHeader.SubRunID, eventHeader.EventID)
    self .record.updateTime(frameStartTime)

    flasherMap = frame[”flasher”]
    for flash in flasherMap :
        flashtime = flash .GetFlashTime()
        omKey = f l a s h . GetFlashingOM ( )
        self.record.addOM(omKey, flash.GetRate())
        self.events.append(flashtime + frameStartTime, \ self.positions[omKey], self.record,
        frameID, \ frame , omKey)
```

A natural reduction to the data from the South Pole flasher runs may be performed by reading data files event by event and totaling the number of active DOMs in that time window. Since a tau lepton crosses the entirety of the IceCube detector in a few microseconds, a pair of flashes mimicking a tau event must occur within the same event frame. These particular events may then be written to disk for further study. A reconstruction from a frame with two flashes may be seen in FIG 2. The DOMs in FIG 2 are an example of a candidate flasher pair for ντ calibration.

FIG 2: Reconstruction of a tau neutrino mimic event. Colored points denote light triggered DOMs. Colors denote arrival time.



To explain the density of potential tau mimicking events within a given flasher run, the frequency and number of active DOMs was again considered by collecting lists of relevant information event by event. An example table may be seen in section 4 along with other results.

3.2 Flasher run simulation

Computer simulations allow a concrete understanding of the relationship between the number of active DOMs Ndom and the average number of tau neutrino mimic events created $<N\nu_\tau>$. A simulation written in Python used realistic detector parameters to predict the number of candidate tau mimicking pairs in a fixed length data run. The simulation model considered the detector geometry, DOM flasher period, and the number of DOMs. Since DOMs in IceCube flash at slightly different rates, the simulation assigns DOMs randomized periods according to a gaussian distribution. The empirical data from previous flasher run data contained the information necessary to compute a realistic standard deviation in this flasher period.

After generating a randomized list of DOMs with realistic position coordinates and flasher periods the simulation takes discrete steps forward in time determining whether two or more flashes would have occurred within the IceCube trigger window of 40 μs. Additionally, flashes separated according to (1) constitute ντ mimic events. A plot of the number of expected mimic events for arbitrary DOM number may be seen in section 4.

Results

Section 3 describes a method for locating flasher ντ mimics events which have occurred within the IceCube detector array. A search for ντ mimic events proved successful for two data runs. However, the number of flasher induced calibration events fell short of expectations. Table 1 shows the number of active modules, the number of events containing multiple flashers, the duration of the runs, and the number of ντ mimics detected. The findings of this study prompted a Monte Carlo investigation into its results.

Table 1: ντ mimics found in runs 114431, 115615, 115617

Run ID	Active DOMs	Two Flashes	ν_T Mimics	Duration (s)
114431	17	456	3	1059
115615	4	0	0	1055
115617	11	340	3	1174

The Monte Carlo simulation described in section 3 was run for 1100 seconds with Ndom randomly selected DOMs. For each Ndom the number of flashes within 40 μs time windows as well as the number of ντ mimic events satisfying (1) was averaged over 1000 independent simulations for each value

of Ndom. The results of the flasher simulation may be seen in FIG 3 and 4 where the red

points denote data from table 1. Consequently, it's seen that the average number of ντ mimic events $<N\nu_\tau>$ (1100s) varies according to the formula:

$$<N\nu_\tau>(1100s)=0.02 \times N^2 \quad (2)$$

FIG 3: Simulated N_{dom} vs events with two flashes

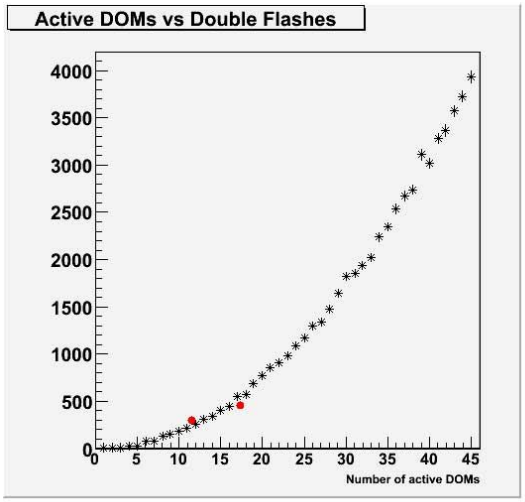
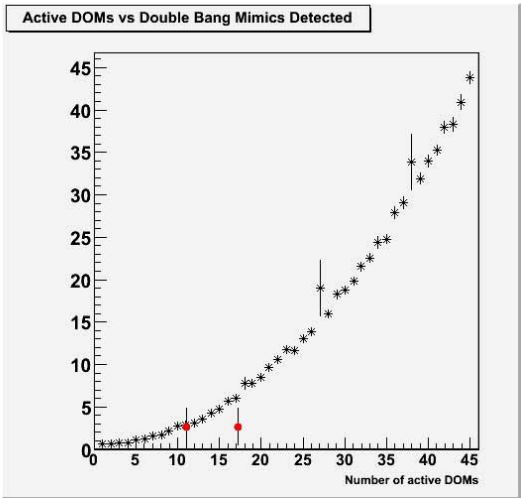


FIG 4: Simulated N_{dom} vs $<N_{\nu_\tau}>$



Conclusion

The number of potential ντ configuration events currently known do not provide a statistically significant sample. Many more configuration events must be created before they will be useful for detector calibration.

According to the results in section 4 a significant number of ντ mimics should be produced by using a larger number of DOMs as flashers. Utilizing this Monte Carlo model one may predict $<N\nu_\tau>$ = 1900 for Ndom = 300 for a 1100 s run. It's recommended that future ντ event configuration data be collected with as many DOMs as possible. More Monte Carlo simulations are planned in the near future to ascertain whether different DOM flasher geometries should produce a higher number of ντ mimic events.

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Avian Use of Restored Wetlands in the Ridge and Valley Region of Pennsylvania

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ABSTRACT Over the past century, the number of wetlands throughout the United States has been greatly reduced, causing wetland bird abundances to decline. Many efforts were made to mitigate this loss by restoring wetlands throughout the country and re-establishing lost wetland bird communities. I examined avian use of wetlands restored twelve years earlier and compared my data with an equivalent study done by Cashen and Brittingham (1998) immediately post-restoration. My objectives were to observe changes in wetlands and avian use over time at restored wetlands in the Ridge and Valley Region of Pennsylvania. I studied how restored wetlands change over time by resurveying fifteen wetlands, which were surveyed in 1998 for water depths, vegetation, area, and bird use. I detected 81 bird species in the restored wetlands, nine of which were wetland obligate species. Wetland area significantly affected wetland bird species richness ($P < 0.0273$). Since wetland area declined an average of 20% over the last twelve years (P 0.001), numbers of the bird species associated with larger wetlands tended to decline as well. Overall, average water depths changed little since 1998 with except of medium water depths which decreased significantly ($P = < 0.001$). Even though there was a loss of several wetland obligate species, species associated with larger wetlands, and changes in wetland composition, these restored wetlands are continuing to provide habitat for a variety of wetland and upland birds communities. However, management may be needed in the future to minimize further loss in wetland size.

KEY WORDS Pennsylvania, restored wetlands, wetland birds.

Wetland habitats are important to wetland avian communities and are associated with a diversity of ecosystem and economic values. Wetlands, in aggregate, provide all of the following functions and services: flood mitigation and protection, important wildlife habitats, nutrient cycling/storage and related pollution control, landscape and amenity services, recreational services, non-use existence value benefits, shoreline protection, and storm buffer zones (Turner 1991, Mitsch and Gosselink 2000, Turner 2000).

Wetland ecosystems account for 6% of the global land area and are among the most threatened of all environmental resources (Turner 1991, Mitsch and Gosselink 1993). Throughout most of the United States' history, wetlands were viewed as wastelands by a large part of the nation. Farmers tended to drain wetlands as a means to gain more land for their crops.

Many wetlands were also converted into lakes, ponds, or reservoirs. In Pennsylvania, an estimated 56% of wetlands were lost by the mid-1980's (Dahl 1990).

Since the mid-1980's, restoration became an important tool for compensating wetland losses (Ratti et al. 2001). Many organizations and programs such as Ducks Unlimited, United States Fish and Wildlife Service, Wetland Reserve Program, and North American Waterfowl Management Plan contributed millions of dollars in an attempt to restore many of the lost wetlands (Ratti et al. 2001, U.S. Fish and Wildlife Service 2009). Currently, these organizations are trying to evaluate the effectiveness of these wetland restoration projects.

Restored wetlands differ from created wetlands which are sites where wetlands are constructed where no previous wetlands existed. Mitigating wetland loss with created wetlands was generally not very successful and resulted in little contribution to overall wetland and ecosystem function (Hashisaki 1996). However, restored wetland habitats tend to provide better habitat and more ecosystem function than created wetlands due to several advantages including: existing soil types, natural soil hydrology, and the restoration sites were often part of a larger system (Hashisaki 1996, Mitsch et al. 1998).

In 1998, Cashen and Brittingham (1998) documented avian use of restored wetlands in Pennsylvania and examined the relationship between wetland variables (e.g., age, area, depth), and wetland bird species richness, composition, and guild abundance. Their research provided Partners for Wildlife, and others involved in restoring wetlands with information on what bird species to expect at restored wetlands, and guidelines on how to design or manage restored wetlands to attract specific "target" species, or guilds of species.

At the time of the study, these wetlands had all been recently restored and were between one and three years old. Over time, wetlands are expected to change as succession occurs (Galatowitsch and Van Der Valk 1996, Mitsch and Wilson 1996, Snell-Rood and Cristol 2003). Although research has documented successional changes with age at restored and created wetlands, few studies have examined the effects of wetland age on bird use (Delphey and Dinsmore 1993, Cashen and Brittingham 1998). It is important to understand how wetland function and use changes with succession.

My objectives were to determine whether and how restored wetlands changed in twelve years and how this affected bird use. To do this, I resurveyed sites in the original Pennsylvania study (Cashen and Brittingham 1998) and compared the results of my study with the original one. I examined differences in avian use as the restored wetlands age. My specific objectives were to compile a species list for each site indicating use during the breeding season; determine change in wetlands and avian use over time; and determine how wetland area affects wetland species richness and probability of occurrence of specific wetland bird species.

STUDY AREA

During the summer of 2010, I surveyed 15 restored wetlands within the Ridge and Valley region of Pennsylvania. The Ridge and Valley region extends through the center of the state, from Lackawanna County on the northeast, to Bedford County in south-central Pennsylvania (Guinn 1964). The area is largely comprised of mountainous ridges and deep valleys ranging from 199 to 823 m in elevation. The original study's research was done on 18 restored wetlands in the Ridge and Valley region with six wetlands in each of three size categories: < 2 ha, 2 to 4 ha, and

>4 ha (Cashen and Brittingham 1998). In my study, I included 15 of the 18 wetlands. Three were not used because of land owner access issues.

I contacted wetland landowners by mail to request permission to survey their wetlands. Following the letters, I called landowners to provide answers to question or concerns and follow up on requests. All but 3 of the 18 landowners gave permission to conduct research on their wetlands.

METHODS

Bird Surveys

For my research, I used 3 survey techniques to record bird use of the restored wetlands: modified-line transects (Ralph and Scott 1981), modified point counts (Verner and Ritter 1986), and playback recordings (Manci and Rusch 1988). Each wetland was surveyed twice during the breeding season, mid-May to July.

During the breeding season, most avian species are most active and more easily detected in the morning than later in the day (Verner and Ritter 1986, Cashen and Brittingham 1998). All surveys were conducted during the first 4 h following sunrise. Also, no surveys were performed during unfavorable conditions such as: heavy rain, high winds, or low visibility. Each wetland was surveyed once before starting on previously surveyed wetlands.

Modified Line-Transect.— At each wetland site, a researcher walked the entire perimeter of the wetland within 5 m of the wetland-upland boundary (Leschisin et al. 1992, Cashen and Brittingham 1998). The researcher listened for songs and watched for bird sightings. All species detected were recorded along with their distance from the boundary using 4 categories: < 50 m wetland, > 50 m wetland, < 50 m upland, > 50 m upland.

Modified Point Counts.— To account for upland song birds, I used a modified point count method to record species missed by the line-transect method. The first count station was placed on the dike side of the wetland, 30 m from the wetland- upland border in the upland. Any additional stations were added every 200 m from the previous station and remained 30 m from the wetland boundary. At most sites, the number of point count stations varied from 1 to 6 stations depending on the size of the wetland. All birds detected within 100 m during a 10 min period were recorded at each point (Verner and Ritter 1986, Cashen and Brittingham 1998).

Playback Recordings.— Due to some wetland bird species being secretive and seldom vocalizing, I used playback recordings to elicit responses. After completing the line-transect and point count surveys, I used the Marsh Bird Survey Protocol (Lanzone et al. 2006) to broadcast 5 to 9 vocalizations of wetland birds. The number of vocalizations used varied depending on wetlands size. The vocalizations of the secretive nesting marsh birds included: black rail (*Laterallus jamaicensis*), least bittern (*Ixobrychus exilis*), sora (*Porzana carolina*), Virginia rail (*Rallus limicola*), and king rail (*Rallus elegans*) for wetlands 0.5-3 ha; American bittern (*Botaurus lentiginosus*) for wetlands >3-10 ha; and common moorhen (*Gallinula chloropus*), American coot (*Fulica americana*), and pied-billed grebe (*Podilymbus podiceps*) for wetlands >10 ha. During each survey, I recorded each response or detection for species, number of species, and location of the species within the wetland. I conducted all surveys within 3 h after sunrise.

Vegetation Surveys

Many wetlands birds rely heavily on both wetland and upland vegetative growth. Absences of suitable nesting habitat, cover, or food provided by vegetation are all factors that may limit wetland use (Trefethen 1964). To account for avian vegetation needs, I conducted vegetation surveys of wetland and upland areas to calculate percent abundance of essential plant species. All vegetation surveys were concluded within 1 to 20 days of conducting bird surveys to reduce bias associated with vegetative growth.

Upland Vegetation.— I conducted vegetation surveys using line-intercept sampling to evaluate each wetland's upland vegetation (Canfield 1941). Each sample extended perpendicularly from the wetland boundary, 50 m into the upland. The first sample started from the dike side of the wetland. Additional lines were added every 25 m along the boundary, until the final line was within 25 to 50 m of the first line. Along each line, I recorded the length of the line intercepted by each of 6 major vegetation types: short herbaceous (< 40 cm), tall herbaceous (≥ 40 cm), shrub, forest, mud, and agriculture (Cashen and Brittingham 1998).

Wetland Vegetation.— At each wetland, I determined the 3 dominant emergent plant species and visually estimated percent cover of each (Ratti et al. 2001). Any additional plant species detected were recorded for general composition of the wetland.

Wetland Water Depths

During my study, I constructed water depth maps for each of the wetland sites. At each site, I waded through the water along transects drawn via GIS software. Each transect began 1 m off the wetland edge, inside the wetland. Subsequent lines were added every 5 m until the last transect was within 1 to 2 m from the opposite side of the wetland. While walking each transect, I recorded any changes in water depth. After all the measurements were taken, I created water depth maps using GIS software. From the maps, I calculated area of four water depths: emergent (wetland area containing emergent vegetation, ha), shallow (water <0.2 m deep, ha), medium (water 0.2-1.0 m deep, ha), and deep (water >1.0 m deep, ha).

Wetland Area

To obtain an estimate of area and perimeter for each wetland, I used a global positioning system (GPS) to gather data. At each site, I walked the perimeter of the wetland using visible wetland hydrologic characteristics as the boundary. All data was recorded with a GPS unit. The GPS unit was set to record my location every 10 sec.

Statistical Procedures

I conducted all statistical analysis utilizing a statistics software program called Minitab. I used a paired t-test to compare wetland size, water depth, and number of species detected per wetland between the two survey times periods. The paired t-test allowed me to compare how individual wetlands changed over time and reduced potential variability resulting from differences in the individual wetlands. I used a regression model to test for significant relationships between wetland size and species richness. I considered a p-value < 0.05 as significant for all statistical tests.

Some wetland bird species are normally associated with larger wetland sizes (Cashen and Brittingham 1998). To test the affect wetland size had on probability of occurrence of certain wetland species, I used a binary logistic regression. For a selected wetland species, great blue heron (*Ardea herodias*), I used binary data sets to score all occurrences with a value of 1 if the species was detected at a given wetland and 0 if it was not.

RESULTS

Study Sites

Wetland Area.— Wetland area ranged from 0.7 to 6.88 ha (mean 2.35 $\pm$ 0.462) in 1998 and 0.3 to 6.1 ha (mean 1.93 $\pm$ 0.416) in 2010. Since 1998, wetland area decreased an average of 20% (P = 0.001; Figure 1).

Water Depth.— Water depths varied slightly from one wetland to another (Appendix A). Thirteen of the 15 wetlands had wetland areas containing emergent vegetation. These areas showed the largest range from 0 to 2.9 ha (mean 0.45). Shallow water depths ranged from 0.11 to 0.90 ha (mean 0.32), while medium water depths ranged from 0.15 to 2.61 ha (mean 0.55). Deep water depths were present at all but one wetland and ranged from 0 to 2.59 ha (mean 0.60).

Since 1998, water depths of the fifteen wetlands changed little. Emergent (P = 0.738), shallow (P = 0.550), and deep (P = 0.259) water depths showed little to no change since 1998. However, medium water depths decreased significantly by loosing 55.1% of the area from 1998 to 2010 (P = < 0.001; Table 1).

Wetland Vegetation.— The total amount of emergent wetland vegetation ranged from 0 to 90% (mean 29%). Cattails (*Typha sp.*), rushes (*Juncus sp.*), sedges (*Carex sp.*), and wetland grasses encompassed the majority of the emergent wetland vegetation.

Upland Vegetation.— All fifteen wetlands contained shrub vegetation (range 2.9% to 47.5%; mean 25.1%), and tree cover (range 0.1% to 10.2%; mean 2.4%). In addition, all fifteen wetlands had large quantities of short and tall herbaceous cover (range 43.5% to 96.3%; mean 68.9%). Mud occurred at ten of the fifteen sites (range 1.6% to 13%; mean 6.8%). Agriculture was the least common variable present in only two of the fifteen wetlands (range 9.8% to 13.5%; mean 11.6%).

Compared to 1998 surveys, upland vegetation types showed successional changes over the last twelve years (Figure 2). Two-thirds (4) of vegetation variables showed a percent decrease over time including agriculture (88%), trees (81%), short herbaceous (84%), and mud (21%). However, shrub vegetation exhibited a percent increase at 60%. Also, tall herbaceous vegetation revealed a percent increase of >250%.

Avian Use

During the survey, I identified 81 avian species from 31 families at one or more wetlands. The total number of avian species detected at each wetland ranged from 21 to 41 (mean 30 $\pm$ 5.6). The mean number of avian species detected at each wetland decreased 35% from 1998 (P < 0.001; Figure 3; Table 2).

Wetland Species.— Eleven of 81avian species detected in my study were "wetland obligate" or "facultative wetland" species (Brooks and Croonquist 1990). Sixty percent (6) of those species were found at >50% of the wetlands including great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), Canada goose (*Branta canadensis*), wood duck (*Aix sponsa*), mallard (*Anas platyrhynchos*). and red-winged blackbird (*Agelaius phoeniceus*).

Forest Species.— I detected 37 species from 22 different families associated with forested habitat types. Eighteen percent (7) of those species were found at >50% of the wetlands

including: red-bellied woodpecker (*Melanerpes carolinus*), blue jay (*Cyanocitta cristata*), tufted titmouse (*Parus bicolor*), cedar waxwing, red-eyed vireo (*Vireo olivaceus*), and chipping sparrow (*Spizella passerina*).

Open Habitat Species.— I observed seven species from seven different families commonly found in open herbaceous habitats. I found Twenty-nine percent (2) of those species at > 50% of the sites including killdeer (*Charadrius vociferous*) and eastern kingbird (*Tyrannus tyrannus*).

Generalist Species.— Four generalist species from four different families were observed at my wetland sites including American crow (*Corvus brachyrhynchos*), common grackle (*Quiscalus quiscula),* European starting (*Sturnus vulgaris),* and American robin (*Turdus migratorius).* Most of those species, except European starting were observed at >90% of the wetland sites.

Shrub/Mid-Successional Habitat Species.— Eleven species from eight different families detected at my wetlands were species usually found in mid-successional habitat. Five of those species were detected at >50% of the sites including gray catbird (*Dumetella carolinesis*), northern cardinal (*Cardinalis cardinalis*), alder flycatcher (*Empidonax alnorum*), field sparrow (*Spizella pusilla*), and American goldfinch (*Carduelis tristis*). Three of the species detected were found at all fifteen wetland sites including yellow warbler (*Dendroica petechia*), common yellowthroat (*Geothlypis trichas*), and song sparrow (*Melospiza melodia).*

Urban Species.— The only species detected at my wetland study sites commonly found in urban areas was the house sparrow (*Passer domesticus).* I only found this species at one of my wetland sites.

Species of Concern.— I detected one of Pennsylvania's species of special concern (Brauning et al. 1994) who is also considered a wetland obligate species at 1 of the wetland sites, great egret (*Caserodius albus*) (Cashen and Brittingham 1998).

Comparison of Survey Years.— 70 of 81 avian species identified in my study were also found in 1998 (Table 2). Eight of those species found in both survey years were wetland obligates (Brooks and Croonquist 1990). I detected one wetland obligate species which was not present in 1998, common merganser (*Mergus merganser*). Cashen and Brittingham (1998) detected eight wetland obligates species which were not present in my study. Overall, I observed eleven species which were not present in 1998. However, 30 species found in the 1998 study were not present in my study.

Effect of Wetland Area on Species Richness

I found a positive relationship between wetland area and species richness ($P = < 0.05$).

Effect on Wetland Area on Probability of Occurrence

I tested species-area relationships for one wetland species of interest, great blue heron (*Ardea Herodias).* In both cases I found a positive trend between individual species and wetland area ($P = 0.219$) (Figure 5).

DISCUSSION

Study Sites

After twelve years, succession indubitably altered the appearance and function of all fifteen wetlands. Wetland area decreased an average of 20% over the last twelve years. Some of this change was not entirely due to succession though. Several of the dike structures at some of the wetlands showed evidence of rodent destruction reducing water holding capacity. Some wetland owners also stated they intentionally drew back their wetlands for recreational purposes. Furthermore, the wetland area was affected by an abnormally dry summer potentially distorting my results.

In addition to wetland area, succession also affected vegetation composition. Trees, short herbaceous, and agricultural vegetation all decreased an average of 84% while shrub vegetation increased by 60%. Furthermore, tall herbaceous vegetation showed the largest change with an increase of >250%. Although vegetation composition changed similarly, individual wetlands showed variable results in each vegetation type. Hemesath and Dinsmore (1993) and Galatowitsch and Van Der Valk (1996) found similar changes in wetland area and vegetation that varied from site to site. This variability indicates wetland area and vegetation development may be site-specific and vary with factors other succession. Duration of drainage, past usage, past herbicide use, effectiveness of drainage, and isolation may all impact vegetation response (VanRees-Siewert and Dinsmore 1996).

Avian Use

Breeding bird communities appeared slightly less diverse in 2010 than in 1998. Cashen and Brittingham (1998) detected 100 different species at one or more of the wetland sites. In 2010, I detected 81 species within my study wetlands. During the 1998 study, the researchers found eight wetland obligate species that were not present in my study, but three of those species were either late migrants or only possible breeders including lesser yellowlegs (*Tringa flavipes*), solitary sandpiper (*Tringa solitaria*), and osprey (*Pandion haliaetus*). In addition to detecting late migrants, the differences in survey years could be attributed to several factors including observer differences and changes in wetland size. Four of the five confirmed breeding wetland obligates missing in my study that was present in the 1998 study were associated with larger wetland area including Virginia rail (*Rallus limicola*), marsh wren (*Cistothorus palustris*), common moorhen (*Gallinula chloropus*), and spotted sandpiper (*Actitis macularius*); while some of the species common in both studies were associated with smaller wetland sizes. Also, the 1998 study included three visits to each wetland while my study only included two visits. However, whether this difference is due to increasing site age, or is merely a reflection of year-to-year fluctuations cannot be determined from my data (Hotaling et al. 2002).

I detected a significant relationship between wetland area and the number of wetland bird species. Other researchers have also detected similar relationships between wetland area and species richness (Hemesath and Dinsmore 1993). The reason for this relationship could be attributed to several reasons including: migrating and breeding species that seek stopover points have a better chance of finding larger wetlands than smaller ones; higher density of vegetation and water depths; some species are area-sensitive; or larger sites required more sampling effort resulting in increased probability of detecting some species (Cashen and Brittingham 1998).

Although my study was not comparing results with other wetlands, existing data on distribution and abundance of bird species suggests restored wetlands are being utilized at similar frequencies to other wetlands (Delphey and Dinsmore 1993, VanRees-Siewert and Dinsmore 1996, Cashen and Brittingham 1998, Ratti et al. 2001, Hotaling et al. 2002, Snell-

Rood and Cristol 2003,). Species such as great blue heron, green heron, Canada goose, mallard, wood duck, and red-winged blackbird which were frequently found in 1998 are also common in my study. Wetland area is still significantly related to wetland bird species richness. Overall, these wetlands are still providing beneficial habitat to a variety of flora and fauna.

Management Implications

My data suggests that changes in restored wetlands as a result of succession are variable. Most wetlands still provide quality habitat for a variety of bird species. However, there may be a need to actively manage these wetlands in the future in order to sustain or restore habitat for lost wetland obligate species and species associated with larger wetland size.

Acknowledgements

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Table 1. Comparison of mean water depth changes from 1998 to 2010 of 15 restored wetlands in the Ridge and Valley Region of Pennsylvania.

Water Depth	Mean Depth		P
	1998 Study	2010 Study	
EMERG	0.51 ± SE 0.15	0.45 ± SE 0.21	0.738
SHALL	0.41 ± SE 0.14	0.32 ± SE 0.07	0.550
MED	1.22 ± SE 0.24	0.55 ± SE 0.15	0.000
DEEP	0.73 ± SE 0.22	0.60 ± SE 0.20	0.259

Table 2. Species list of all species detected at 15 restored wetlands in the Ridge and Valley Region of Pennsylvania during the 1998 and 2010 study.

Species	Guild	Study Found		
		Both Studies	1998	2010
Cooper's Hawk	Forest			x
Red-shouldered Hawk	Forest	x		
Broad-winged Hawk	Forest		x	
Ruffed Grouse	Forest		x	
Wild Turkey	Forest			x
American Woodcock	Forest		x	
Barred Owl	Forest	x		
Hairy Woodpecker	Forest	x		
Pileated Woodpecker	Forest	x		
Acadian Flycatcher	Forest		x	
Common Raven	Forest		x	
White-breasted Nuthatch	Forest	x		
Blue-headed Vireo	Forest			x
Hermit Thrush	Forest	x		
Yellow-throated Vireo	Forest	x		
Northern Parula	Forest			x
Yellow-rumped Warbler	Forest		x	
Black-throated Green Warbler	Forest			x
Black-and-White Warbler	Forest	x		

Louisiana Waterthrush	Forest		x	
Ovenbird	Forest	x		
Hooded Warbler	Forest			x
Scarlet Tanager	Forest		x	
Black-billed Cuckoo	Forest		x	
Yellow-billed Cuckoo	Forest	x		
Great Horned Owl	Forest	x		
Ruby-throated Hummingbird	Forest	x		
Red-bellied Woodpecker	Forest	x		
Red-headed Woodpecker	Forest	x		
Downy Woodpecker	Forest	x		
Northern Flicker	Forest	x		
Eastern Wood-pewee	Forest	x		
Least Flycatcher	Forest		x	
Eastern Phoebe	Forest	x		
Great Crested Flycatcher	Forest	x		
Blue Jay	Forest	x		

Table 2. Continued

Species	Guild	Study Found		
		Both Studies	1998	2010
Black-capped Chickadee	Forest	x		
Tufted Titmouse	Forest	x		
Carolina Wren	Forest	x		
Blue-gray Gnatcatcher	Forest		x	
Wood Thrush	Forest	x		
American Robin	Forest	x		
Cedar Waxwing	Forest	x		
Warbling Vireo	Forest	x		
Red-eyed Vireo	Forest	x		
Golden-winged Warbler	Forest		x	
Nashville Warbler	Forest			x
American Redstart	Forest	x		

Wilson's Warbler	Forest		x	
Rose-breasted Grosbeak	Forest		x	
Indigo Bunting	Forest	x		
Chipping Sparrow	Forest	x		
Brown-headed Cowbird	Forest	x		
Baltimore Oriole	Forest	x		
Orchard Oriole	Forest	x		
Great Blue Heron	Wetland Obligate	x		
Great Egret	Wetland Obligate	x		
Green Heron	Wetland Obligate	x		
Canada Goose	Wetland Obligate	x		
Wood Duck	Wetland Obligate	x		
Mallard	Wetland Obligate	x		
Blue-winged Teal	Wetland Obligate		x	
Virginia Rail	Wetland Obligate		x	
Belted Kingfisher	Wetland Obligate	x		
Common Merganser	Wetland Obligate			x
Osprey	Wetland Obligate		x	
Marsh Wren	Wetland Obligate		x	
Common Moorhen	Wetland Obligate		x	
Swamp Sparrow	Wetland Obligate	x		
Lesser Yellowlegs	Wetland Obligate		x	
Solitary Sandpiper	Wetland Obligate		x	
Spotted Sandpiper	Wetland Obligate		x	
Rusty Blackbird	Facultative Wet			x

Table 2. Continued

Species	Guild	Study Found		
		Both Studies	1998	2010
Red-winged Blackbird	Facultative wet	x		
Bank Swallow	Facultative	x		
Tree Swallow	Facultative	x		
Red-tailed Hawk	Open Habitat	x		

American Kestrel	Open Habitat			x	
Ring-necked Pheasant	Open Habitat	x			
Killdeer	Open Habitat	x			
Mourning Dove	Open Habitat	x			
Barn Swallow	Open Habitat	x			
Eastern Kingbird	Open Habitat	x			
Eastern Bluebird	Open Habitat	x			
Grasshopper Sparrow	Open Habitat			x	
Bobolink	Open Habitat			x	
Eastern Meadowlark	Open Habitat	x			
Turkey Vulture	Open Habitat	x			
Northern Mockingbird	Open Habitat	x			
American Crow	Generalist	x			
American Robin	Generalist	x			
European Starting	Generalist	x			
Common Grackle	Generalist	x			
Alder Flycatcher	Shrub/Mid-successional				x
Willow Flycatcher	Shrub/Mid-successional			x	
House Wren	Shrub/Mid-successional	x			
Gray Catbird	Shrub/Mid-successional	x			
Brown Thrasher	Shrub/Mid-successional	x			
Northern Cardinal	Shrub/Mid-successional	x			
White-eyed Vireo	Shrub/Mid-successional			x	
Blue-winged Warbler	Shrub/Mid-successional			x	
Yellow Warbler	Shrub/Mid-successional	x			
Common Yellowthroat	Shrub/Mid-successional	x			
Yellow-breasted Chat	Shrub/Mid-successional			x	
Chestnut-sided Warbler	Shrub/Mid-successional	x			
Eastern Towhee	Shrub/Mid-successional	x			
Field Sparrow	Shrub/Mid-successional	x			
Song Sparrow	Shrub/Mid-successional	x			
American Goldfinch	Shrub/Mid-successional	x			

House Sparrow	Urban		x
Chimney Swift	urban	x	

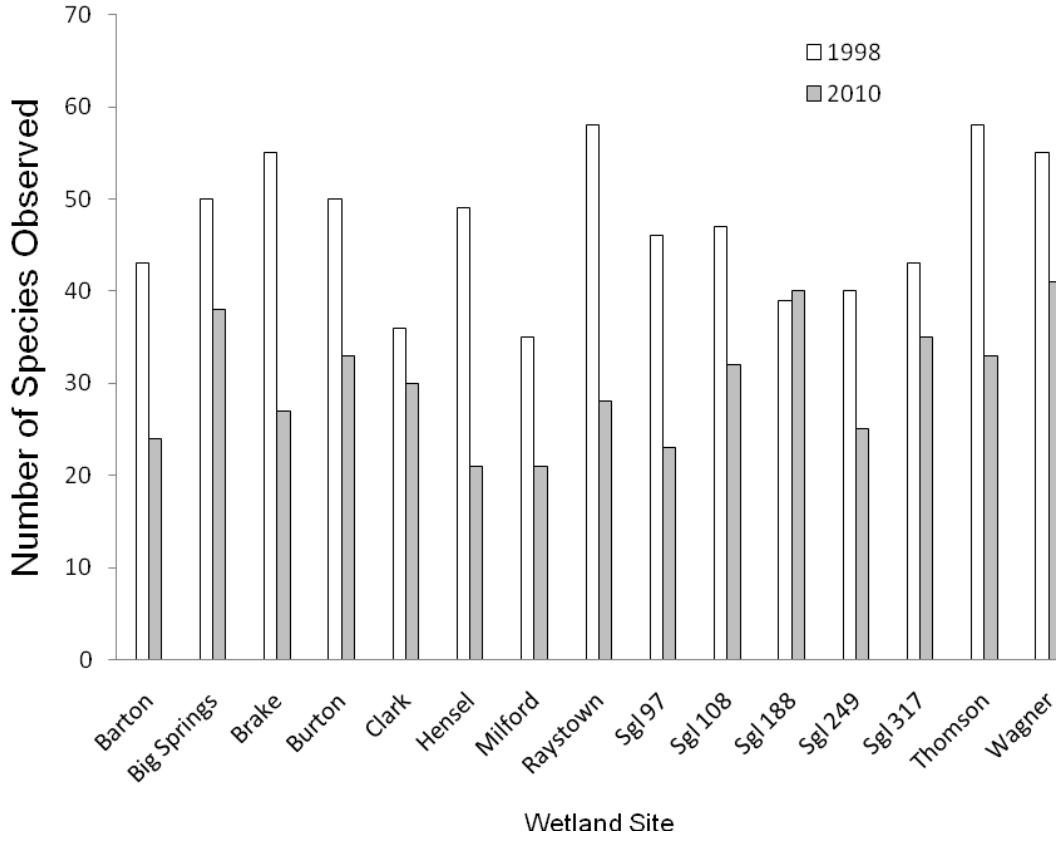


Figure 1. Comparison of wetland size per site observed in a study done on 15 restored wetlands in the Ridge and Valley Region of Pennsylvania between 1998 and 2010 (P 0.001).

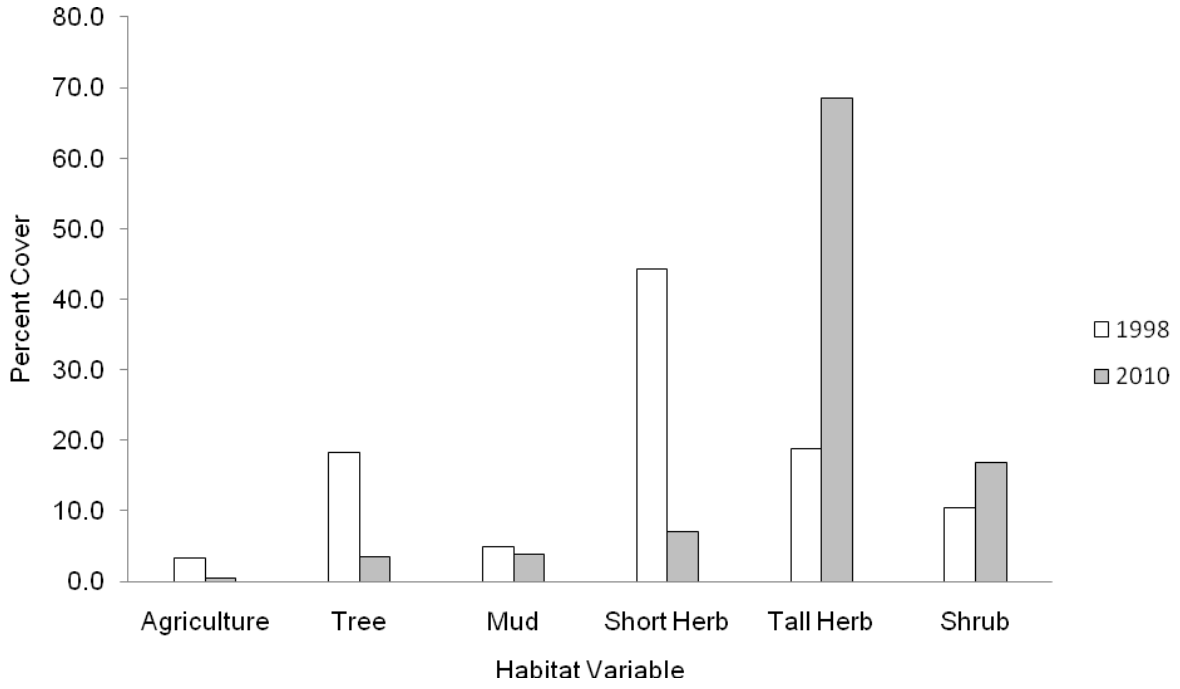


Figure 2. Comparison of percent cover of upland habitat variables observed in a study done on 15 restored wetlands in the Ridge and Valley Region of Pennsylvania between 1998 and 2010.

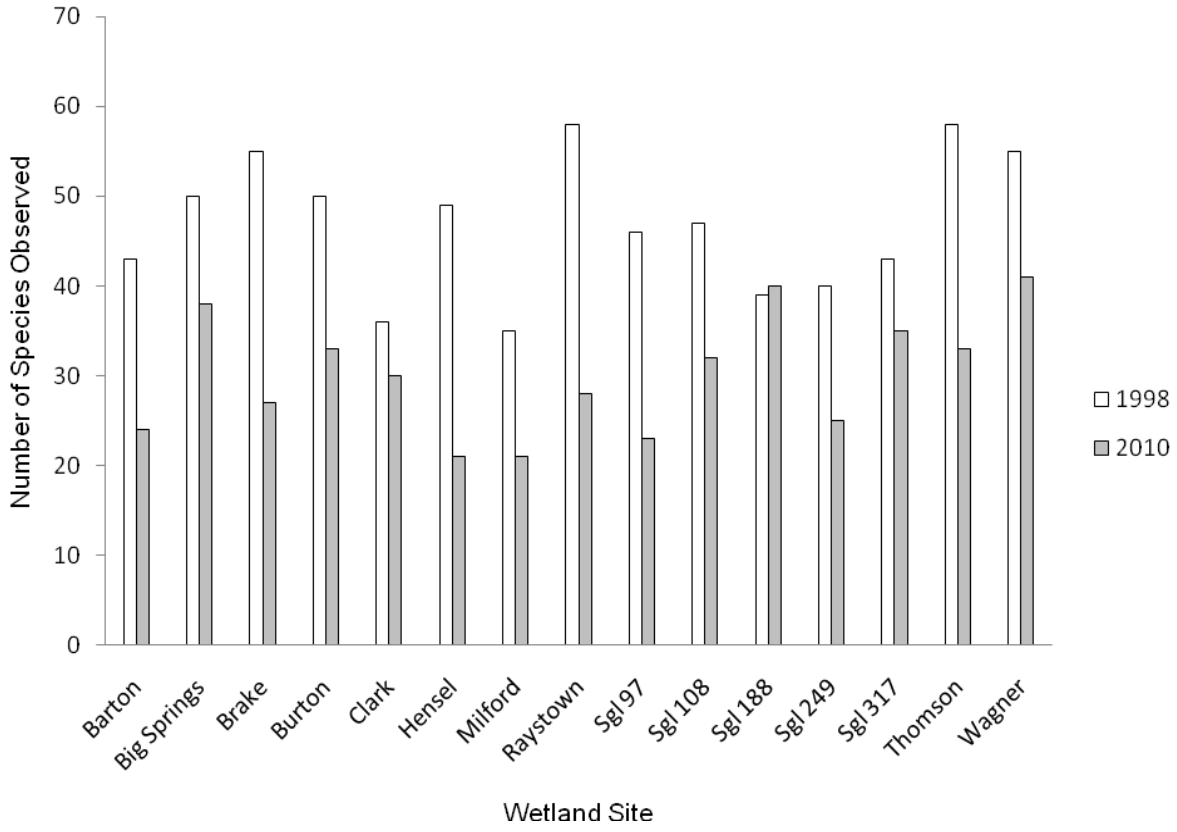


Figure 3. Comparison of the number of species observed per site between 1998 and 2010 (P= 5.412e-07) in a study of 15 restored wetlands in Ridge and Valley Region of Pennsylvania.

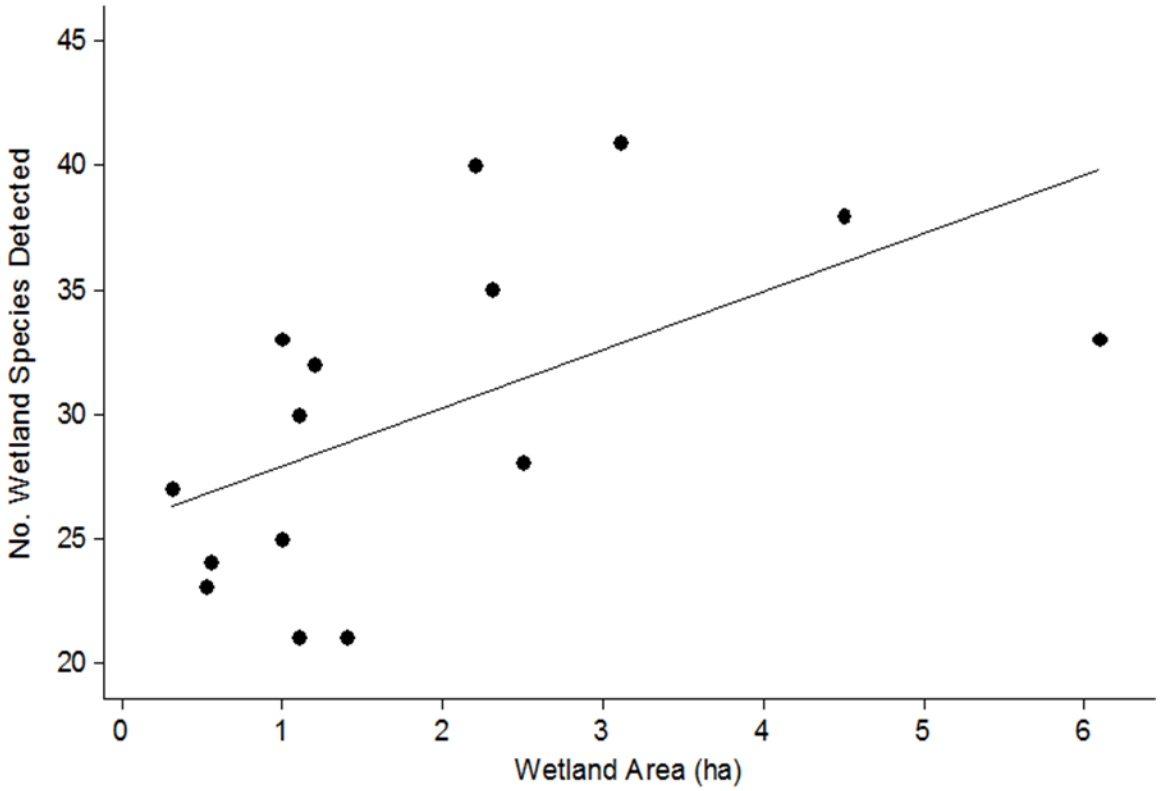


Figure 4. Relationship between avian species richness and wetland area at 15 wetlands in the Ridge and Valley region of Pennsylvania, 2010. All relationships are significant at $P < 0.05$.

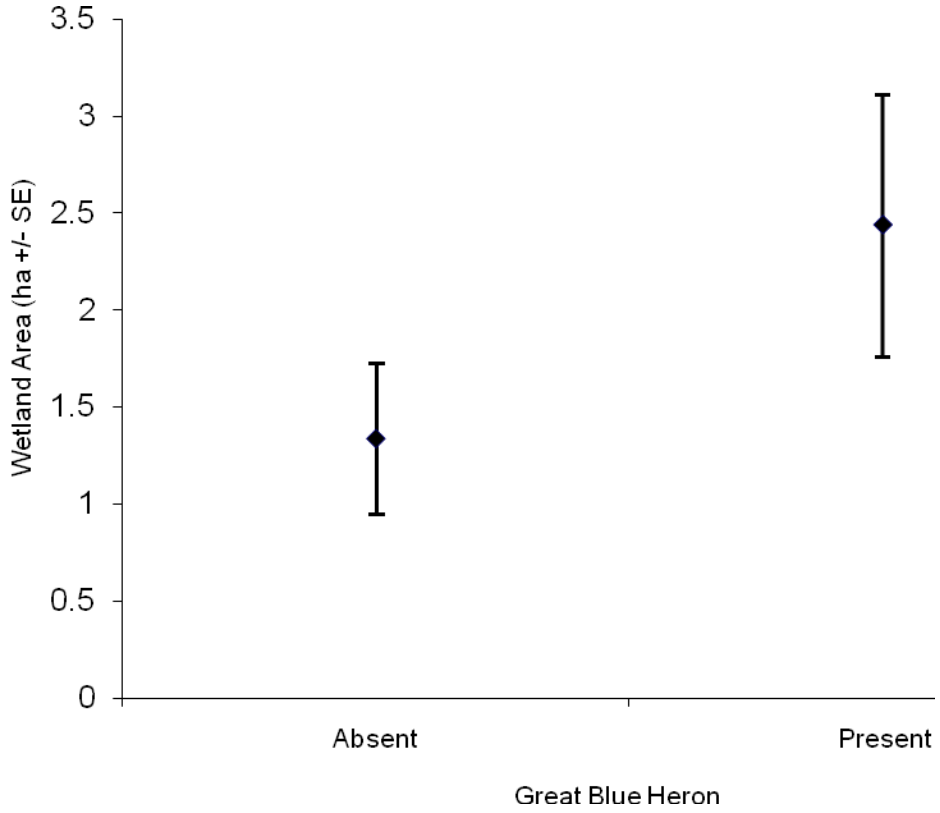
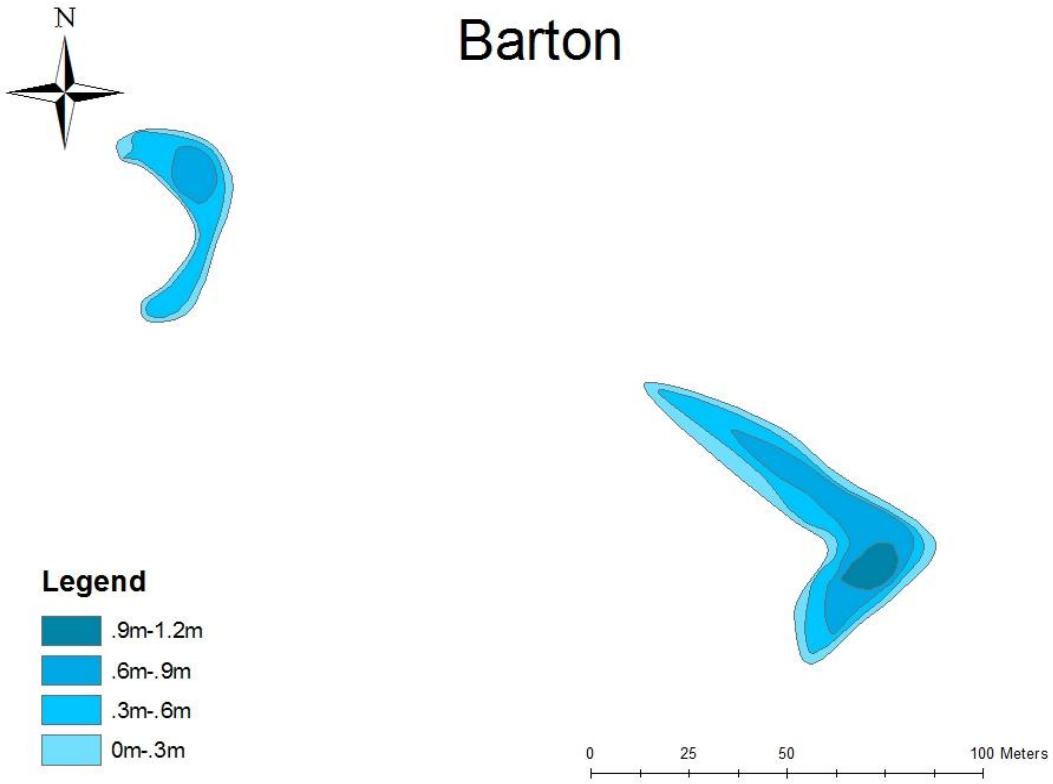
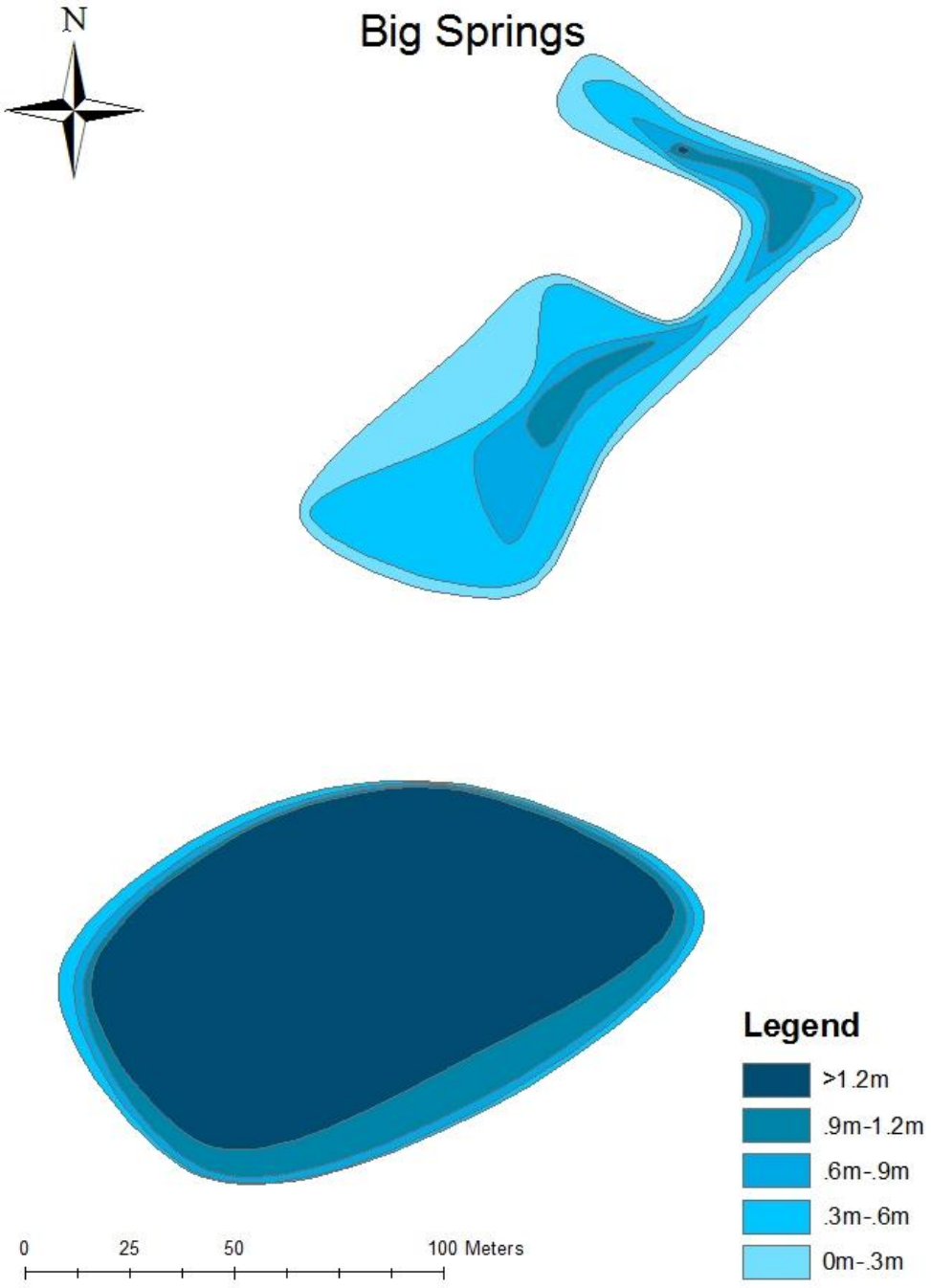
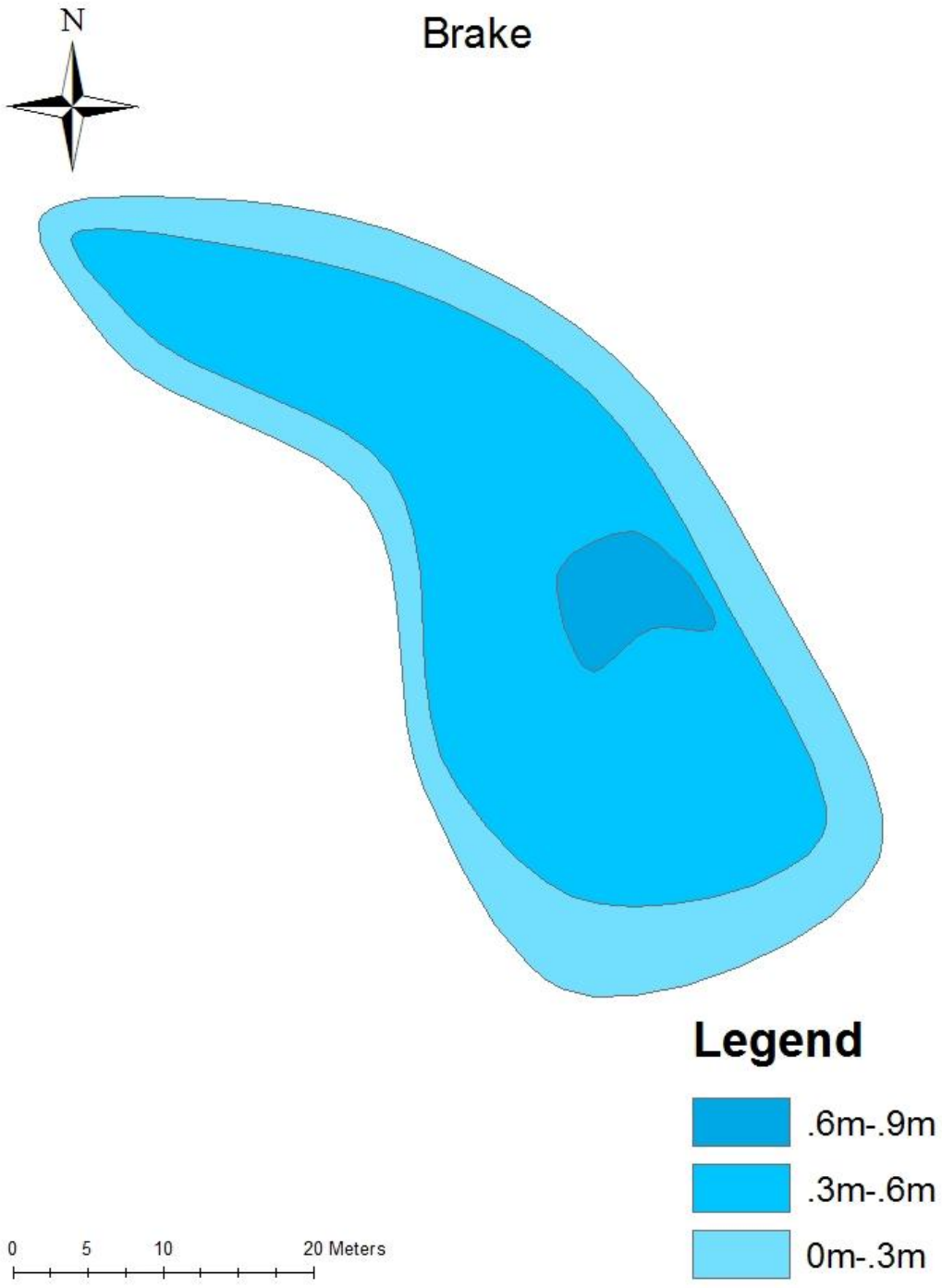


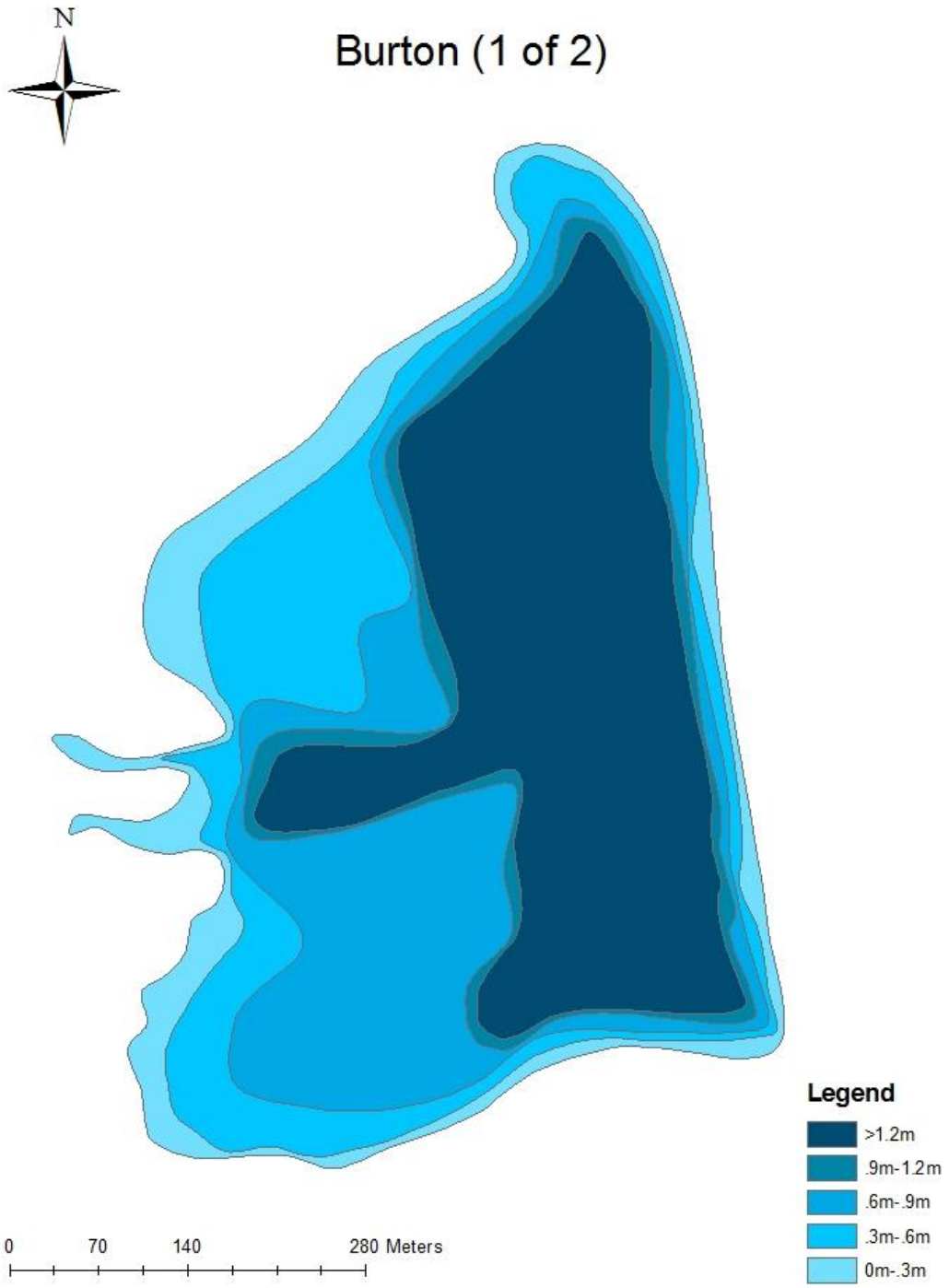
Figure 5. Probability of occurrence of great blue heron (*Ardea herodias*) in a 2010 study done on 15 restored wetlands in the Ridge and Valley Region of Pennsylvania.

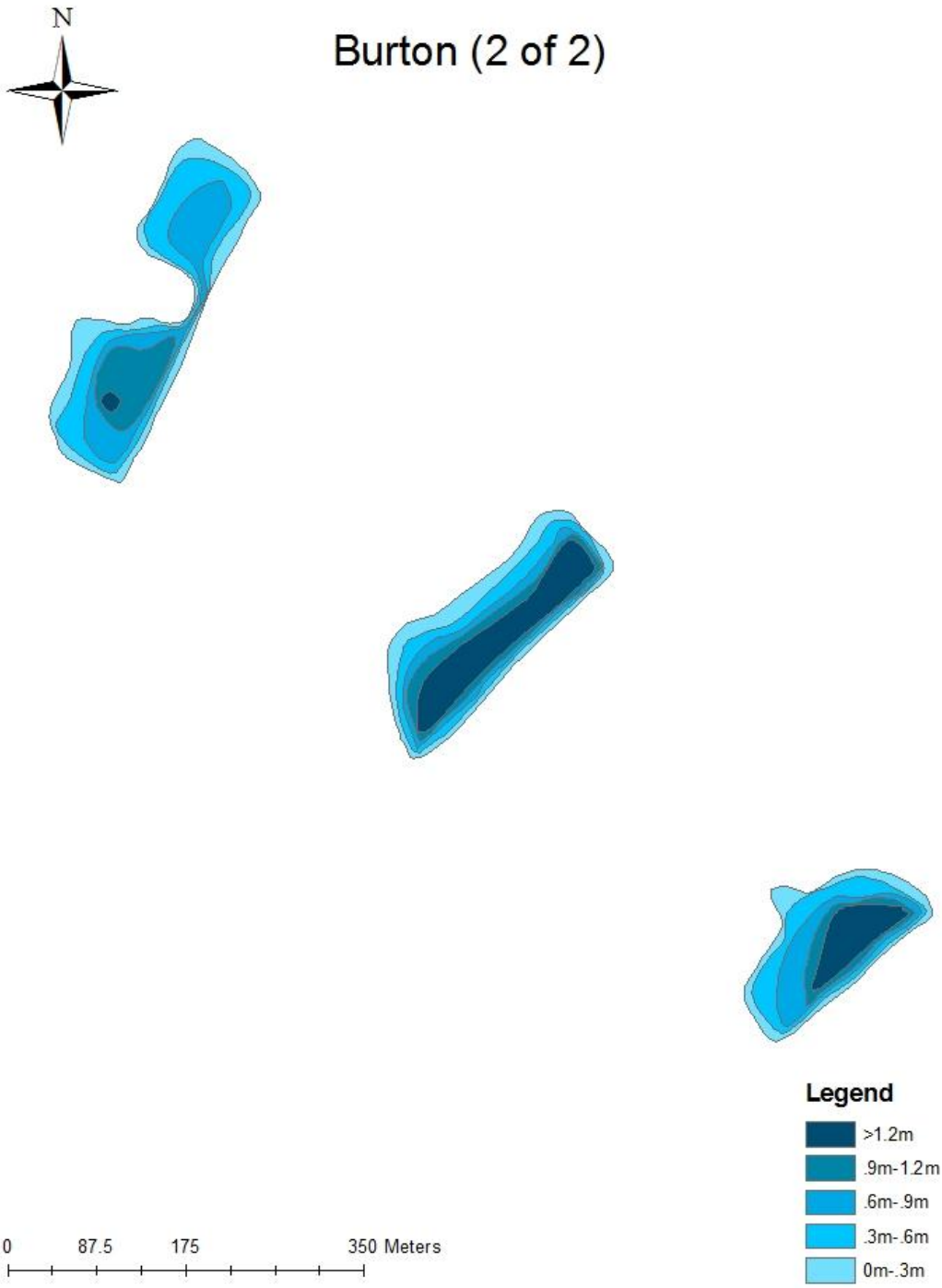
Appendix A. Water depth maps of 15 restored wetlands surveyed in the Ridge and Valley Region of Pennsylvania in 2010.

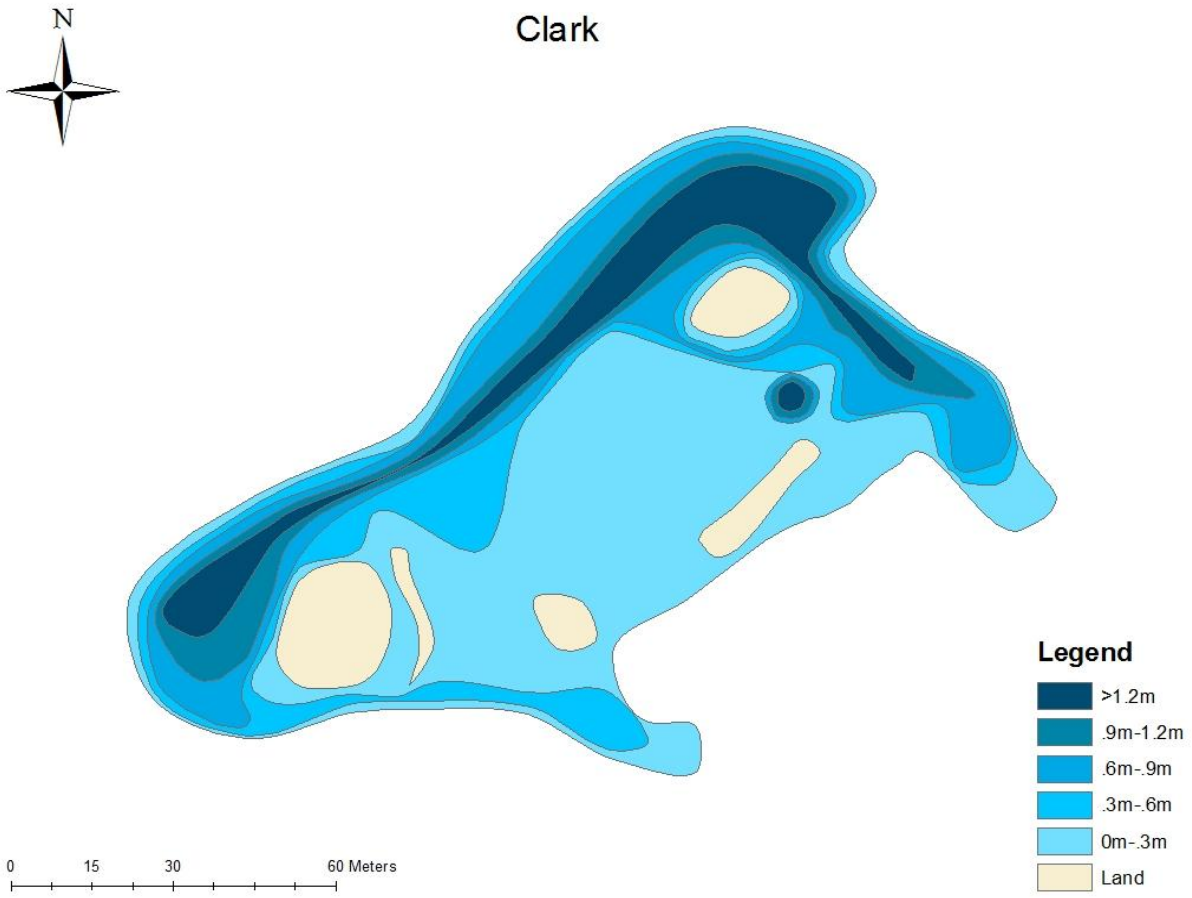

N
Barton
Legend
.9m-1.2m
.6m-.9m
.3m-.6m
0m-.3m
0
25
50
100 Meters

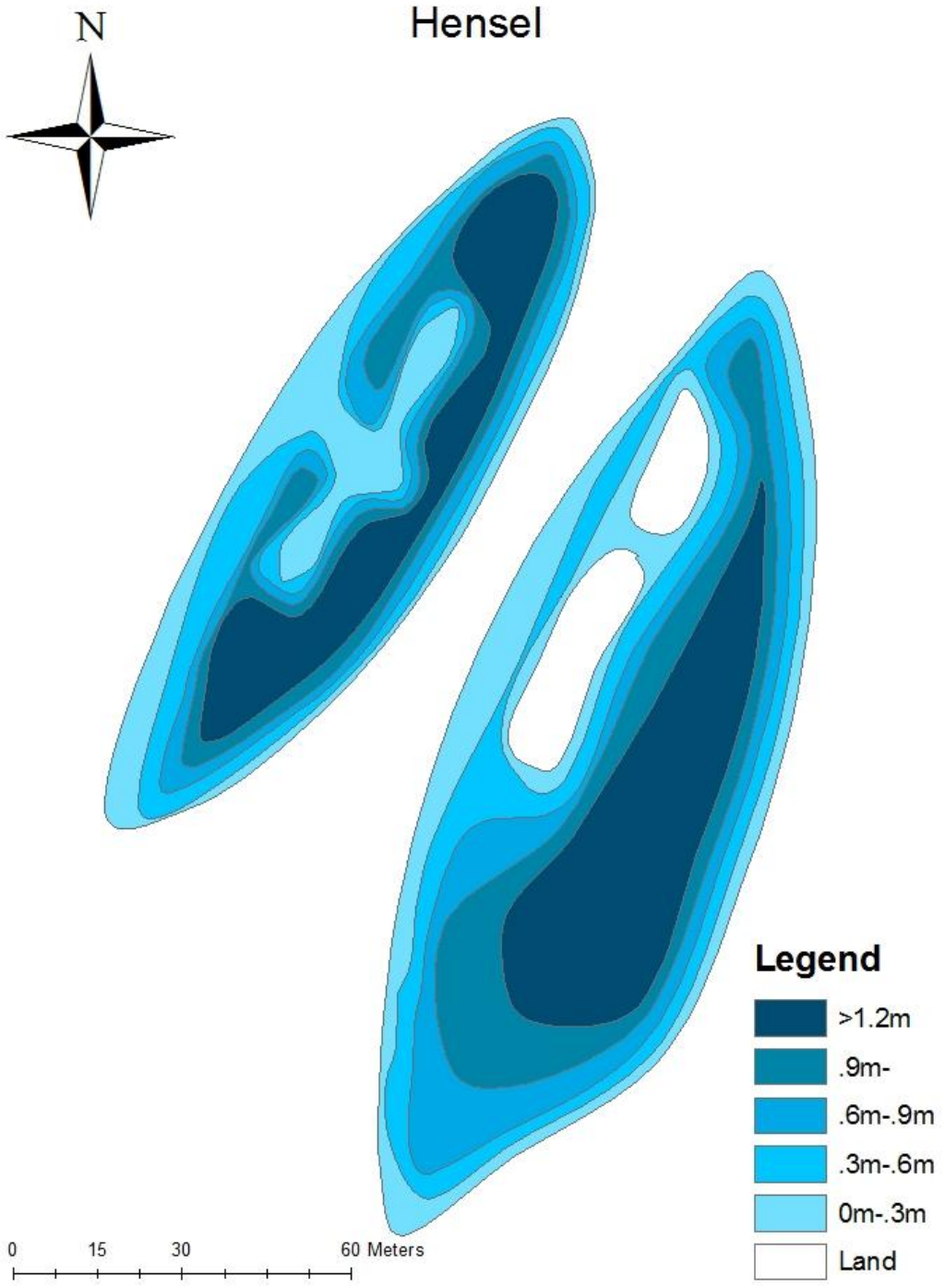

N
Big Springs
0
25
50
100 Meters
Legend
>1.2m
.9m-1.2m
.6m-.9m
.3m-.6m
0m-.3m


N
Brake
Legend
.6m-.9m
.3m-.6m
0m-.3m
0
5
10
20 Meters


N
Burton (1 of 2)
0
70
140
280 Meters
Legend
>1.2m
.9m-1.2m
.6m-.9m
.3m-.6m
0m-.3m


N
Burton (2 of 2)
Legend
>1.2m
.9m-1.2m
.6m-.9m
.3m-.6m
0m-.3m
0
87.5
175
350 Meters


N
Clark
0
15
30
60 Meters
Legend
>1.2m
.9m-1.2m
.6m-.9m
.3m-.6m
0m-.3m
Land


N
Hensel
Legend
>1.2m
.9m-
.6m-.9m
.3m-.6m
0m-.3m
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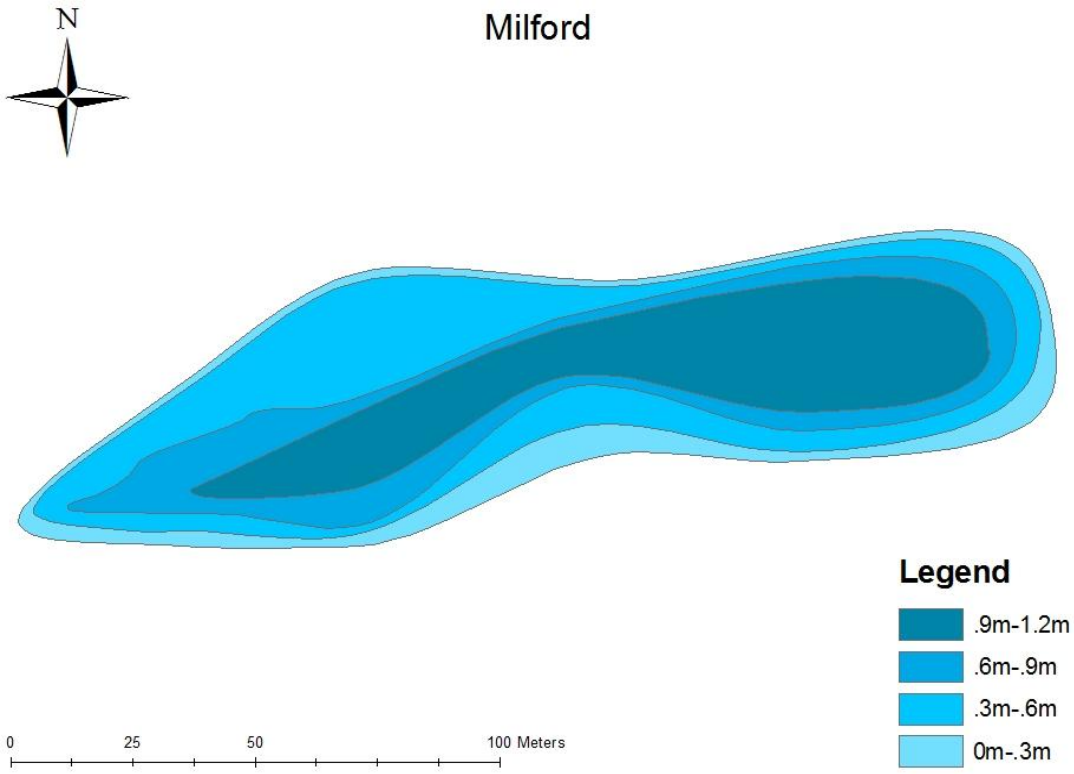
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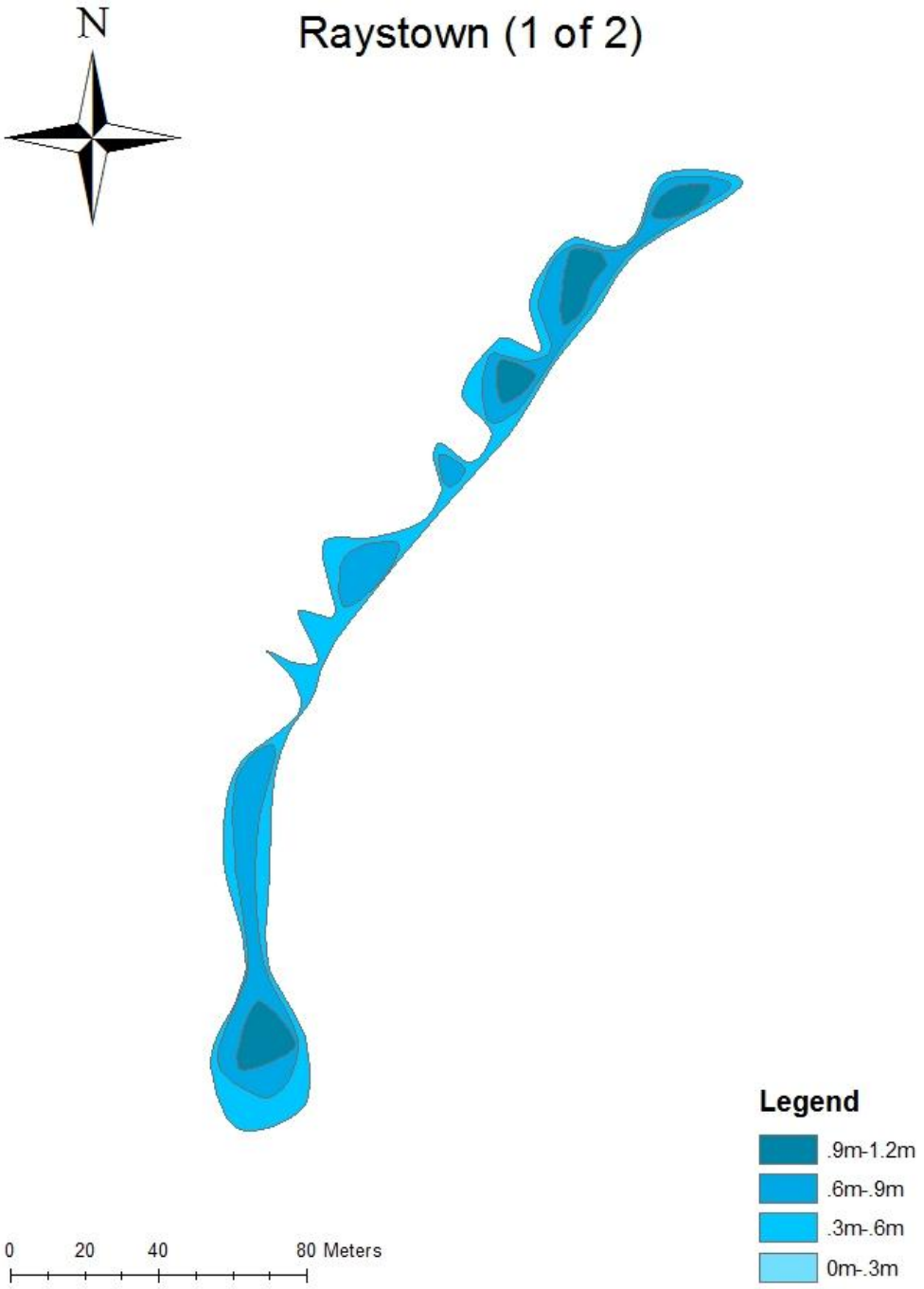
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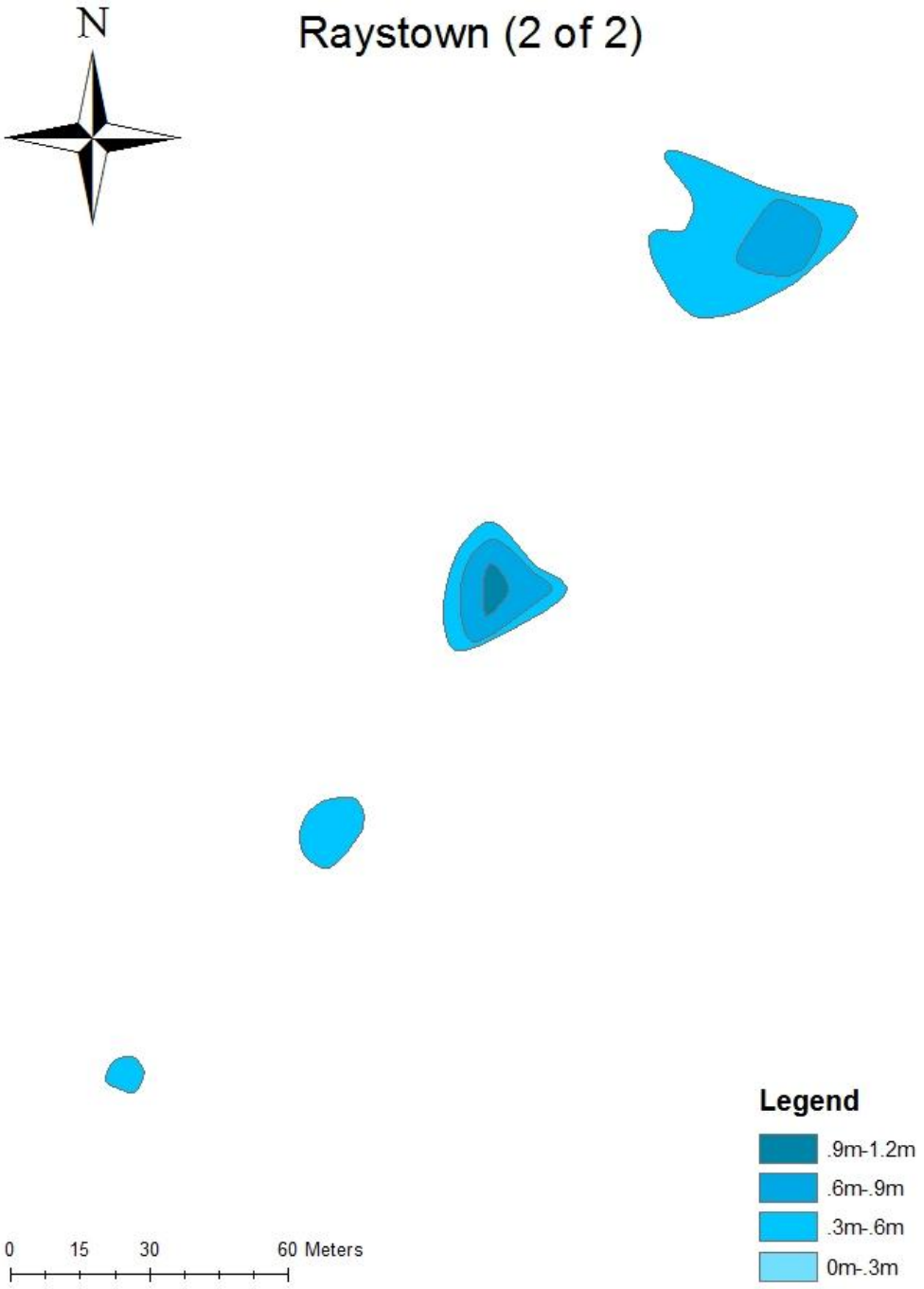
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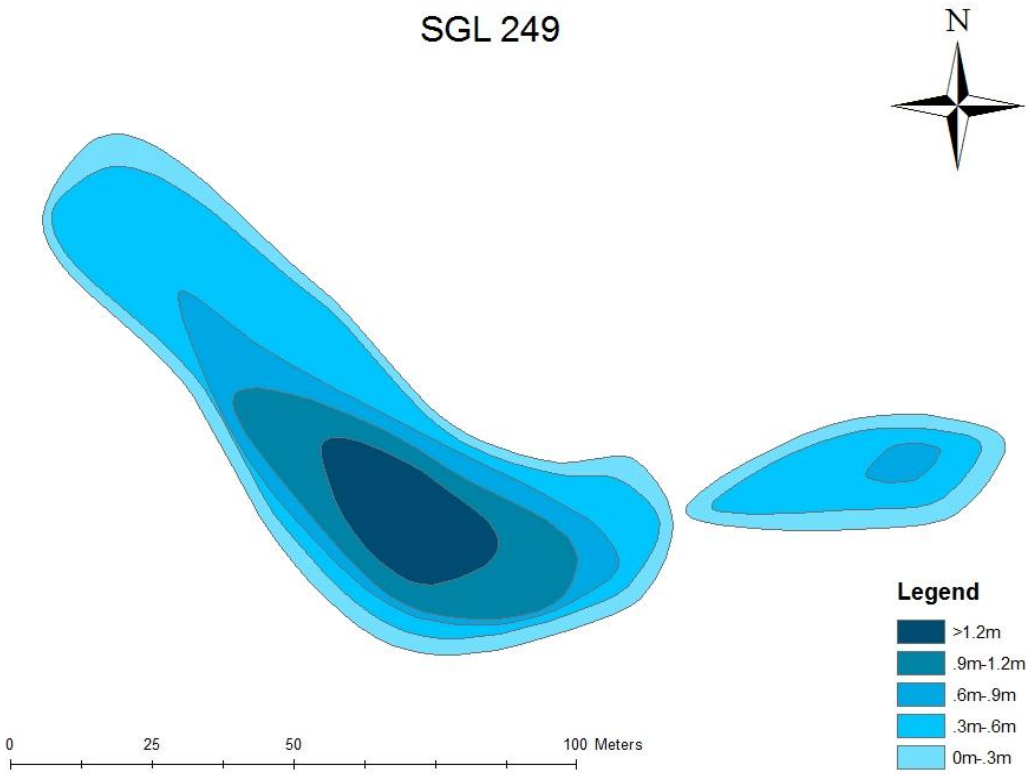
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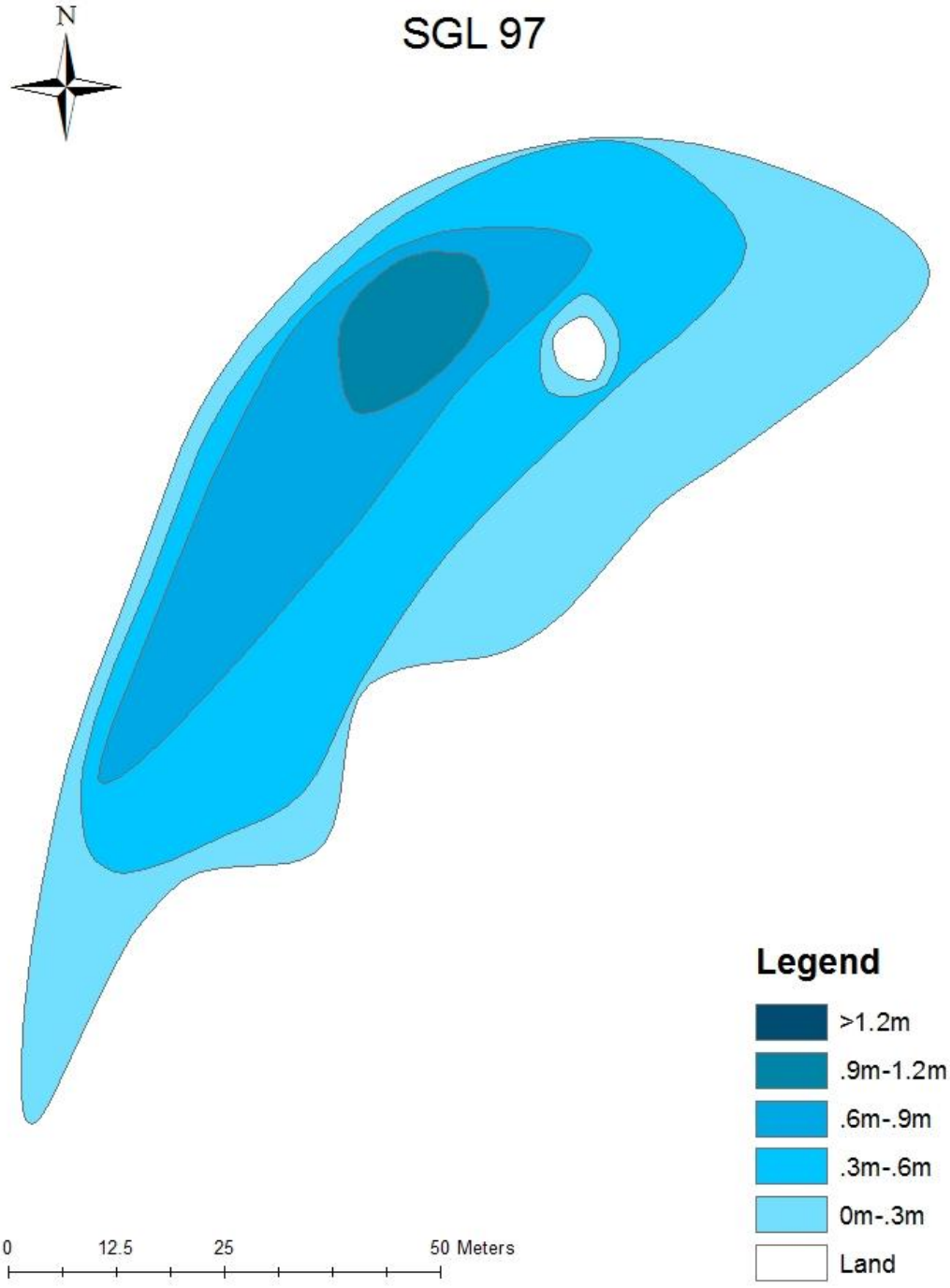
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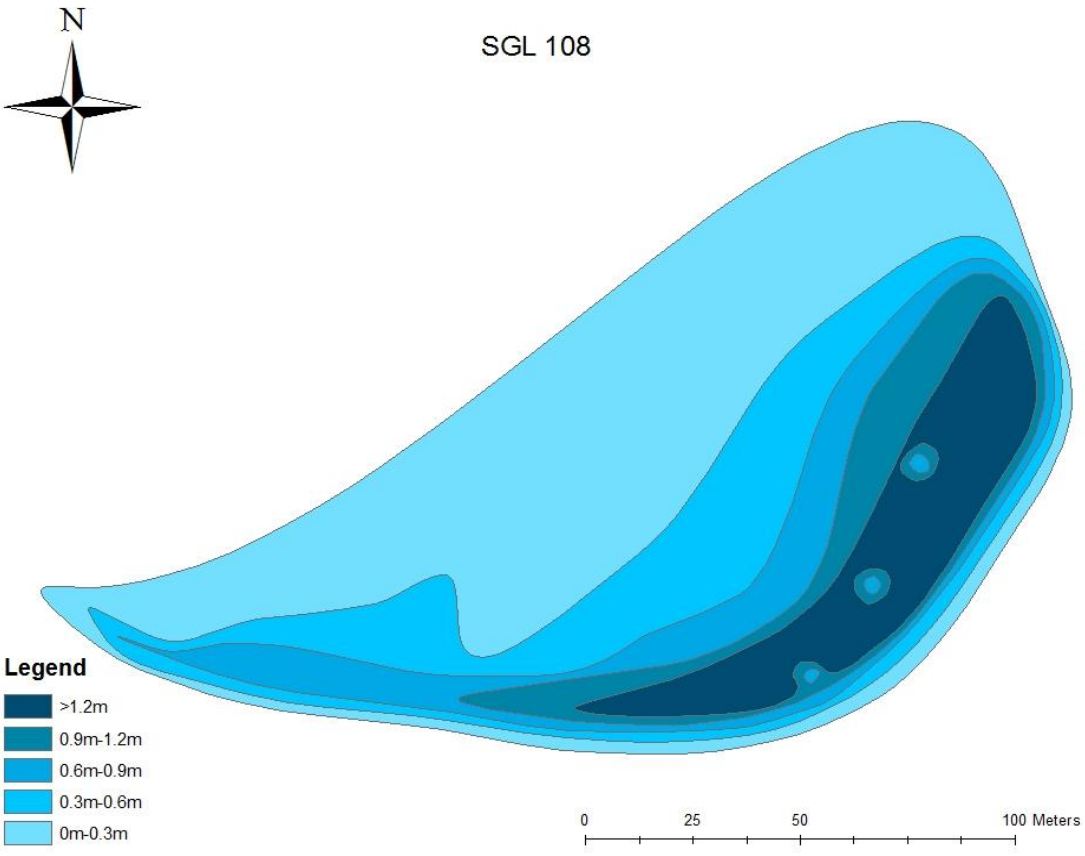
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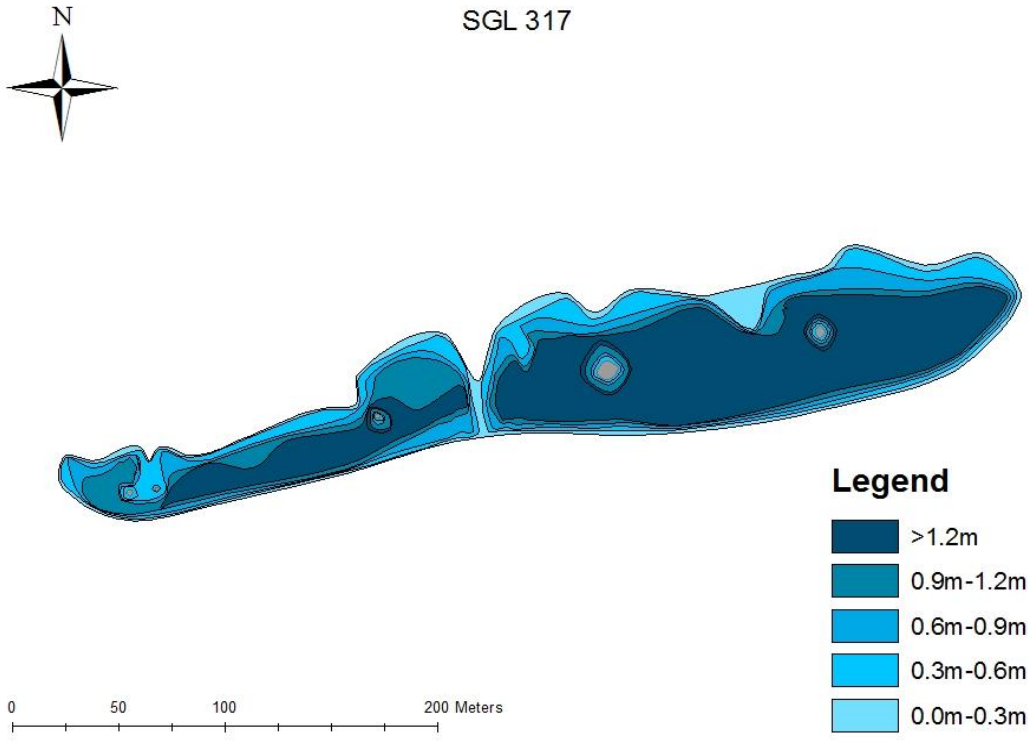
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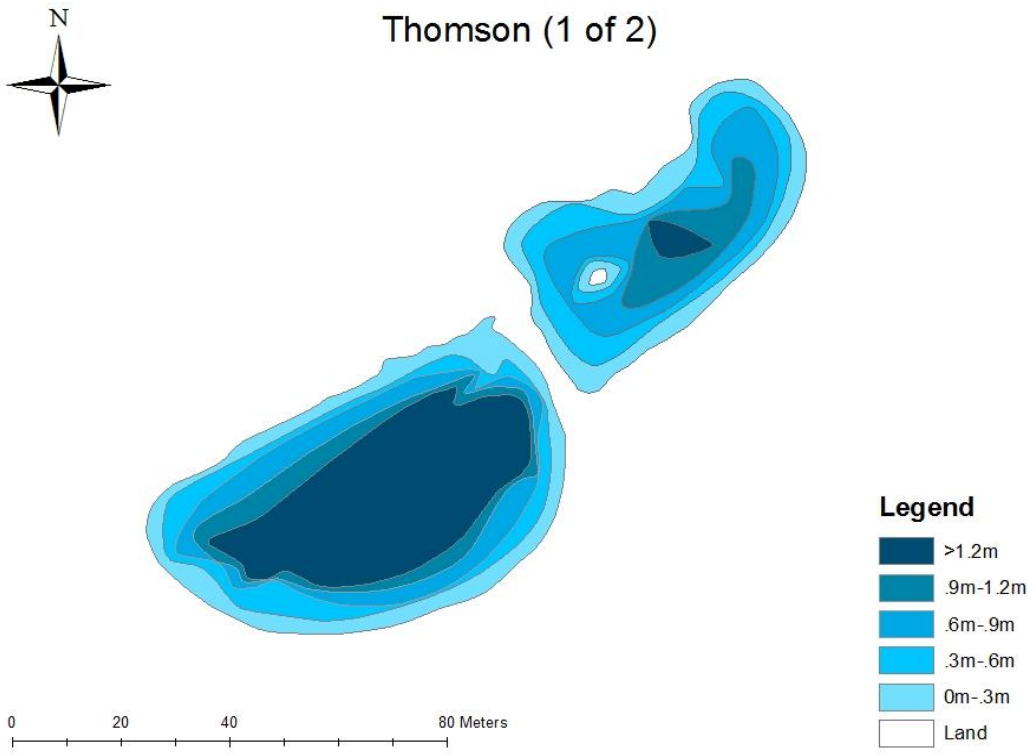
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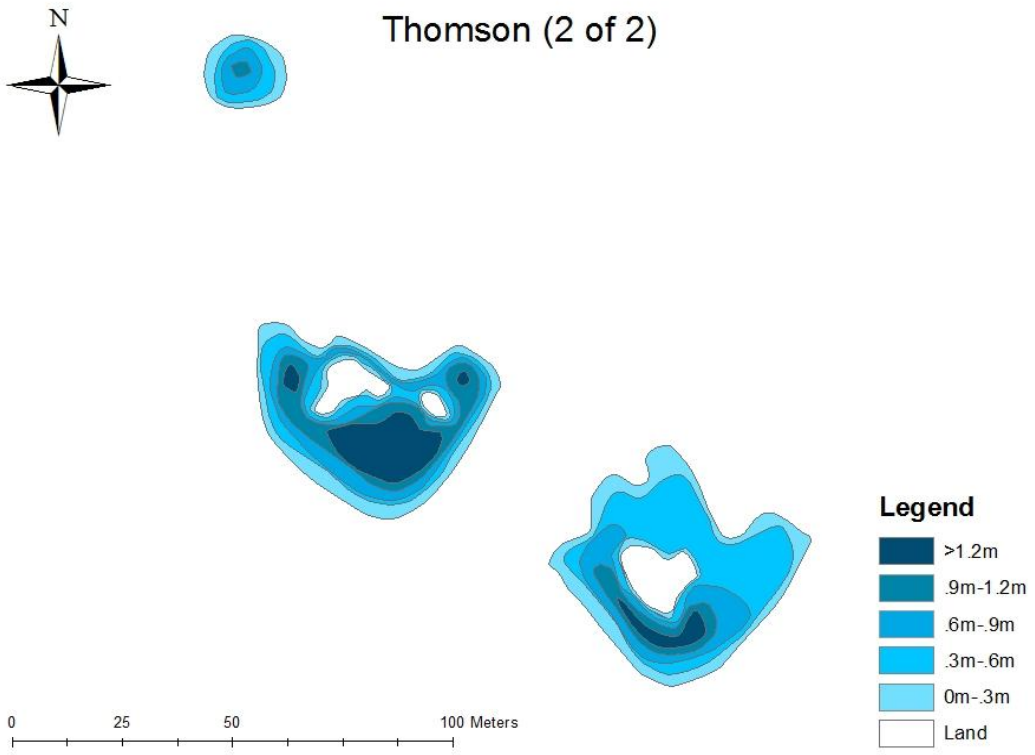
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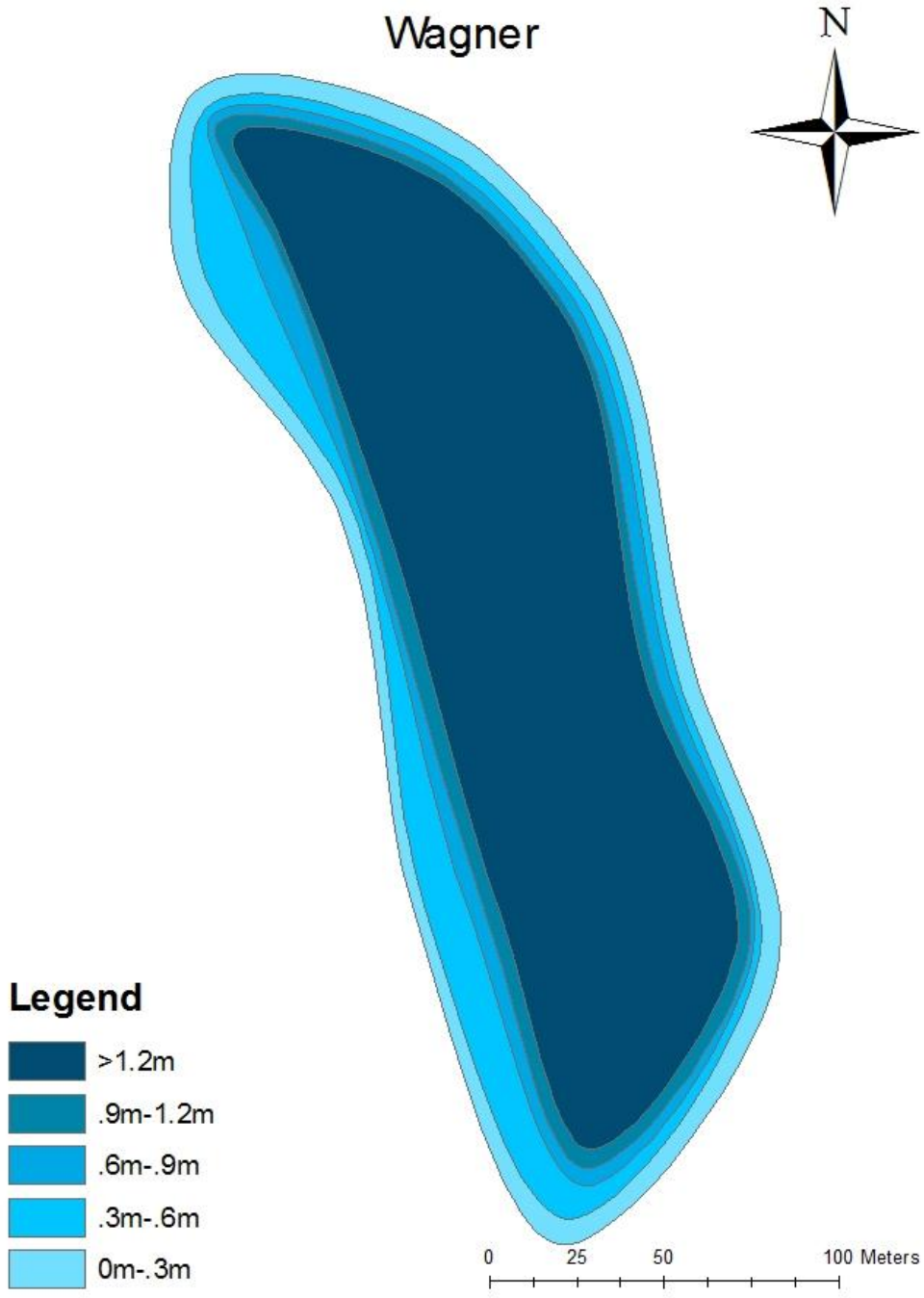
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"For me, it was just routine:" Exploring Factors Related to Post-Secondary Aspirations for African Immigrants

Autumn A. Griffin, McNair Scholar
The Pennsylvania State University

McNair Faculty Research Advisor:
Kimberly A. Griffin, PhD
Assistant Professor of College Student Affairs and Higher Education
Center for the Study of Higher Education
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Abstract

This qualitative study increases our understanding of the factors and forces which encourage African immigrant students to choose to attend college (the predisposition phase of the college-choice process). Researchers interviewed 13 African Immigrant students (the children of African immigrants or immigrants themselves) enrolled at Central University. Analyses reveal parents and family and early schooling are the most influential factors when deciding to attend college. Importantly, findings suggest parents and family members encourage students' desire to attend college by connecting achievement to cultural values, consistently demonstrating and reinforcing the importance of a college education.

Introduction

At Harvard's 2004 Black alumni reunion, one of the highlights of discussion was the increase in the number of Black students attending the university (Rimer & Arenson, 2004). Although Black alumni were pleased to learn that 8 percent of the undergraduate student population at Harvard is Black, Henry Louis Gates Jr. and Lani Guiner pointed out that about two thirds of the "Black population" was composed of Black immigrants: the children of African or Caribbean/West Indian immigrants or immigrants themselves (Rimer et al., 2004). Discussion sparked a question that seemed to catch fire at colleges and universities across the US: top colleges are taking more Blacks, but which ones?

The number of Black immigrants in the United States has more than doubled over the past decade, increasing from one to eight percent (Charles, Massey Mooney, & Torres, 2007; Kent, 2007). Consequently, there has been a substantial increase in the number of Africans attending US colleges and universities in the past several decades (Massey, et. al 2007; Kent, 2007). In fact, currently, 10.9% of all post-secondary students are foreign-born (US Census Bureau, 2004). During the 1990s, between 17,000 and 18,000 Africans were enrolled in college each year, and there have been over 30,000 African students enrolled in college each year since 2001 (Kent, 2007). Many African immigrants come to the US seeking educational opportunities and once here, more than one fourth of immigrants and their children obtain college degrees as tools for socioeconomic mobility (Douglass, Robeken, & Thompson, 2007).

In 2007, Massey and colleagues used data from the National Longitudinal Study of Freshmen (NLSF) to study Black immigrants and Black natives (those who have been in the

United States for at least two generations) who attend colleges and universities in the United States. In addition to finding Black immigrants are overrepresented in the general Black student college population as compared to their presence in the US population, researchers found Black immigrants are especially highly represented at selective institutions. In fact, in 2007, Black immigrants made up 36 percent of Black students at the most highly selective colleges and 24 percent at the ten least selective schools in the sample (Massey, et. al, 2007). The same study revealed that 41 percent of Black students on the campuses included in the study identified themselves as immigrants, children of immigrants, or mixed race (Massey et. al, 2007). This study suggests that when it comes to education, Black immigrants fare better and are more likely to gain access to higher education than their African American counterparts.

While research shows Black immigrants tend to be more likely than native Blacks to attend college generally and selective colleges in particular, there is little understanding of why this occurs. Minimal research has been done on the success and access of Black immigrant students (e.g., Massey et. al., 2007; Kent, 2007); however there continues to be little work on when and what influences Black immigrants to decide to go to college. Hossler and Gallagher (1987) suggest that choosing to attend college is a three-stage process including predisposition, search, and choice. Predisposition is defined as the early stage of the college process (Stage, 1992) when students begin to develop an attitude towards higher education (Hossler & Gallagher 1987).

Researchers suggest that the major influences on a student's predisposition to attend college include family and student background characteristics, parents' educational expectations, students' level of involvement, student achievement, socioeconomic status, ethnicity, gender, and high school quality (e.g. Freeman, 2005; Hamrick & Stage, 1998; Hossler & Gallagher, 1987; La Nasa, 2000; Perna, 2000, 2006; Stage, 1992). Generally little is known about the specific college choice process and factors influencing predisposition to attend college for underrepresented groups (Perna, 2006), and this is especially true of African immigrants. This study will answer the following question: what forces play a role in the predisposition phase of the college-choice process for African immigrants and to what extent do these factors have an influence?

This study will shed light on the predisposition phase of the choice process and what encourages African immigrants to express their desire to attend college. The findings will provide useful information to parents and administrators who seek to replicate the success of African immigrant students for future students, enabling them to encourage students to pursue a college education. In addition, it will help parents and administrators to understand an understudied population that is growing in the US. Furthermore, research about this understudied population will assist in making college a reality for everyone by teaching us more about how African immigrants are encouraged to attend college.

Literature Review

In their article *Studying Student College Choice: A Three-Phase Model and the Implications for Policymakers* (1987), Hossler and Gallagher propose a three-phase model regarding the college-choice process of students: predisposition, search, and choice. While search and choice focus on the latter part of the college-choice process, predisposition is where the thought of possibly attending college first occurs (Hossler & Gallagher, 1987). During this

phase, students begin to develop an attitude, or predisposition, towards college (Hossler & Gallagher, 1987). For many students it is the first time they begin to consider college seriously. Some researchers (e.g. Freeman, 2005; La Nasa, 2000) suggest that the predisposition phase of the college-choice process begins as early as the seventh or eighth grade. During the predisposition phase, students weigh all possible benefits and costs of enrolling in college before making a decision about whether or not to attend (Perna, 2000).

While it is clear that this phase exists, little is known about what factors drive students to begin considering college. Certain background characteristics seem to be positively correlated with the desire to attend college (Hossler & Gallagher, 1987). The most common influences on a student's predisposition towards college include personal academic ability, parents, socioeconomic status (SES), peers, and school quality (Stage, 1992; La Nasa, 2000; Hossler & Gallagher, 1987; Perna, 2006; Freeman, 2005; Perna, 2000; Hamrick & Stage, 1998). This section will review the forces most often discussed amongst scholars, and relate them to the predisposition of African immigrants towards college.

Personal Academic Ability

According to Hossler and Stage (1992), a student's ability is positively correlated with a predisposition towards college. Around the time students choose whether or not they would like to attend college, they have usually already begun to assess their own academic ability. As a student's ability level increases, he or she is more likely to engage in the college-choice process at an earlier age (Hossler & Gallagher, 1987). Thus, students with greater academic abilities, preparation, and achievement tend to be more likely to express interest in college (Perna 2006). Research has shown that Black immigrants are among the most highly educated immigrant group with some of the highest rates of academic ability, scoring significantly higher than native African Americans on the SAT (Kent, 2007; Massey et. al, 2007; Lutz, 2009). These previous findings suggest that because of their demonstrated academic performance, Black immigrant students might be more likely to start thinking about college earlier than their native Black peers.

One clear sign of a predisposition towards college-going is the academic track a student may choose or within which they are assigned. According to Hossler and Stage (1992), being in a rigorous academic track, which includes college preparatory or advanced placement classes, has a positive impact on the predisposition phase of the college choice process. In fact, academic track has proven to be a better indicator of eventual college enrollment than grades (Hossler & Stage, 1992; Hossler & Gallagher, 1987). La Nasa (2000) suggests that an academic track allows students to value a particular occupation or goal and schedule a college-track curriculum which will prepare students for post secondary education.

Students who are more prepared for college tend to have a greater initial stock of human capital: higher productivity rates which are attributable to "differences in investments that individuals make in their personal developments," which includes the quality and quantity of their education (Perna, 2006, p. 106). Black immigrants realize the importance and value of human capital, particularly education and occupational status (Massey et. al, 2007), as indicated by their high enrollment rates in selective colleges and universities.

Parental Influence

Parental influence has been noted by researchers as one of the strongest factors in predicting students' early educational plans (La Nasa, 2000; Perna, 2006). Students with college-educated parents are more likely to consider college (Freeman, 1999; Perna, 2000) and place more value on getting a college education (Perna, 2006). Studies have shown that each year of

parental education increases the likelihood of a student's college attendance by 6 percent and encourages students to begin thinking about college earlier in life (Hossler & Stage, 1992). Parental encouragement is often the result of a parent's own educational attainment. If parents have attended college, they are more likely to suggest college to their children. Students with college-educated parents tend to have more access to information about how to obtain a college education (Perna, 2000) and research suggests that parental encouragement may raise a student's educational aspirations (Perna, 2006). Literature suggests that the expectations of immigrant parents raise children's expectations of college attendance (Keller & Tillman, 2008). As parents' expectations increase, so do students' achievements and their chances of attending a postsecondary institution (Hossler & Stage, 1992). For example, Dailey (1981) suggests that college attendance is determined by some parents for their children even before they enter the first grade. Thus, these students grow up always knowing they will attend college.

According to Massey's study (2007), 70 percent of fathers of Black immigrant freshmen were college graduates and 44 percent held advanced degrees. The high educational attainment level of immigrant parents and the success of immigrant students in selective colleges suggest there is a positive correlation between parents' education level and the predisposition phase of the college-choice process for Black immigrant students. Because Black immigrants are likely to have parents, particularly fathers, who have attended college, they may be more likely to begin the predisposition phase at an early age and grow up knowing that someday they will attend college.

Socioeconomic Status

As students go through primary and secondary school, many are motivated to attend college because of the promises of increased lifetime earnings and the opportunity to shrink the income gap (Perna, 2006). Many students realize that a college education and the economic capital that comes along with it are major factors in socioeconomic success (Freeman, 1999). Parental education and income directly affect socioeconomic status and have an effect on college enrollment beginning in preschool; as family income and education level increase, students begin to think more seriously about postsecondary plans at an earlier age (Stage, 1998). Students from high-income families are four times more likely to attend college than those who come from a low socioeconomic background (Hossler & Gallagher, 1987; Perna, 2006). Students from low socioeconomic backgrounds also tend to have less access to information about college (La Nasa, 2000) and therefore, are less likely to develop a predisposition towards college.

While native Black students tend to be from lower socioeconomic backgrounds (Perna, 2006), African immigrants are significantly more likely than their African American counterparts to come from intact two-parent households, have educated fathers, live in less segregated neighborhoods, and attend private, rather than public schools (Massey et. al, 2007; Lutz, 2009; Kent, 2007). These particular characteristics are consistent with students from higher socioeconomic backgrounds. Therefore, based on these differences, it can be hypothesized that African immigrants tend to come from higher socioeconomic backgrounds than native Blacks, and are more likely to be predisposed to attending college. Because native Blacks tend to come from lower socioeconomic backgrounds, they oftentimes have less access to information about college, and as a result may not be predisposed to the possibility of college at such an early age.

Peers

Peers play an important role in student development (Perna, 2000; Stage, 1992). Therefore, their influence on the predisposition phase of the college choice process is one that is

worth exploring. Research suggests that peer influence is greater than parental influence, especially in terms of motivation to complete homework and maintain good grades. If a student associates him or herself with students who choose to complete homework and maintain good grades, chances are, he or she will do the same (Perna, 2000; Stage, 1992). Likewise, students with friends who have plans to further their education are more likely to attend college themselves (Hossler & Gallagher, 1987). Students who do not have plans to attend college are influenced by peers more than those who plan to pursue postsecondary education (Stage, 1992). The findings of Perna (2000, 2006), Stage (1992), and Hossler and Gallagher (1987) have shown peers can have either a positive or negative affect on a student's predisposition towards college.

Black immigrants, however, seem to be less influenced by peers than other students. Literature suggests that Black immigrants are less susceptible to peer influence and tend to have more diverse friend bases than native African American students (Massey et. al, 2007). While native Blacks have, on average 5.9 friends of the same race, Black immigrants only have 4.7 (Massey et. al, 2007). Black immigrants tend to associate with a wider range of ethnicities, particularly Asian and Latino, and as a result, have more access to information about college education (Massey et. al, 2007). By limiting their scope of friends, native Blacks tend to have less cultural capital or opportunities which "facilitate upward mobility" (Perna, 2006, p. 111). Because the friends of Black immigrants tend be more culturally diverse and are more likely to have parents who attended college (Massey et. al, 2007), they are able to provide Black immigrants with useful information about college.

School Quality

Literature suggests that school quality may be one of the most important influences in the predisposition phase of the college-choice process after peer and parental influence. Quality high schools (that is, schools whose mission and curriculum prepare students for college), are major predicators of college and have a positive impact on predisposition (Stage, 1992). The quality of a school can determine the academic track a student will be placed in, the amount of attention he or she will receive from teachers and counselors, and at what age students begin to consider college (Perna, 2006). Physical conditions of the school and assistance from teachers and counselors both play a role in the decision-making process (Perna, 2000). Individuals who have more access to information about college and are better prepared for college by their school are more likely to take the decision of college more seriously and enroll in a postsecondary institution (McDonough, 1998; Perna, 2006*).*

In addition, literature suggests that private schools better prepare students for college than public schools (Lutz, 2009; Perna, 2006). Private schools tend to have more rigorous academic tracks and more access to information about college. They tend to be more competitive regarding grades, and encourage students to do the best they can academically (Perna, 2006). Private schools are also able to offer more resources to students as they begin to think about college during the predisposition phase of their college-choice process (Perna, 2006). Because Black immigrants are more likely to attend private school than native Blacks (72 and 58 percent respectively) (Massey et. al, 2007), it is possible that Black immigrants are both better prepared for college and begin the predisposition phase of the college choice process earlier.

Methods

Although researchers have revealed factors which matter generally in the college choice process and have highlighted college choice for Black students in general, we cannot assume that the same things matter for Black immigrant students. The research neglects to comment on such factors as the role of extended family, cultural capital, childhood experiences, and knowledge of the importance of education specifically for Black immigrant students as they make decisions about attending college.

This study will examine the potential influence of these factors more closely and explore the extent to which they influence the predisposition of Black immigrants towards college by answering the question "What factors and forces encourage African immigrant students to engage in the predisposition phase of the college-choice process?"

Institutional Site

Data used to address this question were collected from students enrolled at Central University. Central University is a large, East Coast, public research university. It is classified by the Carnegie Foundation as a full-time (97% full-time, 3% part-time students), four-year, more selective (51% admit rate), lower transfer-in institution. Approximately 45,000 students are enrolled at Central; 38,000 are undergraduates. Black/African Americans are 3.5% of the undergraduate student population (1,400 students). Enrollment data is not kept on the number of Black students from immigrant backgrounds, however, 4,621 students are international. Approximately 71.3% (27,557 students) of students are from within the state, and about 28.7% (11,073 students) are out-of-state students. In addition, 45.2% (20,280 students) are female and 54.8% (24,442 students) are male. On average, incoming students have average GPAs between 3.52-2.97 and SAT scores between 1,750-1,990.

Sample

This study is part of a larger, more comprehensive project entitled "Exploring Educational Experiences of Black Immigrants" (EEEBI), and data was collected from both African and West Indian/Caribbean immigrant students. All participants met three criteria: they were full time students at Central University, self-identified as Black, and either they or one of their parents were not born in the United States. Detailed information on the participants can be found in Table 1.

Twenty-three total students (18 females, 5 males) agreed to participate. The sample includes four Freshmen, five Sophomores, five Juniors, and eight Seniors. Thirty five percent (8 students) of the students in the sample were between the ages of 17-19, 57 percent (13 students) were between the ages of 20-21, and the remaining 9percent (2 students) were either 22 or 23 years old. In the sample, 70 percent (16 students) are second generation or US-born, and the remaining 30 percent (7 students) were first generation, or born outside of the US. Students represent a diverse set of countries, including: Chad, Haiti, Jamaica, Nigeria, St. Vincent, and Zambia.

For the current study, data collected from the thirteen students from African immigrant backgrounds were analyzed. The sample includes 10 females and three males, four freshmen, one sophomore, four juniors, and four seniors. Seven of the students are US born (second generation immigrants), and six were born in African countries (first generation immigrants.

Procedures

Several strategies were utilized to recruit participants. First, researchers identified organizations on campus which were likely to include Black immigrants (e.g. ethnic/cultural groups, Black student unions, etc.) via an on-line list of Central University student organizations.

Organization presidents were contacted and asked to disseminate a recruitment e-mail. Flyers advertising the study and inviting the students to participate were also posted in academic buildings. Finally, snowball sampling (Bogdan & Biklen, 1998) was used. Participants were asked to talk with others who were potentially eligible to participate, suggesting potential participants contact the researchers to schedule a time to participate at their convenience.

Table 1: Demographic Characteristics of Participants in Sample

Name	Gender	Generational Status	Academic Year	College
Christina	Female	1	Freshman	Life Science
Estelle	Female	1	Freshman	Liberal Arts
Gayle	Female	2	Junior	Liberal Arts
Isabelle	Female	2	Junior	Life Science
Kayla	Female	1	Sophomore	Engineering/Liberal Arts
Nester	Male	2	Senior	Life Science
Olive	Female	1	Freshman	Life Science
Patricia	Female	2	Senior	Health and Human Development
Stacy	Female	1	Senior	Business
Tiffany	Female	2	Senior	Health and Human Development
Umar	Male	1	Freshman	Life Science
Vivian	Female	2	Junior	Liberal Arts
Wayne	Male	2	Junior	Communications

Data for this study were collected during the 2009-2010 academic year. All students participating in the study were invited to share their narratives during an interview with a member of the research team. To ensure confidentiality, all participants were assigned pseudonyms. All students received $10 for their participation.

Prior to each interview, participants completed a brief demographic questionnaire, which asked for information such as age, citizenship status, country of origin, and educational level of the participants' parents. Participants then engaged in 1-on-1 semi-structured (Bogdan & Biklen, 1998) interviews, lasting between 60 and120 minutes. All participants were asked for permission to record interviews for verbatim transcription. The interview protocol was designed to collect a broad sense of students' cultural, family, and educational experiences throughout

their lives. Questions addressed students' childhood and adolescent experiences, journeys to higher education, cultural influences on educational experience, and career goals and aspirations.

Data Analyses

After all interviews were transcribed, transcripts were cleaned, or read while listening to the original recording of the interview to correct any errors. Qualitative data were then organized through a systematic coding process involving deductive and inductive methods. During the deductive phase, an initial list of codes was composed based on the questions asked on the protocol and research on the predisposition phase of Hossler and Gallagher's model of college choice (1987). The researcher then engaged in a critical review of the literature to identify the forces that have been identified as being related to college predisposition, and codes representing these findings were also added to the codebook. A list of themes was developed reflecting these factors, allowing for exploration of whether or not these items were mentioned in the interviews. Interview transcripts were then carefully read and the researcher wrote memos, discussing the researcher's thoughts on the themes emerging from the data. Consistent with this inductive process, the initial list of codes was amended to include the full range of experiences described.

Consistent with methods outlined by Bogdan and Biklen (1998) and Merriam (1998), data were then re-read, coded, and organized based on emerging themes. After the transcripts were read and cleaned, memos (notes which described the emerging themes) were written down and checked against the data. Themes with similar underlying principles were clustered together, reflecting the ways in which various factors and experiences influenced each stage of participants' development of a predisposition to attend college. Finally, a report was written based on the coded data and revised ideas and themes.

Limitations

While this study is useful for future research, it is important to note that like all research, there are a number of limitations. First, because the study was conducted at one university, is a qualitative design, and not all of the African immigrants on the campus were interviewed, the study cannot be generalized to the entire population of African immigrant college students in the United States. In addition, the majority of the students in the sample are from the north eastern region of Africa, thus it may not capture the experiences of those from other regions. Furthermore, this study only has two male participants and perhaps speaks more to the factors related to developing a predisposition to attend college amongst female Black immigrant students. Future research should expand upon the number of institutional sites, aim to include students from a larger range of African countries, and attempt to recruit more males to balance out the dominant female voice presented in this study. Although qualitative research is typically not generalizable, by expanding the study, both researchers and educators will be able to more accurately determine the factors which generally influence Black immigrant students decisions to attend college.

Furthermore, all of the participants in the study can be generally classified as high achievers because they are in college. Future research on African immigrants should consider interviewing those students who may have dropped out of college, those who attended community college, and those who did not attend college at all. Doing so would enable researchers and educators to understand if there are certain experiences and influences which influence students' decisions to attend college and whether or not these experiences and

influences have the same affect on all students. Because the institution the study was conducted at was a predominantly white, public institution, future research should also interview students at historically Black colleges and universities as well as private institutions.

In addition, this study only addresses the predisposition phase of the college-choice framework developed by Hossler and Gallagher (1987). In order to gain a more thorough understanding of how students participate in the college-choice process, future research should look into how students engage in both the search and choice processes as well.

Findings

It is important to note that all of the students in the sample had high aspirations. All of the students mentioned that they knew early on that they would eventually attend college. Students indicated that they first began to think about college in or before elementary school or during middle school. Christina noted, "Oh, I always knew." Other students, such as Isabelle indicated that they knew "pretty much as [they] entered elementary school." Like Christina and Isabelle, many students grew up knowing or said that it was expected for them to go to college. As a result, college was their ultimate goal throughout their secondary educational career, indicating that for these students, the predisposition phase appears to start much earlier than what literature suggests for other students.

The study found that among all of the factors which influence African immigrants' decisions to attend college, early schooling, high school, and parent expectations and guidance were of the most importance (represented in Figure 1). The category "Elementary/Middle School," represents students' elementary and middle school experiences which helped them to decide they wanted to attend college. Within the category entitled "High School," mentioned the ways in which their high school classes, teachers, and guidance counselors either influenced their decision to attend college, or prepared them for their college coursework. Finally, students mentioned that parent expectations and guidance were particularly important. As represented in Figure 1, parents' expectations and guidance appear to be shaped largely by culture and family members' previous educational experiences, or a family's educational legacy.

Early Schooling (elementary/middle school)

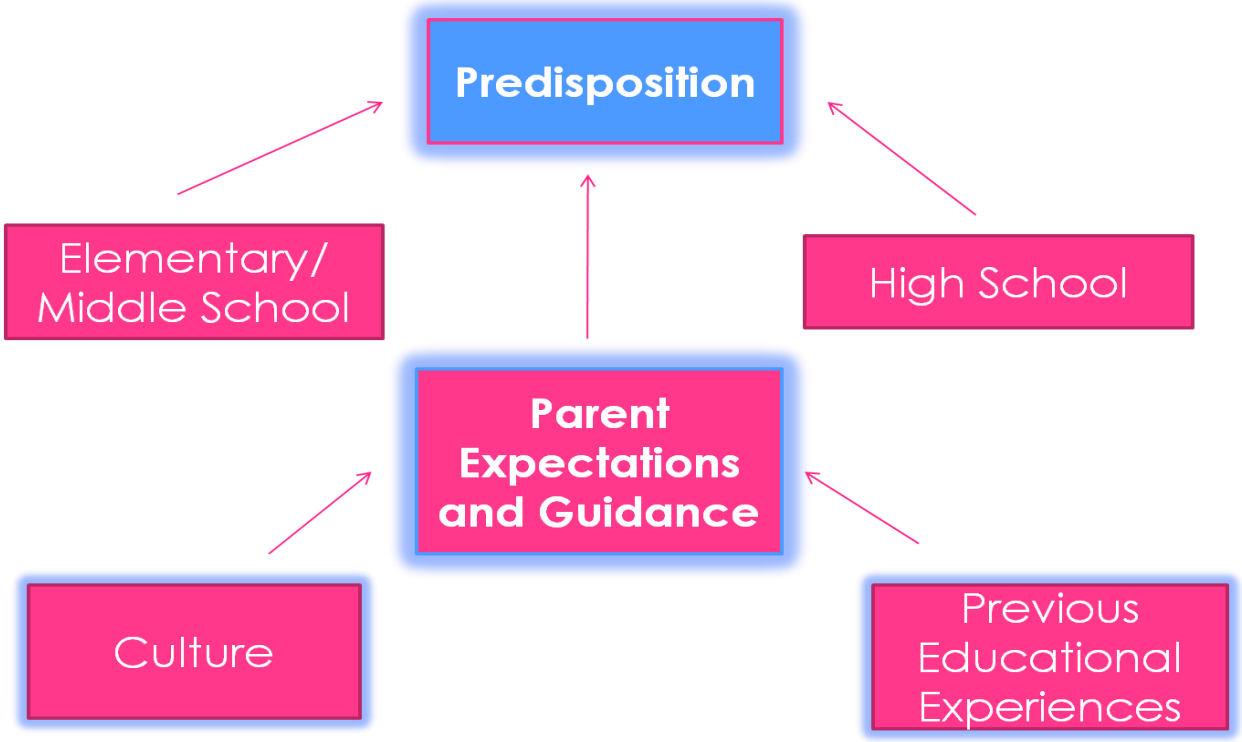
Early schooling played an important role in each participant's decision to attend college. Among the factors regarding early schooling that were influential in students decisions were personal academic ability, country in which early schooling experiences took place, and interactions with teachers.

Many of the students in the sample tended to do fairly well (A/B grades) in school. Often, they noted that schoolwork was "easy" for them or that it "came naturally." For instance, Umar recalled "the day before an exam, [spending] like three hours studying. And [coming] out and do either, you know, either a 'B' or an 'A'." Likewise, Christina recalls being "pretty much an above average student all through elementary school." Like Umar and Christina, many of the students in the sample admitted to not having to try particularly hard to succeed in school.

Students who spent their early years in Africa often described their academic transition to and educational experiences in the US as being relatively unchallenging. The ease with which students who attended school in Africa completed coursework once in elementary or middle school in the United States can perhaps be accredited to the rigorous schooling they received

abroad. Students who attended school abroad seemed to make good grades with much more ease than those who had only attended school in the US. Estelle indicated that, "It was very difficult…the level of education [in Cameroon] in middle school is like high school here [in the United States]." One student in particular said school in the US was "easier than what [she] was used to." Another student indicated that what she was learning as a small child in the US, she had "really learned in Africa…[and] was pretty much an above average student all through elementary school." These first generation students realized that coursework in their home country was more rigorous and when they came to the US, they appeared to be ahead of their classmates.

Figure 1: Framework Representing Factors Shaping African Immigrants' Predisposition to Attend College



Finally, many students had positive interactions with teachers in their early school experiences. Although not many looked to teachers as mentors, almost all of them can point to one particular teacher whose class they liked. A few students described a time when a teacher took a particular interest in them. For example, Nester mentioned having a few teachers who "looked out for [his] best interests." These teachers mentored him and helped him to develop life skills such as etiquette, thus preparing him for his future. In addition, Gayle noted that, "Teachers were really nice, when [she] was in elementary school…they helped you a lot. Whatever you needed…" By being willing to work with the students, the teachers were perhaps encouraging their desire to learn, which would someday influence their desire to attend college. Another student, Kayla, mentioned having a teacher who had the students conduct independent

studies, always reminding them that "that's how college would be." In this way, teachers had a positive impact on students desire to attend college.

High School Experiences

Another prevalent theme among students in the sample was the importance of high school experiences. Many students reported attending a private, magnet, or charter school. While often times this was the result of a parents' decision, some students decided to apply to these schools on their own accord. If students attended a private school because of a parent, it was often because a parent "wanted them to get a better education." These findings are similar to previous research (Lutz, 2009; Perna, 2006), which suggests that the type of high school a student attends plays an important role in a student's predisposition to attend college.

Some, although not all, students were part of some type of educational experience outside of high school that prepared them for college, encouraging them to start thinking about college at an early age. For instance, Christina was involved in a program during high school, where she was able to attend a conference in Washington, D.C., several workshops, and field trips. Students who participated in these types of programs became particularly interested in college. Kayla worked at a research laboratory at the University of Pennsylvania. She left school every day to go to the lab where she worked as a lab assistant. It was there that she discovered she "wanted to become an [Engineer]." Isabelle mentioned a mentor from her particular program who "[knew] what it means to be a Nigerian. She knows what it means to be a different race, a different ethnic background." Because Isabelle's mentor was from the same cultural background as her, her mentor was able to support her as she made her decision of whether or not to attend college. These narratives suggest that for this group of students, participating in some type of college-bound program encourages them to consider future goals including college, and engage in the predisposition phase.

There did not seem to be a relationship between high school teachers and students' predisposition to attend college. When speaking of teachers, a few students mentioned teachers who were "willing to spend that extra time with them," or were "particular about [them]," or took a particular interest in them. However, no one seemed to mention high school teachers that were particularly influential in their decision to attend college. In fact, more students noted negative relationships with high school teachers than they did in elementary school. Estelle stated, "I didn't like my teachers," and Gayle recalls that some of her teachers "really didn't care." Although not many students had positive relationships with high school teachers, this did not seem to affect their decision to attend college.

Likewise, counselors did not seem to have a major influence on a student's decision to attend college. In fact, many students, like Estelle and Gayle, admitted that their counselor "was not helpful at all." In fact, Estelle recalls having a new counselor every year:

> [I] had like a new one every year, I don't know, something always happened, and they had to leave, so I never…I mean they were really nice, but it wasn't like a close relationship and stuff.

The lack of support from both teachers and counselors suggests that these African students either received support elsewhere, or that they typically had made the decision to attend college before the time they reached high school.

In high school, many of the students in the sample were involved in rigorous academic programs. Most of them took advanced classes including Advanced Placement (AP), or college-credited classes. For instance, Stacy was in a program, "which was the advanced program for

smart students," at her school while Umar "took ten honors classes, and…took two AP classes at a college campus, during [his] senior year," and Kayla took AP classes because she was "always ahead of [her] class."

Parents and Family

One of the most central factors in a student's predisposition to attend college was the influence of parents and the expectations of family members. For most of the students in the sample, college was an expectation, not an option. Parents expressed the expectations they had of their students by asking "Which college do you want to go to?" or "What do you want to be?" rather than "Do you think you will you go to college?" Furthermore, almost all of the students mentioned parents as a major source of encouragement. Parents showed their encouragement to students by saying things like, "You want it? Go for it! All we can do is support you."

These expectations seemed to be shaped by two forces. The first, and perhaps most interesting force shaping parental expectations, was their connection to African culture. Second, whether or not the student's parents had attended college and the way in which parents guided students' decisions also played a role.

Among all of the ways in which parents and family played a role in a student's decision to attend college, culture was highly salient for African immigrants. Parents were often the transmitter of cultural values and beliefs. Often times students realized their culture played an important role in shaping their opinion of school and the importance of an education. Many students who speak of culture speak of parents being strict about academics, and therefore they had no choice but to do well in school. Christina recalled being punished after not doing her best in school. Her parents used punishment to remind her of her cultural values and that failure in school was not an option:

> After kind of playing the American role, you know me being born and raised here, it didn't go well, so they did pretty much revert to the traditional Nigerian enforcement. They were like, "You know what? We can't take this any more." So I definitely did go through a lot of physical punishment.

Still others responded by saying that failure in the African culture is not acceptable and therefore, they felt as though they must go to college. For example, Estelle stated,

> [W]here I come from, you like, like you have to be good in school, so it's always been like engraved in my brain that I had to do well in school, and I guess that's what's been my guiding force.

Like most of the students, because of her cultural background, failure was not an option. One particular participant mentioned that she wanted to go to college because she wanted to be able to help her family because as she said, that is what you do in the African culture – you help your family: "You represent your family in everything you do… Cause that's the way we're brought up in Africa." She wanted to be able to help her family because according to her, that is what you do in the African culture: you help your family. To her, that was the most important reason for attending college.

As the literature suggests, many immigrants come to the United States in search of educational opportunities for their children. This held true for almost all of the participants in the study. Many students explained that their parents came to the United States in order to receive a better education for them and their children. Patricia recalled her parents telling her "we're

Africans…we came here to make a living for you. So do well in school." Because her parents had traveled such a far distance, she was expected to do well in school. Another student recalls knowing she was going to college once she came to the US because she knew this was the reason her parents had immigrated:

> So my Dad, when my Mom won [the immigration lottery], they like debated over it, and you know, they said that it would be better for us to get an education in the US. So from then on I already knew I was going to go to college. I mean I knew that either way, but I don't know, it was.

Because these students realized this was the sole reason their parents came to the United States, they realized college is something they must do; it was not an option for them.

Others concluded that because an education was not as easily accessible in their home country, they valued the education they received in the US. Christina mentioned being appreciative of the education she received in the US "because all school, all education in Zambia and most of Africa, you have to pay for it. There's no free education." Like Christina, Estelle realized that school was not so easily accessible in her country of origin:

> So like when people have the opportunity to have an education in Nigeria or any other parts of any other country in Africa, it's a privilege. So therefore you really try to work hard, just not to attain the average, but to really go far and beyond.

As a result, she took her education in the United States very seriously and realized what an opportunity it would be to attend college.

The second force driving parental expectations were parents' educational backgrounds and experiences. Most of the parents of the students in the sample, particularly fathers, were educated, whether in their home country or in the US. As a result, college was always in the back of the students' minds. As Olive stated, "it's not as if I'm the first person…I guess cause my grandparents, my parents…" Like Olive, most of the students grew up knowing they would attend college because their parents had attended college. In addition, students whose parents had attended college realized that an education adds to capital or economic/social value. Christina, Estelle, Kayla, and several others indicated that their parents were wealthy in other countries and that their parents were educated. For example, Christina recalled that her dad was the CEO of Zambia State Insurance, and Kayla remembered that "before the war [her] Dad was the Army Cultural Minister in Liberia, so he was pretty wealthy."

Some parents were even obtaining or working towards advanced degrees during the students' childhood. Christina recalls that her "dad was in school all the time." She says he "got his masters around the time [her] sister was like almost three." As Christina grew up watching her father take classes, she was exposed to what it means to go to college in the US at a young age.

Although parent's educational attainment played an important role in students' decision to attend college, all parents encouraged students to go regardless of their own educational attainment level. For instance, even though Gayle's mother had not attended college, she still encouraged Gayle to go to school:

> And she was just like, you know, "I want you to go to a good school. I know you may have to pay back loans, but as long as you go to a good school, and you like it. Like you don't want to go somewhere that you don't like, and you're not going to get like the full experience."

Her mother realized the importance of a college education and how far it would take Gayle.

In addition to encouraging students to go, many parents expected their student to attend college: it was not an option. For many of the students in the sample, it was never a question of would they go to college, but where they would go, or what they wanted to be. Christina recalls that her family's high expectations led them to say things like, "'Oh, Christina, what college?' It was mostly they'd ask like, 'What college are you going to, or what do you want to be?'" and less of "are you going to go to college?" Like most of the students in the sample, the decision to attend college had already been made by Christina through the guidance and expectations of her parents.

Discussion

Although there has been research done on both the college-choice process (Stage, 1992; La Nasa, 2000; Hossler & Gallagher, 1987; Perna, 2006; Freeman, 2005; Perna, 2000; Hamrick & Stage, 1998) and the way in which native Blacks engage in it, the study of African immigrants and the way in which they engage in the college-choice process has been very limited. This study offers insight as to how African immigrants engage in the predisposition phase of the college-choice process. The findings of this study indicate that although early schooling and family had a major influence on this group of African immigrant students' decision to attend college, students had typically made up their minds to attend college by high school. Thus, rather than influencing these students decisions to attend college, high school prepared them academically for their future higher educational experiences.

Literature written about the college-choice framework developed by Hossler and Gallagher (1987) suggests that for most students, personal academic ability, parents, socioeconomic status (SES), peers, and school quality are the major factors that shape a student's desire to attend college, and for native Black students, academic ability, parents, socioeconomic status, and peers are the most important factors (Freeman, 2005; Hamrick & Stage, 1998; Hossler & Gallagher, 1987; La Nasa, 2000; Perna, 2000; Perna, 2006; Stage, 1992). Literature also suggests that most students begin the predisposition phase around the seventh or eighth grade (e.g. Freeman, 2005; La Nasa, 2000). For the African immigrant students in the study, however, early school experiences and parental influence appeared to play the most important roles and most students had begun to think about college as early as elementary school indicating that for African immigrants, the predisposition phase starts much earlier than what literature suggests for other students.

Future research should look more deeply into whether more students begin to consider college in elementary or middle school. That is, future research should make an effort to make a clear distinction between when students first start thinking about college and when they know for sure they want to go.

Early Schooling

The results of the study were consistent with Perna's (2006) review of literature, which suggested that as a student's personal academic ability increases, he or she is more likely to engage in the college-choice process earlier and also more likely to attend college. Most of the students in the sample reported that school came easily to them throughout their early schooling experiences, which increased the likelihood that they would attend college. This finding is consistent with earlier research done by Hossler and Stage (1992), which suggests that a

student's ability is positively correlated with his or her predisposition towards college enrollment.

All of the students who had been educated in another country indicated that school came easily to them. This may be a distinction in the role of early experiences with schooling between first and second generation students. Perhaps being educated in an African country where the coursework was more advanced and rigorous is part of the reason many of the students in the sample tended to be exceptional students. Students' rigorous coursework at an early age could possibly be one of the factors contributing to predisposition. Their ability to excel in school potentially gave them confidence to believe college was a possibility.

Most of the college choice/predisposition literature neglects student/teacher relationships during early schooling (elementary and middle school). However, the findings of this study suggest that for many students, teachers were supportive in encouraging students to attend college at an early age. Most of the students recalled having at least one teacher who nurtured their desire to learn. One particular student mentioned that because her teacher incorporated college-like activities into the classroom, she began thinking about college particularly early. Future research should perhaps look at the affects of classroom activities designed by teachers on African immigrant students' desires to attend college

High School

Although the quality of the school was mentioned as an important factor in a student's predisposition to attend college, most of the students in the sample had already decided to attend college by the time they reached high school. Some students had an interest in college before high school and chose the school that would best prepare them to succeed in college. Since this is the case, it may be that high school didn't influence predisposition directly, but that it had a positive influence in college preparation readiness.

Because most of the students attended magnet or blue ribbon high schools, they were more likely to participate in rigorous academic tracks. Like high school in general, academic rigor may not have affected predisposition, but it did prepare students for college and was a clear sign of predisposition towards college; these courses can be understood as a reflection of their desire to attend college/predisposition to attend college. Most of the students took AP or IB level classes or were involved in some type of magnet program. More so than giving the students the desire to go to college, academic rigor gave students the confidence they needed to believe they could attend and successfully complete college.

One thing the literature neglected to comment on was the educational experiences outside of the classroom. For African immigrants, programs such as these played an important role in their decision to attend college. Current literature suggests that the purpose of programs such as Upward Bound is to produce the skills and motivation necessary to for college success among young students (Gullat, Y., Jan, W., 2003). Future research should examine what aspects of these programs encourage students to engage in the college choice process and how these programs effect a student's predisposition towards college.

Parents and Family

Because there is a lack of literature addressing African immigrants and how they engage in the college-choice process, there has been little said about the way in which culture plays a role in their decision to attend college. Almost all of the students in the study, however, expressed that their parents acted as a conduit of culture. The parents of the participants reminded them often that because they were of African descent and not African American, they

must do well in school. These findings are consistent with those of Keller and Tillman (2008) which suggest that the expectations of immigrant parents raise children's expectations of college attendance. Because these student's parents had high expectations of them, the students in turn had high expectations and aspirations of their own.

Some students indicated that because college was not easily accessible in their home country, they appreciated the opportunity they had in the United States to receive an education, and therefore, felt obligated to do well in school and attend college. These findings were consistent with John Ogbu's theory of the voluntary minority (1995). Ogbu suggests that voluntary minorities are people who have immigrated to the US voluntarily because of the promises of upward mobility and the "American Dream," while involuntary minorities are people who were brought to the US against their will. He argues that voluntary minorities bring with them, among many things, their culture and cultural values. Because culture holds such a high value in Africa, according to Ogbu's theory, these students brought with them the value they placed on education in their home country.

The findings in the study were also consistent with literature that suggests students with college-educated parents are more likely to consider college (Freeman, 1999; Perna, 2000). Eleven of the thirteen students in the sample had at least one parent who had completed at least a bachelor's degree. Unlike many native Black students, the African immigrant students in the sample had parents who had attended college and therefore, according to the literature, were more likely to attend college themselves (Freeman, 1999; Perna, 2000). These same students also mentioned they always knew they would attend college. The findings of the study indicate that for African immigrants, parents' level of college attainment plays a major role, not only on whether or not a student decides to go to college, but also when the student makes this decision.

Implications

The findings of this study provide useful information to parents and administrators who seek to replicate the success of African immigrant students for future students, enabling them to encourage students to pursue a college education. In addition, it helps parents and administrators to understand an understudied population that is growing in the US. This study differs from other studies on college choice because it examines a particular group of people and how culture plays a role in the way decisions about college are made.

In order to ensure the continuation of future success for these students, educators should not only continue to observe the ways in which they engage in predisposition, but also develop and encourage students to participate in programs which will both encourage these students to think about college and prepare them for college. Because the findings implicate that these programs work for African immigrants, perhaps future research can interview students to find out, in more detail, what about these programs did students find particularly helpful.

To replicate the success of these students, teachers and administrators can and should collaborate with parents and explain to them the importance of their presence and active engagement in their children's education. The findings clearly indicate that among all things, parental expectations and guidance play the most important role in a student's predisposition towards college. Thus, if more parents are made aware of this, perhaps they will become more involved in encouraging their students to attend or prepare for college and/or will hold higher expectations for their students.

Conclusion

Because the presence of African immigrants is growing so rapidly in the United States and particularly on college campuses, it is important that research on this population continues to be conducted. If college-choice literature is to be considered thorough, it must include this population, which cannot be ignored. As years go on and the population of African immigrants continues to grow, chances are their presence on college campuses will continue to grow as well. Thus, we must realize that they are now and will continue to be a population that is worth mentioning when considering minorities and college choice.

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The Role of Peers and Friends on Mexican-Origin Female Adolescents' Psychological Adjustment

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Abstract

Despite the importance of peers and friends in adolescence, little work has been done that explores the contributions that peers and friends have in Latino adolescents' lives, specifically on their psychological adjustment. To fill in this gap, the current study examined the contribution that peer stressors had on Mexican-origin female adolescents' (n = 153) self-esteem and depressive symptomatology and explored the moderating role that the quality of the relationship with friends and best friends played in shaping this association. Results from hierarchical regressions indicated that more peer stress was significantly associated with lower levels of self-esteem and greater levels of depressive symptoms. Further, friendship support moderated the association between peer stressors and self-esteem such that this association was only significant among adolescents reporting low friendship support. Finally, contrary to expectations, relationship quality with best friend was neither a direct predictor of adjustment or moderated any associations. This study stresses the importance of supportive friendships in adolescent psychological adjustment against peer stressors.

Introduction

Latinos are the largest minority group in the United States (U.S. Census Bureau, 2000), with a large percentage of this population being children and youth (U.S. Census Bureau). Latino adolescents, along with other ethnic minority youth, report psychological adjustment issues such as depressed mood more so than White adolescents (Gore & Aseltine, 2003), and Latina adolescents show significantly higher levels of depression than their White, Black, and Asian counterparts (Siegel, Aneshensel, Taub, Cantwell, & Driscoll, 1998). As a result, understanding the psychological adjustment of Latino adolescent girls is extremely relevant considering the scarcity of knowledge and needs on this population.

Depressive symptoms and self-esteem are two important components of psychological adjustment (Feldman, Rubenstein, & Rubin, 1988; Turner, Finkelhor, & Ormrod, 2009) that appear to be affected by adolescents' stressful experiences with peers. For instance, adolescents

have been shown to exhibit more negative adjustment outcomes (i.e., depressive symptoms) when faced with hassles from peers such as victimization (Storch, Nock, Masia-Warner, & Barlas, 2003). Further, less acceptance by peers has been linked to lower feelings of self-worth in girls (Klima & Repetti, 2008). Peer stressors may affect female adolescents more so than males because they appear to be more affected by stress than males (Washburn-Ormachea, Hillman, & Sawilowsky, 2004). For instance, female adolescents who experienced stress in a peer context showed more negative emotional responses in the form of depression (Rudolph, 2002).

Relationships with friends, however, may serve a protective function from stress and adjustment problems (Parker & Asher, 1993). Specifically, having a close friendship in adolescence has been shown to contribute to adolescent psychological adjustment (Townsend, McCracken, Wilton, 1988). Laible et al. (2000) found that adolescents who reported better quality relationships with friends were least likely to report maladjusted symptoms (i.e., depression, aggression) compared to those who reported lower quality relationships. Further, the quality of a relationship with a best friend has been shown to reduce the effects of peer stressors (Bagwell, Newcomb & Bukowski, 1998). Bagwell et al. found that the negative effects of peer rejection were not significant when friendship status was included as a predictor. These findings point to the importance of friends during adolescence. Thus, given the little understanding we have on the role of friends and peers in Latino youth's adjustment (Bámaca-Colbert, Plunkett, & Espinosa-Hernández, in press), in this study, we wanted to explore the role that support from friends and relationship quality with a best friend had in shaping the link between peer stressors and depressive symptoms and self-esteem.

In summary, the purpose of this study was twofold: To examine the contribution that peer stressors may have on Mexican-origin females' self-esteem and depressive symptomatology and explore the moderating role that the quality of the relationship with friends and best friends may play in shaping this association.

Review of the Literature

Although parents continue to be an important influence during adolescence, the world of friends and peers (as a context for activity, socialization, and emotional experience) becomes increasingly more important (Larson & Asmussen, 1991; Laursen, 1996; Steinberg & Silverberg, 1986). Examining the role that peers and friends have in regards to Latina adolescents' adjustment is necessary because all too often the family is at the forefront of research focusing on this population. Further, having knowledge of the intimate relations among Latina adolescents and friends can be useful in gaining knowledge about the multiple interpersonal factors that can contribute to Latino youth development and adaptation.

Peer Stressors and Adjustment

Peer factors have been linked to positive and negative adolescent adjustment (Greenberg, Siegel, & Leitch, 1983). In fact, peers can be a source of stress. Although there are different types of stress, the most common type of stress is normative (Grant et al. 2003). Peer stressors can be described as normative stressors because they occur as a daily part of adolescent's lives. That is, adolescents who report peer stressors report their occurrence frequently as part of the school setting (Seals & Young, 2003).

Researchers have usually assessed peer stressors in the form of rejection and victimization that occur within a peer group (Parker & Asher, 1983). The effects of peer stress,

in the case of rejection and victimization, can have a severe influence on the psychological adjustment of adolescents. For instance, peer stressors in the form of rejection are associated with more depressed mood (Brendgen, Wanner, Morin, & Vitaro, 2005). Specifically, adolescents who report low acceptance (rejection) from peers are also found to have more symptoms that resemble depressive states than those who report being more accepted. Moreover, adolescents who encounter peer victimization (a very common form of peer stress) experience negative psychological adjustments such as anxiety/depression, aggression, and delinquency (Bailey, 2009). In this current study, we examined forms of victimization *and* rejection, such as being teased, rumors being spread, or fights being started with the adolescent. Therefore, we hypothesized that more peer stressors would predict more depressive symptoms in Mexican-origin adolescents.

In addition to depressive symptoms, we examined whether peer stressors would be associated with self-esteem as self-esteem is also an important indicator of psychological adjustment. Further, we focused on self-esteem because the literature surrounding Latina adolescent self-esteem lacks depth. Whereas the literature on peer stressors and depressive symptoms is extensive, the study of self-esteem as an outcome resulting from peer stress is scarce (e.g., Way & Robinson, 2003). When self-esteem is studied in relation to interpersonal factors, it is usually seen as an outcome in regards to parent-child relationships (Bohanek, Marin, & Fivush, 2008; Lindsey, Colwel, Frabutt, Chambers & MacKinnon-Lewis, 2008). But for the most part, self-esteem is studied as an antecedent (Orth, Robins & Roberts, 2003; Stanford, Chambers, Biesanz, & Chen, 2008) that is usually viewed as predicting factors such as depression, anxiety, and other negative adjustment outcomes. This may be due to the fact that self-esteem is believed to be a stable factor that remains so throughout adolescence and into young adulthood (Trzesniewski, Donnellan, Robins, 2003). In this study, we wanted to explore self-esteem as a dynamic construct, which is constantly evolving as a result of the situations an adolescent undergoes with peers. For instance, some researchers state examples in which adolescent self-esteem may be lowered by the presence of overall adolescent stressors (Youngs, Rathge, Mullis & Mullis, 1990).

Few researchers have studied stress from the peer context and its contribution to self-esteem (Callaghan & Joseph, 1995). Yet, when an adolescent is put under stress from the peer context, their self-esteem can decrease. Peer stress, therefore, can lead to lower self-worth during adulthood (Bagwell, Newcomb, & Bukowski, 1998). Therefore, we hypothesized that more peer stressors would be associated with lower levels of self-esteem in Mexican-origin female adolescents.

Although peer stressors can contribute negatively to adolescent adjustment, other types of peer interactions can protect against or foster psychological adjustment. For instance, adolescents who have supportive friendships or a positive relationship quality with a best friend may be more well adjusted and more able to cope with peer stressors than those adolescents who do not have supportive friendships or have poor relationship quality with a best friend.

Friendship Support and Adjustment

Friendships are important in all stages of life. But making friends becomes a critical part of navigating adolescence (Hartup, 1996). Friendships can be seen as a voluntary and reciprocal relationship between two individuals (George & Hartmann, 1996; Hartup, 1989). Further, friends "foster self-esteem and a sense of well-being…socialize one another… (Hartup & Stevens, 1997 p. 366). In sum, having friendships is seen as a normative, significant part of the

condition of being an adolescent (Hartup, 1996).

Most often, researchers examine the relationship between friended and friendless adolescents in regards to their psychological adjustment. Less is known about the link between the quality of the relationship with friends (e.g., support, intimacy) and adolescent psychological adjustment. Yet, some evidence exists that supportive friendships are important to one's overall psychological adjustment. For instance, support from friends (i.e., positive support) has been shown to help adolescents become more involved in the school setting (Berndt & Keefe, 1992). Further, whereas some work has only found limited support (i.e., approached significance) for the link between perceived support from friends and its association to depressive symptoms and self-esteem during adolescence (Way & Robinson, 2003); others have found that friendship support is linked to less depressive symptoms in both males and females (Hoffman, Ushpiz, & Levy-Shiff, 1988) and higher levels of self-esteem among females (Bukowski, Newcomb, & Hoza 1987; Walker & Greene, 1986). The aforementioned study also found that friendship support (vs. peer support) was a better indicator of overall self-worth (Bukowski, Newcomb, Hoza). We therefore hypothesized that greater friendship support would be associated with higher self-esteem in Mexican-origin female adolescents. Furthermore, because support from close friends has been shown to serve as a buffer against peer stressors (i.e., victimization) on depressive symptoms, loneliness, self-esteem, and externalizing behaviors (Prinstein, Boergers, & Vernberg, 2001), we also hypothesized that reporting more supportive friendships would be associated with lower levels of depressive symptoms in Mexican-origin youth.

Relationship Quality with Best Friend and Adjustment

Not only is support from friends necessary for overall well being, but the quality of the relationship can also prove to be of vital importance (Sullivan, 1953). Few researchers have explored relationship quality with friends and its contribution to adolescent outcomes (e.g., Bukowski and Hoza, 1989). Waldrip, Malcolm, and Jensen-Campbell (2008) found that friendship quality was associated with less internalizing problems (e.g., anxiety/depression, withdrawn/depression) such that greater relationship quality predicted better adjustment. In fact, when adolescents had fewer friends; their levels of internalization of symptoms did not increase because the friendships they had were perceived as high quality.

An important aspect of friendships is intimacy (Sullivan, 1953). Intimacy can be described as "emotional closeness" (Camarena, Sarigiani, & Petersen, 1990 p. 20). High quality friendships tend to be more intimate than low quality friendships. Friendships among best friends are more likely to be intimate than other friendships. That is, best friends serve adolescents in more intimate way than their peers can (Sullivan, 1953). These dyadic relationships serve to help the adolescent define him or herself in a more personal, concrete way (Sullivan).

Best friend relationship quality can impact feelings of self-esteem. In a high quality relationship, an adolescent should expect a positive and reciprocated approach to any issues that she may bring to a friend. That is, having a high relationship quality with a best friend would serve to strengthen the adolescent's self-worth (Sullivan, 1953). Most of the research exploring associations between friendship factors and adjustment has focused on the existence or absence of friends (Boulton, Trueman, Chau, Whitehand, & Amatya, 1999; Parker & Asher 1993). These studies suggest that friends are important as long as they are present. That is, friendless adolescents are thought to exhibit worse outcomes than adolescents with friends.

Moreover, the quality of the relationship with one or two best/good friends has been found to be a better predictor of loneliness and depression than popularity among peers (Nangle

et. al., 2003). Sterling (2004) examined several aspects of friendship quality and their association to adolescent adjustment outcomes (i.e., self-worth and depression) and results suggested that facets of friendship quality (i.e., trust/loyalty, caring/validation, closeness) were associated with depression, anxiety, and self-worth. Quality of the relationship with friends, therefore, may be a better predictor of psychological adjustment than overall friendship support. Therefore, we hypothesized that better relationship quality with a best friend would be associated with higher self-esteem and lower depressive symptoms among Mexican-origin adolescents.

Friendship Support and Relationship Quality with Best Friend as Moderators between Peer Stressors and Adjustment

In the aforementioned discussion, peers were described as contributing negatively to the adjustment of adolescents via peer stressors. But the positive aspect of friendships could serve as a protective role. That is, adolescents may be better able to cope with peer stressors with the benefit of supportive friends and intimate relationships with best friends. Having a friend in adolescence may inform the adolescent that he or she is valued by another individual, which may decrease the impact that hassles experienced from the peer group may have on the adolescent. Although not much is known about the protective role that peer support and relationship quality may have, previous work has found that the presence of one reciprocated friendship predicts less internalization and externalization of behaviors in adolescents who are victimized (Pellegrini, Bartini, & Brooks, 1999), suggesting that friendships can buffer the negative impact that stressors such as victimization can have on adolescent adjustment. Therefore, we predicted that friendship support and intimacy with a best friend would serve a protective function against peer stressors. Specifically, we hypothesized that the association between peer stressors and adjustment (i.e., self-esteem and depressive symptoms) would be weaker for female adolescents reporting high levels of friendship support and best friend relationship quality and stronger for adolescents reporting lower levels of friendship support and best friend relationship quality.

In summary, we examined the following hypotheses in this study:

- More peer stressors would be associated with higher levels of depressive symptoms and lower self-esteem.
- More friendship support would be associated with higher levels of depressive symptoms and higher levels of self-esteem.
- Better relationship quality with best friend would be associated with lower levels of depressive symptoms and higher levels of self-esteem.
- More friendship support would serve as a protective factor between the association of peer stressors and depressive symptoms such that the association between peer stressors and depressive symptoms would be weaker for adolescents reporting more friendship support.
- More friendship support would serve as a protective factor between the association of peer stressors and self-esteem such that the association between peer stressors and self-esteem would be weaker for adolescents reporting more friendship support.
- Better relationship quality with best friend would serve as a protective factor between the association of peer stressors and depressive symptoms such that the association between peer stressors and depressive symptoms would be weaker for adolescents reporting better friendship quality.
- Better relationship quality with best friend would serve as a protective factor between the association of peer stressors and self-esteem such that the association between peer

stressors and self-esteem would be weaker for adolescents reporting better friendship quality.

Methods

Participants

Participants (n = 153) were female adolescents of Mexican origin, who completed a self-administered survey at home. We drew data from a longitudinal study that originated in an area of the United States with a large Latino population (44%; United States Census Bureau, 2000). Variables of interest were only available at Wave 2. Participant ages ranged from 14 to 19 (M = 16.3; SD = 1.57) years of age. Almost ninety percent of the girls were enrolled in high school or college at Wave 2. Seventy percent of the adolescents in this study were born in the United States and almost as many (69.3%) reported their SES (socioeconomic status) as middle class.

Measures

Depressive symptoms. We used the *Center for Epidemiological Studies Depression Scale* (CES-D; Radloff, 1977) to measure the prevalence of depressive symptoms in the past week. The CES-D was developed for use in the general population (Golding & Aneshensel, 1989) and has shown excellent reliability (α = .93) among Mexican-origin adolescents (Robert & Chen, 1995). Adolescents responded to 20 items rated on a Likert scale with points ranging from 0-3 (0 = *less than 1 day*, 1 = *1-2 days*, 2 = *3-4 days*, and 3 = *5-7 days*), with higher numbers signifying greater depressive symptoms. With the current sample, this measure obtained an excellent reliability value of .90.

Self-esteem. Self-esteem was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1979). This 10-item scale included global self-esteem items such as "I feel I do not have much to be proud of" and "I take a positive attitude toward myself". Participants responded on a Likert scale ranging from 1-4, with endpoints of 1 = *Strongly Disagree* and 4 = *Strongly Agree*. Negative items were reverse scored so that the lower total score meant lower self-esteem. Studies have shown satisfactory reliability scores with Latino adolescents (Armenta & Hunt, 2009; Schwartz, Samboagna, & Jarvis, 2007.) With the current sample, this measure obtained a good reliability value of .87.

Peer stressors. We measured peer stress (in the past three months) with an 8-item subscale of the Multicultural Events Scale for Adolescents (MESA; Roosa, Den, Ryu, Burrell, Tein, Jones, Lopez, & Crowder, 2005). This subscale was developed specifically to measure experiences that are relevant to urban and culturally diverse adolescent samples. This measure assesses negative peer hassles and has shown adequate reliability (alpha of .73) in previous studies (Samaniego & Gonzales 1999). Peer stress statements included items such as "Other teens said mean or bad things to you" and "Other teens wanted to fight with you or tried to fight with you." Items were answered with "*yes*" or "*no*" to indicate whether adolescents had experienced the event in the past three months. A sum was calculated to obtain a total peer stress score ranging from 0 = *no stressors* to 8 = *8 stressors*.

Friendship support. We measured friendship support (FS) using an adapted (9-item) version of the *Inventory of Parent and Peer Attachment* (Armsden & Greenberg, 1987). The original measure assesses support from peers, but in the current study we asked adolescents to report on support from friends with statements such as "I tell my friends about my problems and worries" and "My friends help me understand myself better". Scores were calculated on a 4-

point Likert scale with endpoints (1 = *almost never or never true* to 4 = *almost always or always true).* With the current sample, this measure obtained an excellent reliability value of .93.

Relationship quality with best friend. We assessed relationship quality with female best (RQBF) friends with an 8-item intimacy subscale taken from the Social Relations Questionnaire (Blyth, Foster-Clark, 1987). Statements tapped into adolescents' perceived emotional closeness with their female best friend with items such as "How much does your best friend understand what you are really like" and "How much does your best friend accept you no matter what you do?"). Adolescents responded to items on a 5-point Likert scale ranging from (1 = *not at all* through 5 = *very much*.) In multiple studies (Crockett, Losoff, & Petersen, 1985; Field & Lang, 1995; Petersen, Sarigiani, & Kennedy, 1991; Rice & Mulkeen, 1995), the measure has been reliable in assessing intimacy with family and friends. With the current sample, this measure obtained an adequate reliability value of .73.

Results

Plan of Analysis

We performed hierarchical linear regressions to test all hypotheses. We controlled for age because we wanted to test if different ages of adolescents were significant across the regressions. Age was not significant in any of the regressions. We centered all peer stressors and friendship support and relationship quality with best friend around their means. We computed interaction terms as the product of the centered peer stressors variable and centered friendship support and relationship quality of best friend variables to test moderation models (Baron & Kenny, 1986).

We performed one regression for each of the psychological adjustment variables (i.e., depressive symptoms and self-esteem) and each of the two moderating friendship variables (i.e., friendship support and relationship quality with best friend). That is, we performed 4 regressions. Depressive symptoms and self-esteem was always the outcome. In all regressions, we entered age as a control in Step 1. We entered the peer stressors variable in Step 2. Then, we entered either the friendship support or relationship quality with best friend variable in Step 3. Finally, we entered the two-way interaction between the peer stressors variable and friendship support and between peer stressors and relationship quality with best friend variable in Step 4. We describe the results separately Independent and moderating variables.

Associations Between Peer Stressors and Depressive Symptoms and Self-Esteem

We predicted that peer stressors would be associated with depressive symptoms. Step 2 of the regression models tested these associations. Step 2 accounted for 10% and 11% of the variance in both regressions with depressive symptoms as an outcome (see Table 1). The main effect of peer stressors was significant in these regressions. That is, female adolescents who reported more peer stressors were more likely to report more depressive symptoms than those adolescents who reported less peer stressors.

We also predicted that peer stressors would be associated with self-esteem. Step 2 in the regression models also tested this association. Step 2 accounted for 11% and 12% of the variance in both regressions with self-esteem as an outcome (see Table 1). The main effect of peer stressors was significant in these regressions. Specifically, Mexican-origin female adolescents who reported more peer stressors reported lower levels of self-esteem than those adolescents who reported lower peer stressors.

Associations Between Friendship Support and Depressive Symptoms and Self-esteem

We predicted that friendship support would be associated with depressive symptoms. We focus on Step 3 of the regression model, which tested this association. Step 3 accounted for 3% of the variance in the regression with depression as an outcome and friendship support as moderator (see Table 1). The main effect of friendship support was significant in this regression. Female adolescents who reported more friendship support were more likely to report lower depressive symptoms than adolescents who reported less friendship support.

In addition, we predicted that friendship support would be associated with self-esteem. We, therefore, focus our attention to Step 3 of the regression models, which tested this association. Step 3 accounted for 3% of the variance in the regression with self-esteem as an outcome and friendship support as moderator (see Table 1). The main effect of friendship support was significant in this regression. Adolescents who reported more friendship support were more likely to report higher self-esteem than adolescents who reported less friendship support, supporting our hypothesis.

Associations Between Relationship Quality with Best Friend and Depressive symptoms and Self-esteem

We predicted that relationship quality with a best friend would be associated with depressive symptoms. Step 3 in the regression model tested this association in the regression with depressive symptoms as an outcome and relationship quality with a best friend as the moderator (see Table 1). The main effect of relationship quality with a best friend was not significant, providing no support for this hypothesis.

We also predicted an association would exist between relationship quality with a best friend and self-esteem. Step 3 in the model tested this association in the regression with self-esteem as an outcome and relationship quality with a best friend as the moderator (see Table 1). The main effect of relationship quality with a best friend was not significant.

Friendship Support as a Moderator

We predicted that friendship support would moderate the association between peer stressors and depressive symptoms. Step 4 tested the interactions between peer stressors and friendship support. In the regression model with depressive symptoms as an outcome and friendship support as moderator (see Table 1), the interaction between peer stressors and friendship support was not significant.

We also predicted that friendship support would moderate the association between peer stressors and self-esteem. Step 4 tested the interactions between peers stressors and self-esteem. In the regression models the change in R^2 from step 3 to step 4 was significant (see Table 1), suggesting a significant moderating effect. The final model with self-esteem as a predictor and friendship support as a moderator explained 21% of the variance. Step 4 accounted for 6% of the variance. The interaction between peer stressors and self-esteem was significant. To interpret the interaction, we created two groups of low and high friendship support, by identifying the friendship support variable mean and splitting the sample into two groups: low support (scores below the mean) and high support (scores above the mean). We conducted follow up analyses (Aiken & West 1991) that revealed that the association between peer stressors and self-esteem was significant for the group who reported low friendship support (β = -.54; $p < .001$), but not for the group reporting high friendship support (β = -.19; $p > .05$). That is, for the low friendship support group, girls who reported more peer stressors reported lower self-esteem

Relationship Quality With Best Friend as a Moderator

We predicted that relationship quality with a best friend would moderate the association between peer stressors and depressive symptoms. Step 4 tested the interactions between peer stressors and depressive symptoms. In the regression models Step 4 was not significant (see Table 1). Finally, we predicted that relationship quality with a best friend would moderate the association between peer stressors and self-esteem. Step 4 tested the interaction between peer stressors and self-esteem. In the regression model Step 4 was not significant (see Table 1).

Discussion

We examined peer stressors, friendship support, and relationship quality with best friend as predictors of psychological adjustment in Mexican-origin adolescents. Further, we examined the possible protective role of friendship support and relationship quality with a best friend. We specifically looked at depressive symptoms and self-esteem as adjustment outcomes. Results from this study provided some evidence for the importance of peers and friends in predicting the psychological adjustment of Mexican-origin female adolescents.

As predicted, we found that peer stressors were associated with both depressive symptoms and self-esteem. Specifically, adolescents who reported more stressors were also more likely to report lower self-esteem and higher levels of depressive symptoms. These findings show the negative effects that peer stressors can have on Mexican-origin female adolescents and contribute to previous work that has found that peer stressors adolescents experience are linked as self-esteem and depression (Brendgen, Wanner, Morin, & Vitaro, 2005; Youngs, Rathge, Mullis & Mullis, 1990). Further, these findings add to our knowledge regarding the type of stressors that are associated with adjustment among Latina youth.

We also found that friendship support was a key indicator of adjustment in our study. Specifically, adolescents who reported higher levels of friendship support were also more likely to report higher levels of self-esteem and lower levels of depressive symptoms. Thus, whereas peer stressors predicted less positive outcomes, supportive friendships appeared to play a positive role in reducing negative psychological adjustment outcomes in our sample. These findings provide evidence that, in addition to parents, support from friends is also important to incorporate in models examining the role that interpersonal relationships may have on Latino adolescents' psychological adjustment.

Surprisingly, and contrary to the findings on friendship support, relationship quality with a best friend in terms of intimacy was not a significant predictor of adjustment in all regressions. It is possible that Latino adolescents may be more inclined to need collective support (which our measure of friendship support addressed) instead of intimate interactions with one person (which is what relationship quality measured). This potential explanation is based on literature that posits that central to Latinos is the value of collectivity and familism (Smokowski, Rose, & Bacallao, 2010). That is, the importance of a group dynamic is central to Latino culture; thus, support from just one individual (e.g., best friend) may not be as salient as feeling supported by many. So having friends that are supportive appears to be more significant to these Mexican-origin female adolescents than having a close intimate relationship with a best friend.

This is not to say that relationship quality with a best friend is disregarded, however. It may just not be considered as vital to feelings of self-worth or depression or buffer against the negativity peers can bring in the form of stressors, as support from friends appeared to be. In fact, friendship support not only predicted self-esteem and depressive symptoms directly, but

also interacted with peer stressors to predict adjustment. Specifically, friendship support served a protective function for girls who reported high levels of support from friends. That is, the association between peer stressors and self-esteem was only significant for female adolescents who reported low levels of friendship support, not for those who reported high levels of friendship support, meaning that only those who reported low levels of friendship support appeared to be affected when experiencing more peer stressors. This is an important finding as it points to the protective nature of friendships when adolescents experience stress. Future studies should examine whether friendship support buffers against stressors other than that from peers.

Limitations and Future Directions

The interpretation of results would not be complete without taking into consideration limitations of the study. First, findings from this study may be relevant only to Mexican-origin females. It is possible that different results would emerge if the sample were from other Latino-origin countries or from other ethnic groups. For instance, if we had studied adolescents from Argentina we may have found the sample to be more influenced by the relationships they have with a best friend, since people from Argentina appear to be more individualistic (based on their Hofstede scores) when compared to other Latinos, specifically people from Mexico, which is where our study sample originates (Clearly Cultural, 2009).

Another limitation may be that friendship support and intimacy items addressed two different ideas. Therefore, although quality of the relationship with best friend in terms of intimacy was not significant, assessing other aspects of relationship quality with a best friend such as support from best friend might have resulted in different findings.

A third limitation of this study is its sole focus on females, not males. Although stressors seem to affect females more (Washburn-Ormachea, Hillman, & Sawilowsky, 2004), that is not to say they do not affect males. Thus, it is important to include males in other studies, especially because males appear to be affected by other stressors such as discrimination more so than females (Alfaro, Umaña-Taylor, Gonzales-Backen, Bámaca, & Zeiders, 2009.

Conclusion

The findings from this study are a step toward the goal of having a better understanding of the factors associated with Latino youth development and adjustment, as it provides evidence that relationship aspects with peers and friends are linked to adjustment outcomes and serve a protective function against stressors faced by Latino youth. Although friendships are important and usually associated with positive benefits for adolescents, not much is known about their role among Latino youth. For the most part our knowledge on peers comes from the academic literature that has found peers can have an influence, either positive or negative on academic outcomes in adolescence (Bouchey, 2001), but less is known about their role in contributing to the psychological well-being of Latino youth. Further, peers and friends need to be assessed as two separate entities; they may exist in the same contexts (e.g., schools), but they clearly do not garner the same roles to the adolescent. More work is needed to better understand whether friends and peers serve the same roles for Latino adolescents as they do for other youth. Further, future studies should focus on the differences that may exist among Latino adolescents and the role of peers and friends in their lives.

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Table 1.
Standardized betas for regressions predicting depression and self-esteem with peer stressors as a predictor and friendship support (FS) and relationship quality of best friend (RQBF) as moderators

Outcome	Depressive symptoms		Self-esteem	
Peer moderator variables	*FS* (R^2 =.15***) *n* = 151	*RQBF* (R^2 = .13***) *n* = 148	*FS* (R^2 = .21***) *n* = 151	*RQBF* (R^2 = .14***) *n* = 148
Step 1				
Age	.08	.06	.05	.05
ΔR^2	.01	.00	.00	.00
Step 2				
Age	.09	.07	.03	.04
Peer stressors	.32***	.33***	-.35***	-.34***
ΔR^2 (1 – 2)	.10***	.11***	.12***	.11***
Step 3				
Age	.09	.08	.04	.05
Peer stressors	.32***	.32***	-.34***	-.34***
Peer moderator	-.18**	.12	.16*	.09
ΔR^2 (2– 3)	.03**	.01	.03*	.01
Step 4				
Age	.08	.08	.04	.05
Peer stressors	.32***	.33***	-.36***	-.36***
Peer moderator	-.18**	.12	.17*	.08
Outcome X peer moderator	-.08	-.03	.25***	.13
ΔR^2 (3– 4)	.01	.00	.06***	.02

†$p < .06$, *$p < .05$, **$p < .01$, ***$p < .001$.

Racial and Ethnic Disparities in Judicial Sentencing: The Case of Pennsylvania

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Abstract

Numerous studies examining racial and ethnic disparities and/or discrimination in judicial sentencing have been done with inconsistent results. The current study further investigates discrimination in the application of sentencing including the death penalty in criminal cases in Pennsylvania. Using data supplied by the Pennsylvania Commission on Sentencing, I examine the length of the incarceration that offenders receive, controlling for a number of extralegal variables including race, age, sex, prior record score, and disposition to determine whether or not disparities exist in the length of sentence. Findings show that race does has an effect on sentence length and the death penalty decision but the effect goes away when offense gravity score, prior offenses and use of weapons are added to the model. Implications are discussed.

Keywords: race, sentencing disparities, death penalty

Introduction

Lynching, the firing squad, lethal injection, and the electric chair are all forms of capital punishment that have either been legal or are still legal in the United States. In Stephen Bright's 1995 article entitled *Discrimination, Death and Denial: The Tolerance of Racial Discrimination in Infliction of the Death Penalty*, he explains that the death penalty is "a direct descendant of lynching and other forms of racial violence and racial oppression in America." (p. 439). More than two-thirds of those individuals who were lynched in America in 1930 were black. Since 1976, approximately thirty-four percent of the individuals who have been legally executed in the United States have been black, fifty-seven percent have been white and while seven percent have been Hispanic (the remaining two percent were classified as other) (deathpenaltyinfo.org).

Currently in the United States there are thirty-eight jurisdictions in which capital punishment is legal including the Federal Government, the U.S. Military and the state of Pennsylvania. From 1977 to 2008, there have been one thousand one hundred and thirty six (1,136) executions in the United States. In Pennsylvania, there have only been three executions

in that time period. It is however the fourth largest jurisdiction with the largest death row population, with two hundred and twenty-five inmates on death row. It follows California (690), Florida (403), and Texas (336) (deathpenaltyinfo.org; U.S. Census Bureau).

While minorities' only constitute a small portion of the general population, they constitute a large portion of the prison population. According to the Death Penalty Information Center there are three thousand two hundred and seventy-nine (3,279) inmates on death row in the United States today. While the U.S. general population is only approximately thirteen percent (13%) Black and fifteen percent (15%) Hispanic; approximately forty one percent (41%) of those individuals on death row are black and approximately twelve percent (12%) are Hispanic. Of those inmates on death row, three thousand two hundred and two (3,202) of them are men. Pennsylvania is the fourth largest jurisdictions with the highest percentage of minorities on Death Row (examining jurisdictions with death row populations > 10) with 69% of the inmates on death row being minorities (deathpenaltyinfo.org; Death Row USA, 2009).

Research has shown that the majority of inmates on death row are minorities and the majority of inmates were sentenced to death for crimes against white victims (Bright, 1994). Research has also found that race has an effect on the length of sentence that offender receives and that young black males are more likely to receive harsher sentences than any other group (Steffensmeier, Ulmer & Kramer; 1998). However, there have been other studies that have shown that race is not a determining factor in the length of sentence that an offender receives nor does it have an effect on the severity of their sentence (Spohn, Gruhl & Welch; 1981)

These contradictory findings and inconsistencies emphasize the importance of determining whether or not there is a disparity that exists within judicial sentencing based on an offender's race, ethnicity and/or gender. This in turn is the purpose of my study. The focus of this study is on the Pennsylvania since is amongst the top jurisdictions with the highest percentage of minorities on death row. It is important to reassess judicial proceedings as well as sentencing guidelines. Racial and ethnic disparities in judicial sentencing are both unwarranted factors that are inconsistent with the functions of the judicial system in America.

Capital Punishment in the United States

In 1972, the United States Supreme Court essentially declared the death penalty unconstitutional on the basis of "discrimination and arbitrariness" and exclaimed that it constituted "cruel and unusual punishment" in the case of Furman vs. Georgia (408 U.S. 238, 1972). However, it was reinstated in 1976 when, in Gregg v. Georgia (428 U.S. 153, 1976), the Court overruled the Furman decision and executions once again became legal. The question still remains, however, as to whether or not the death penalty is administered in a fair and reasonable manner so that individuals who commit the same crimes receive the same criminal sentences.

Discrimination by Race

Many researchers have reported that minorities, African Americans in particular, make up the majority of individuals incarcerated and on death row because they commit more serious crimes and are therefore more likely to have prior records (Kleck, 1981). Kleck, in his 1981 study, classified this as a form of institutional racism and explained that institutional racism is one of five different practices that could lead to racial differentials in criminal sentences. He also included overt racial discrimination against minority defendants, disregard for minority

crime victims, class discrimination and economic discrimination. He examines execution rates for both blacks and whites over an approximate 40 year time period for the entire United States and the South, and death sentences over an approximate 11 year time period.

Kleck (1981) found that black offenders are generally not discriminated against in states other than those in the South with respect to the death penalty and instead they were sometimes treated more leniently. He did, however, find a pattern when it came to the sentencing based on the race of the victim. Offenders killing black victims were less likely to receive the death penalty than offenders with white victims. When assessing cases where the death penalty was issued for rape, Kleck (1981) found overt discrimination existed against black defendants as there was substantial evidence showing that black defendants who raped white victims received harsher sentences. These findings were consistent with previous research that assessed criminal cases where rape was considered an offense punishable by death.

In perhaps one of the earliest studies examining racial disparities in sentencing, Wolfgang and Riedel (1973) found in their twenty year study that blacks were sentenced to the death penalty more often than whites. After examining the 1,265 cases that had both the race of the victim and the race of the offender, they found that blacks were sentenced to death almost seven times more than whites. Black defendants whose victims were white (N=317) were significantly more likely to be sentenced to the death penalty than all of victim-offender racial/ethnic combinations (N=921) (white/white, black/black, etc). Of the black defendants whose victims were white, approximately 36 percent were sentenced to the death penalty. Of the other victim-offender race combinations two percent were sentenced to the death penalty. These racial differences remained even after they controlled for other factors that did not relate to the offender's race. This shows that blacks with white victims were approximately eighteen times more likely to be sentenced to the death penalty than any other racial combination (Wolfgang and Riedel, 1973). Overall, the findings showed that racial discrimination with respect to the death penalty has existed and still exists within judicial proceedings.

Radelet (1981) examined criminal indictments after Furman v Georgia (1972) focusing on homicides in twenty Florida counties in 1976 and 1977. Assessing the race of victim, the race of defendant, and combinations of both, he hypothesized that the race of the defendant would be a determining factor in whether or not the defendant would receive a first degree murder indictment and a higher charge of the death penalty. However, contrary to his hypothesis and what earlier researchers found, there was no difference in a black defendant's indictment for first degree murder compared to a white defendant's.

The majority of research that was conducted in earlier years appeared to be consistent with one another in finding black offenders were more likely to be sentenced to the death penalty than whites and receive harsher sentences. Spohn, Gruhl and Welch's 1981 study of the relationship between race and sentencing in the "Metro City" area had findings that were not consistent with the previous literature. Their study was a replication of research conducted by Uhlman (1977) on the "Metro City" area as he concluded that racial discrimination existed. They examined the same sentences imposed on 2,366 black and white defendants in Metro City, hypothesizing that they would not find a direct relationship between race and sentencing controlling for seriousness of offense and prior record score, (Sophn, et al. 1981) Their findings showed blacks did receive harsher sentences than whites as blacks because blacks were more likely to have criminal records and were being charged with more serious offense., However, they found that race does not have a direct effect on the severity of the offender's sentence once they controlled for extralegal variables. They concluded that some judges in the Metro City area

were likely to discriminate against black males when establishing their sentencing and/or probation outcome. Black males were more likely to receive a short prison term than white males who were more likely to receive probation. They argue that even though this finding supported previous works that concluded racial discrimination, it does not establish racial discrimination in the court system (Spohn et al., 1981, p. 84 – 86).

Disparities in the Imposition of the Death Penalty

Williams and Holcomb (2001) studied the imposition of the death penalty in Ohio and whether or not any racial disparities exist. They focused on the number of death sentences imposed and the number of individuals who received a death sentence. Williams and Holcomb (2001) found that extralegal variables were significant factors in determining whether or not an offender received a death sentence The victim's race had more of an effect of influence than the defendant's race on whether or not the defendant received a death sentence. These findings were consistent with previous studies that concluded that extralegal variables such as race of victim and race of offender play a role in the imposition of a death sentence.

In 1984, Gross and Mauro studied all homicides (N=379) in eight states that had death penalty statues written after the Furman case. They were particularly interested in whether or not racial discrimination occurred during the imposition of the death penalty. Gross and Mauro (1984) explained the concept of "arbitrariness" which they defined as

> "arbitrariness is the major target of the equal protection clause of the fourteenth amendment and involves (1) the random or 'capricious' use of the death penalty, or (2) the imposition of the death penalty because of the presence or absence of a legally irrelevant factor, such as race." (Gross and Mauro, 1984, pg 35; Gregg v Furman, 1976)

Gross and Mauro (1984) found that offenders who killed whites were more likely to be sentenced to the death penalty than those who killed blacks. This finding is consistent with Kleck's (1981) earlier study. Gross and Mauro (1984) also found that among those offenders who killed whites, blacks offenders were more likely than white offenders to be sentenced to death.

Gender Disparities in Offender Sentencing

In the 1985 study conducted by Sophn, Welch and Gruhl they examined sentencing outcomes for men and women defendants in the "Metro City" area, to determine whether or not women defendants are subject to paternalistic treatment. They also wanted to determine if there was any difference in the sentences imposed upon male and female defendants. They did this by examining the seriousness of the offense and found that black female defendants are often the only groups that are treated paternalistically in court. However, there were only a small number of white female defendants. They also found a significant interaction between race and sex.

A 1998 study conducted by Steffensmeier, Ulmer and Kramer in which they studied sentencing outcomes in Pennsylvania from 1989-1992, found that the subgroup of young black males received the harshest sentences. These effects were significant for cases in which sentences departed from guidelines as well as cases in which the sentencing guidelines were being followed. While race, gender and age were all found to have an effect on the offender's

sentence, they concluded that gender had the largest effect, followed by age and then race (Steffensmeier et. al., 1998).

Sentencing Guidelines and Racial Disparities

Researchers have also focused on sentencing guidelines, policies, and sentencing as well as racial disparities. A 1993 study focused on racial differences in sentencing and judicial proceedings with data from the Pennsylvania Crime Commission. Kramer and Steffensmeier (1993) found that race as well as other extralegal variables were minimal factors in an offender's judicial proceeding. They also found that the possibility of incarceration for an offender had an even smaller effect on the offender's length of incarceration. While they did not find that race had a direct effect on the length of sentence, they did find that blacks were more likely to be incarcerated than whites. They concluded that the establishment of sentencing guidelines removed the racial bias that had presented itself previously. This finding seems to be the same in many other jurisdictions even when controlling for a variety of other extralegal variables and in turn raises a very important question about the status of sentencing guidelines within the American criminal justice system. These guidelines were established to get rid of unwarranted disparities did reduce the differences in length of sentence; however, these disparities in the percentage of blacks sent to prison still exist.

In 2003, Johnson took a different approach and examined the role that departures from sentencing guidelines play in contributing to racial/ethnic disparities. Using the data from the Pennsylvania Commission on Sentencing, he focused on the ways in which these disparities are contextualized by different courtroom processes focusing on extralegal factors such as race and ethnicity. He examined these relationships on the basis of four modes of conviction (non-negotiated pleas, negotiated pleas, bench trials, and jury trials). Findings indicated that there were important differences in the effects of both legal and extralegal variables across modes of conviction and that these different factors may contribute to sentencing disparities that exist. This finding is consistent with previous research which found that departures from sentencing contribute to disparities.

Mustard (2001) examined racial, ethnic, and gender disparities at the federal level. He examined disparities in sentencing under the Sentencing Reform Act of 1984 for all offenders sentenced under the Act. The Sentencing Reform Act of 1984 is similar to the sentencing guidelines that were established in Pennsylvania and other states across the U.S. in the 1980's. Mustard (2001) looked specifically at differences in the length of sentences for offenders who are sentenced in the same district court, for the same offense, and also have the same criminal background. He concluded that large differences do exist when controlling for extra-legal variables such as race, gender, ethnicity, and education. Black offenders, males, and offender's with low education levels as well as low income levels were more likely to receive longer sentences. The largest difference occurred between black and white offenders who were sentenced for drug and trafficking offenses.

Similarly, a study completed by Everett and Wojtkiewicz (2002) analyzed federal sentencing guidelines and differences in the severity of an offender's sentence. Findings showed that disparities existed as a result of racial and ethnic bias as well as other extra-legal factors such as gender, age and education. They found that Blacks, Hispanics and Native Americans are often all convicted for offenses that receive harsher sentences. They arguments are based upon both attribution and conflict theories which argue that minorities tend to receive harsher

punishments when compared to whites when all factors included are equal (Everett & Wojtkiewicz, 2002). Their findings were consistent with this theory. They found that if blacks and whites were sentenced exactly the same and had all of the same sentencing elements implemented, a bias would still would exist in that the severity of their sentences would be different. They found that blacks were 50 percent more likely than whites to receive harsher sentences and Hispanics were 39 percent more likely to receive harsher sentences.

Steffensmeier and Demuth (2000) focused on racial and ethnic disparities in sentencing examining data from the United States Commission from 1993 through 1996 to determine if an offender's racial/ethnic groups had an effect on the sentence. The data contained a large number of Hispanics. This allowed for a test of ethnic differences which did not happen in previous research. In the cases used, the judges were also allowed to depart (downward) from the sentencing guidelines as done in federal courts. Steffensmeier and Demuth (2000) concluded that Hispanics receive harsher sentences than both blacks and white defendants. Their findings show some degree of racial and ethnic disparity in sentencing as downward departures are present which is consistent with precious research surrounding other racial groups.

Hypotheses

I will test the following hypotheses in this research.

1. African Americans (blacks) and Hispanics will have lengthier sentences and will more likely constitute a large portion of the offenders sentenced to the death penalty as compared to whites and other minorities. Previous research has shown over lengthy time periods, in numerous states across America, that racial and/ethnic disparities exist with minority defendants receiving the lengthier sentences and hasher punishments such as the death penalty (Kleck, 1981; Steffensmeier & Demuth, 2000; Williams & Holcomb, 2001).

2. Offenders from urban areas/counties will more likely have higher prior record scores than offenders who live in more suburban areas and in turn will more likely receive harsher sentences. Urban areas are usually primarily populated by minorities groups while suburban areas are usually populated by white. There is also more crime in largely populated urban areas because they are more people there.

3. White offenders' will not receive sentences as severe as that of other racial and ethnic groups. Previous research has found that Black offenders are often sentenced harsher than white offenders and that many times black offenders with white victims are sentenced harsher than white offender's with black victims. There is a history of racial discrimination against blacks and other minority groups so there is the possibly that whites who are the majority will receive more lenient sentences. Wolfgang and Riedel in their 1973 study concluded that some of the differences that occur in judicial sentencing are the results of racial discrimination that occurs within our society.

4. Younger offenders will receive lengthier and harsher sentences than older offenders who commit the same offenses. Older offenders will more likely have their sentences reduced, or be sentenced to probation. Previous studies by Steffensmeier, Ulmer and Kramer (1998) found that young black males were sentenced than any other group. I believe that my findings will be consistent with previous findings.

5. Prior criminal record and the serious of the offense will have an effect upon the length of sentence received. An offender's prior record refers to their criminal history and one can assume that the majority of offender's will have some form of criminal history which will more

than likely effect the length of sentence that they receive since an offender's criminal history is taken into account in court.

Methods

Data Source

Data for this study came from the Pennsylvania Commission on Sentencing. In order to examine the relationship between race, gender, age, and length of incarceration, I analyzed the crimes committed by offenders, controlling for a number of extra-legal and legal variables as well as specifically all sentencing outcomes for all offenders convicted of murder in Pennsylvania from 2004- 2008 (N=1817) . In addition, I analyzed the data with the same independent variables used in the life or death penalty analysis with the maximum sentence received as the dependent variable.

Pennsylvania Commission on Sentencing

The primary purpose of the Pennsylvania Commission on Sentencing is "to address problems of unwarranted disparity and undue leniency in judicial sentencing" (PA Commission on Sentencing, 2009). The commission was established in 1978 by the General Assembly and their primary responsibility is "to develop sentencing guidelines that must be considered by all judges in sentencing felony and misdemeanor offenses" (Sentencing in Pennsylvania, 2007, p. 3). Pennsylvania first implemented sentencing guidelines in 1982. These guidelines are periodically updated so that they remain up to date with new legislation. The most recent edition of sentencing guidelines was released in 2008 (PA Commission on Sentencing, 2009)

Sentencing Data Collection

The Pennsylvania Commission on Sentencing data consists of felony and misdemeanor convictions in Common Pleas Courts that were reported to the commission in a given year. While the Commission does receive the majority of Murder 1 cases, it is important to note that Murder 1 cases are not required to be reported to the Commission because of the mandatory life/death penalty. District Magistrates and Philadelphia Municipal Courts are not required to report their sentences to the Commission. This is one of the limitations that exist within my research study.

All data compiled by the Pennsylvania Commission on Sentencing is gathered through a web based data entry system called Sentencing Guideline Software (SGS). The system was first used in 1998 and has been an integral part of the commission's data collection process since 2002 when it was formally introduced to counties and established as the new data collection format. The web based system improved the quality of the Commission data through built in accuracy checks. Prior to Sentencing Guideline Software, paper sentencing guideline forms were mailed to the Commission and entered by staff.

Offenses in Pennsylvania are classified by the seriousness of the current offense, which is referred to as Offense Gravity Score (OGS) and the seriousness and extent of the offender's prior record, which is referred to as Prior Record Score (PRS). (PA Commission on Sentencing, 2009). The Offense Gravity Score ranges from 1 (least serious) to 14 (most serious) and the Prior

Record Score ranges from 1-5 with categories for Repeat Felony Offenders (RFEL) and Repeat Violent Offenders (REVOC). These are the primary determinants in the length of an offender's sentence which consists of a minimum and a maximum sentence. The minimum refers to the average amount of time that an offender must serve before they can be considered for parole. The maximum refers to the total amount of supervision time that is required. Only the maximum sentence is used in this research.

Data Weighting

The unit of analysis for this study is the offender. Data were weighted by the number of crimes committed by an inmate. If an inmate committed only one crime, they were weighted as 1; two crimes resulted in a weight of ½; three crimes 1/3; etc. The maximum number of crimes committed by any one offender was 23.

Independent Variables

The independent variables to be examined include race, gender, ethnicity, County, prior record score, offense gravity score, and weapon type. Race of the offender was measured in four categories (1 "other," 2 "Blacks," 3 "Hispanics," and 4 "Whites)." "Other" included those races and/or ethnicities that had small numbers such as Asia Pacific Islander, American Indian, and those offenders who identified as "other'' in their report. Due to the very small number of other races in the data set, the "other" category was removed in the analyses. Blacks represented 63.3 percent (n= 1150), of the offender in the study, whites represented 25.7 percent (n=467) of the offenders in the study, and Hispanics represented 8.8 percent (n=159) of the offenders in the study. The remaining 2.2 percent of the offenders were in the "other" category which was not included. There were 163 females included in the data set and 1673 males.

The next independent variable used in the analysis was the offender's age on the day they committed the crime. The ages ranged from 8 to 78, the mean age was 27 and the median age was 25.

Prior Record Score is a weighted measure that takes into account the offenders prior criminal history (number and severity of prior offenses). Prior Record Score is measured on a scale from 0 – 5 with 5 being the highest and 0 meaning that the offender had no prior record. Under prior record score, offenders could also be classified as a "Repeat Felony Offender" which was measured as 6 or a Repeat Violent Offender which was measured as 7 (Pennsylvania Commission on Sentencing, 2009).

An offenders Offense Gravity Score (OGS) refers to the gravity or seriousness of the current offense, is measured on a scale from 1- 14, with 14 being the most serious score that an offender can receive and the number assigned to offenders who were sentenced to life in prison or the death penalty.. All offenses are classified on the basis of the seriousness of the current offense and the seriousness and extent of the offender's prior record (Prior Record Score). The commission has established guideline ranges for each combination of Offense Gravity Score and Prior Record score: (1) the standard range, to be used under normal circumstances, (2) the aggravated range, to be used when and if the judge determines that there aggravating circumstances (things that tend to increase the seriousness of the offense), and (3) a mitigated range, to be used when and if the judge determines that there are mitigating circumstances (things that tend to lessen the seriousness of the offense) (PA Commission on Sentencing, 2009).

When examining the data for the Pennsylvania counties that were analyzed in this study, I found that of the sixty counties, eight of those counties (McKean, Union, Tioga, Snyder, Elk, Montour, Forest, and Cameron County) were absent from the data set due to the fact that these counties do not have any convictions reported for the years 2004-2008. The counties that were included in this analysis were categorized according to their population sizes which were retrieved from the United States Census Bureau (2010). County populations were measured in seven categories (1"Population less than 10,000," 2 "Population 10,000 - 50,00," 3 "Population 50,000 - 100,000," 4 "Population 100,000 - 150,000," 5 "Population 150,000 - 300,000," 6 "Population 300,000 -500,000," and 7 "Population greater than 500,000."

The final independent variable that was examined was the weapon enhancement which I recoded into three categories. The weapon types included Guns, Hammer/Blunt Instruments, HandGun/Pistol/Revolver, Knife/Sharp Instrument, Long Gun/Rifle/Shotgun, and Other Weapons. I grouped the various types of weapons into three categories; (00 "no weapons", 1.00 "knives, hammers, etc.", 2.00 "firearms."). Approximately 80 percent or 1446 offenders did not use a weapon when they committed their offense while approximately 4 percent (n= 65) offenders used a knife, hammer etc., and 16 percent (294) offenders used a firearm. The descriptive information for the independent variables is presented in Table 1.

Dependant Variables

The first dependant variable in this study is the length of sentence. The length of sentence that an offender receives refers to the longest allowable maximum sentence and is recorded in months. Offenders who did not receive a prison sentence and instead got probation, community service, or a fine received a score of zero. Those offenders who receive the maximum sentence receive either a life or death sentence received 49 and 50 respectively.

The second dependent variable is whether or not the offender received a life or death sentence. These penalties are received for offenses classified as murder in the first-degree. Murder is classified as a felony in Pennsylvania and some types of murder are punishable by death. Under Pennsylvania law as it is defined in the Pennsylvania Crimes Code and Vehicle Handbook, a person is guilty of criminal homicide if he intentionally, knowingly, reckless or negligently causes the death of another human being (Pennsylvania Crimes Code and Vehicle Handbook, year, p. 502).

Criminal homicide is classified as murder, voluntary manslaughter, or involuntary manslaughter. Criminal homicide essentially constitutes murder of the first degree when it is committed by an intentional killing. Under Pennsylvania law, an offender can only be sentenced to the death penalty in cases where said offender is charged with first degree murder, Murder I. In this study, 0.5 percent (n=10) were sentenced to death and 17.3 percent (n=314) were sentenced to life in prison. Table 1 contains the descriptive information for the dependent variables.

Table 1. Descriptive Statistics

Independent Variables	N	Minimum	Maximum	Mean	Standard Deviation
Race					
Black	1798	.00	1.00	.6402	.48009
White	1798	.00	1.00	.2597	.43861
Hispanic	1798	.00	1.00	.0884	.28400
Offender's Age at Date of Offense	1813	8.90	78.03	27.4525	10.14227
Severity					
Offense Gravity Score (OGS)	1817	1.00	14.00	11.0141	4.16121
Prior Record Score (PRS)	1817	1	8	2.76	2.168
Weapon Type					
No Weapon	1806	.00	1.00	.8008	.39949
Knives	1806	.00	1.00	.0362	.18683
Guns	1806	.00	1.00	.1630	.36945
PA County	1817	1	59	33.11	17.500
Dependant Variables					
Maximum Sentence	1817	.00	99.00	30.7779	34.14918
Life or Death Sentence	324	.00	1.00	.0306	.17256

Analysis Method

Two analysis methods were used in the current analysis. Multiple regression was used for the analysis with the dependent variable maximum sentence because the dependent variable was at the ratio level of measurement. The life and death analysis was done with logistic regression. Logistic regression is used when the dependent variable is dichotomous. In the case of this analysis, the two categories are life (0) and death (1).

Findings

One dependent variable analyzed in this research is whether or not the offender received a life or death sentence. Since the dependent variable is dichotomous (0= life; 1= death), it was necessary to use logistic regression. Logistic regression allows me to determine the odds of an offender receiving a life or death sentence based upon the value of the independent and control variables. Table 2 presents logistic regression of the relationship between the independent variables and life versus death. Model 1 presents the effect of the offender's race on receiving a life or death sentence. Race did not have a statistically significant effect on whether or not an offender received a life or death sentence for murder. Model 2 adds the offender's age at the date of the offense and the offender's prior record score (PRS). None of the independent variables (race, age, offense gravity score, prior record, or weapon type) were found to be significant, Offense gravity score was not included in this analysis since all offenders convicted of murder have a score of 14 which is the highest possible score. In addition to examining the overall effect of race on receiving a life or death sentence, I also examined the effect of gender. The pattern for both men and women was the same as for the overall data.

Table 2. Logistic Regression of the Relationship between Independent Variables and Life versus Death Sentence, N=324

Including everyone in Population

Independent Variables	**Model 1**			**Model 2**		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Race						
Hispanic (Black is the comparison)	-1.480	2.689	.228	-1.377	2.694	.252
White (Black is the comparison)	.551	.657	1.735	.592	.712	1.807
Age of Offender at the Date of the Offense				.009	.030	1.010
Prior Record Score (PRS)				.091	.133	1.095
Constant	-3.591			-4.171		
Nagelkerke R^2	.018			.026		

Note
*significant at the .05 level
**significant at the .01 level
***significant at the .001 level

When examining the maximum offense that an offender received, I used a multiple regression analysis. For this dependent variable, the higher the number, the higher the offender's maximum sentence. The results are presented in Table 3. Findings show that whites are significantly more likely than both Blacks to receive a lengthier sentence for an offense ($p < 0.05$). Model 2 introduces the control variables. Controlling for the other independent variables in the analysis, race is no longer significant. It is important to note that the more serious the offense, the longer the sentence will be and overall, whites are committing more serious offenses than Blacks. Blacks are more likely to be sentenced for less serious offenses such as drug related crimes. Again, I examined the effects for both men and women and the findings were the same as for the overall sample.

Table 3. Multiple Regression of the Independent Variables of Maximum Sentence, N= 777.

Including all Variables for all population

Independent Variables	**Model 1**				**Model 2**			
	B	S.E.	Beta		B	S.E.	Beta	
Race								
Hispanic (Black is the comparison)	-1.813	2.896	-.015		-3.632	2.315	-.030	
White (Black is the comparison)	4.309	1.880	.055	*	-.158	1.618	-.002	
Age of Offender at the Date of the Offense					.119	.068	.035	nearly significant
Prior Record Score (PRS)					1.343	.307	.085	***
Offense Gravity Score					4.984	.159	.605	***
Weapon Type (No weapon is the comparison)								
Knives					-19.766	3.526	-0.107	***
Guns					-19.124	1.801	-0.206	***
Constant	29.981				-26.73			
R^2	.004				.369			

Note
*significant at the .05 level
**significant at the .01 level
***significant at the .001 level

Table 4 presents a cross tabulation of the offender's race and their weapon type. I found that Blacks (18.8%) are more likely to use firearms than both Hispanics (15.6%) and Whites (9.9%). Whites were more likely to use weapons that were not firearms such as knives and hammers (6.2%) when compared to Hispanics (5.6%) and Blacks (2.35%). When examining the offenses in which there was no weapon used, though there was a very slight percentage difference, with whites more often than both Blacks and Hispanics having no weapon when they committed a crime.

Table 4. Cross Tabulation of Race by the Type of Weapon, N= 1766

Weapon Type		**Race**			
		Blacks	Hispanics	Whites	**Total**
No Weapon	Count	900	126	390	1416
	% with Race	78.90%	78.85	83.90%	80.20%
Not Firearms-- Knives, etc.	Count	26	9	29	64
	% with Race	2.35	5.60%	6.20%	3.60%
Firearms	Count	215	25	46	286
	% with Race	18.80%	15.60%	9.90%	16.20%
Total	Count	1141	160	465	1766
	% with Race	100%	100%	100%	100%

Table 5 presents the findings from the multiple regression model which examines the effects of the size of the county where the crime was committed. Model 1 shows that the Pennsylvania counties of resident was related to the maximum sentence that an offender received ($p < .01$ level). Offender's who lived in larger counties, received a longer sentence than those. When race was included in the analysis, county still had a statistically significant effect on sentence ($p < .05$). In the third model, I add the incremental effects of the offender's age at the date of the offense, their Prior Record Score (PRS), and their Offense Gravity Score (OGS). Both the offender's Prior Record Score (PRS) and their Offense Gravity Score (OGS) were found to be significantly related to their maximum sentence when examining the Pennsylvania County ($p < .001$). After adding these variables, the county of residence was no longer statistically significant. It appears that the relationship between county and sentence is not significant once seriousness of offense and prior recorded are added as control variables.

Table 5. Multiple regression of County and Independent Variables on Maximum Sentence, N=1777.

Independent Variables	Model 1				Model 2				Model 3			
	B	S.E.	Beta		B	S.E.	Beta		B	S.E.	Beta	
PA County	-2.083	.672	-.073	**	-1.735	.748	-.061	*	-.595	.621	-.021	
Race												
Hispanic (Black is the comparison)					-2.314	2.896	-.019		-3.543	2.400	-.029	
White (Black is the comparison)					2.177	2.081	.028		.367	1.810	.005	
Prior Record Score (PRS)									1.385	.316	.088	***
Offense Gravity Score									4.569	.161	.556	***
Offender's Age at Date of Offense									.132	.070	.039	
Constant (County)	43.952				41.407				-22.930			
R^2	.005				.007				.320			

Note
*significant at the .05 level
**significant at the .01 level
***significant at the .001 level

Discussion

It is important to ask whether or not race and ethnicity are important factors in an offender's judicial sentencing process, especially since research over the years has provided inconsistent results as to whether or not minorities are discriminated against by the criminal justice system or whether or not race and ethnicity has an effect on an offender's sentence. Since the results are inconsistent, it is important to continue to examine this issue. In the current study, no race effect was identified. Steffensmeier and Demuth (2000) found that Hispanics received the harshest sentences for drug offenses when compared to whites who received more lenient sentences. Blacks were in the middle. They also found that Hispanic and Black Offenders received harsher sentences for drug offenses than for non-drug offenses (Steffensmeier & Demuth, 2000). Race effects were also found largely in earlier years in the studies of Kleck (1981), who found evidence of racial bias, but primarily in southern jurisdictions; and Radelet and Pierce (1985) who found that the defendant and victims race both played important roles in whether or not a defendant is sentenced to be executed.

The data for my study came from the Pennsylvania Sentencing Commission whose charge is to examine and inform about racial disparities in sentencing. Since they have been in existence for more than a decade, there has been time to put into effect changes in the sentencing system which would result in reduced racial sentencing disparities.

The rate of incarnation in the United States is extremely high and is perhaps the highest in the entire world. A 2008 study completed done by PEW, a research organization that works to advance state policies that serve the public interest, found that approximately one in one hundred Americans are behind bars. (PEW, 2008) The Bureau of Justice Statistics also found that from 1990- 2007, Blacks were almost three times more likely than Hispanics and five times more likely than whites to be in jail (Bureau of Justice Statistics, 2010). While these numbers may suggest problems in other areas of our judicial system, such as policies, which is what PEW suggests is a major problem; they are still a reflection of our judicial system and should raise a number of concerns for the American public.

Another important factor that needs to be empirically researched are the events that occur prior to an offender being sentenced. It is important to think about not only the offender's lives before they have been sentenced but also their interactions with law enforcement. Studies have shown that larger numbers of African Americans and Hispanics are being incarcerated especially for drug offenses and offenses that have white victims (Steffensmeier et al, 1998; Crawford et al, 1998) and this is inconsistent with data that shows that together they constitute less than 30 percent of the U.S. population.

It is highly possible that the discrimination in the criminal justice system begins when people are first stopped by police and not at the end when the sentencing occurs. It starts when people are picked up and searched by police via race. That part of the system is not as heavily watched as the sentencing and death penalty portion because no one is at the scene. Police have a significant amount of discretion when it comes to stopping people. As long as the officers indicate they stopped a person because they were suspicious, it is legally appropriate. However, it is possible that the officers are socialized to view minorities, especially black men, as being "more suspicious" than whites. Almost every state has a sentencing commission whose charge it is to be sure penalties are handed out in a fair way. On the other hand, there are many studies that show that police are more likely to stop African Americans and Hispanics, i.e. profiling,

more likely to search them and more likely to charge them with a crime (Alexander, 2010). All of this occurs despite the fact that racial profiling is unconstitutional.

Limitations of Current Research

It is important to note that like previous research, there are a number of limitations with this study. Prior studies found that the race of the victim often played a major role in the length of the offender's sentence (Williams & Holcomb, 2001); unfortunately victim information was not available in the data set used for this analysis. The Commission does not have a great deal of information on victims, with the exception of victim age. Victim age is included in some of the data, but it is not a required field, so it is missing for approximately 90% of the offenders in the data set. Due to the large amount of missing data, I was not able to include victim's age in the analysis. Previous researchers included race of offender/race of victim in their analyses and found disparities. In order to better make sense of the findings, it is important to have information about the victim included in the analysis and I was unable to do this in the current study.

Another limitation is how Murder 1 cases are reported to the Sentencing Commission. While the Commission does receive the majority of the cases the Murder I cases, it is important to note that Murder I cases are not required to be reported to the Commission because of the mandatory life/death penalty. Murder II cases are also not required to be reported, but may sometimes be reported. District Magistrate judge sentences, which include some DUI and Misdemeanor 3 offences as well as Philadelphia Municipal Court sentences, which include driving under the influence (DUI) as well as other misdemeanor offenses, are also not required to report their sentences to the Commission (Pennsylvania Commission on Sentencing, 2009).

Conclusion

Studies examining racial and ethnic disparities in judicial sentencing have had inconsistent findings. The current study did not find a racial or ethnic disparity in judicial sentencing, but instead has shown that whites are more likely to be sentenced to the death penalty than Blacks and Hispanics. However, after controlling for a number of extralegal variables, race once again was shown not to be a determining factor. It appears that whites are more likely to commit crimes that result in longer sentences as compared to Blacks and Hispanics. Further research should focus on how people enter the criminal justice system to determine if disparities exist in the beginning of the system. These data will be more difficult to gather since it involves a researcher traveling with police to examine their behaviors.

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First-Generation College Students: The Influence of Family on College Experience

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Abstract

According to Bradbury and Mather (2009), in the 2003-2004 academic school year 45% of new students enrolling in four-year institutions were first-generation students. When compared to continuing-generation college students, first-generation students have been shown to find the college going experience to be more stressful (Phinney & Haas, 2003). Despite the knowledge that these students find the college going experience to be more stressful, prior research has failed to examine the relationship between the families of these students and their college experience. Qualitative data was collected through three semi-structured focus group interviews with first-generation college students. Of the 19 participants, 37% (*n*=7) were male and 63% (*n*=12) were female and all were between the ages of 18 and 25. Based on the coding procedures for this study, five categories related to family influence emerged: (a) support; (b) understanding; (c) motivation; (d) goal achievement and (e) expectations.

Introduction

According to Bradbury and Mather (2009), in the 2003-2004 academic school year 45% of new students enrolling in four-year institutions were first-generation students. Additionally, of the first-generation college students who enter into four-year institutions only 43% obtain a bachelor's degree, compared to 59% of continuing-generation college students. When compared to continuing-generation college students, first-generation students have been shown to find the college-going experience to be more stressful (Phinney & Haas, 2003). It has been suggested that the increased level of stress for these students may be attributed to factors associated with first-generation college students: ethnic minority backgrounds, poorer academic performance, lack knowledge of the university system (Dennis, Phinney, & Chuateco, 2005), lower critical thinking abilities, and less likelihood of persisting in higher education (Ishitani, 2003; Lohfink & Paulsen, 2005). Additionally, first-generation college students are likely to work more hours per week than second-generation students (Barry, Hudley, Kelly, & Cho, 2009; Dennis, Phinney, & Chuateco, 2005; McConnell, 2000; Pascarella, Pierson, Wolniak, & Terenzini, 2004; Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996), experience less help in planning for college (Choy, Horn, Nunez, & Chen 2000), and also tend to be from lower income families (McCarron & Inkelas, 2006; Phinney & Haas, 2003).

Despite the knowledge that these students find the college experience to be more stressful, prior research has failed to examine the relationship between the families of these students and their college experience. In the literature regarding first-generation college students, researchers have examined the influence of families in subpopulations of first-generation college students and have quantitatively analyzed the college experience in general. The purpose of this study, therefore, is to qualitatively explore the influence of family on the college experience of first-generation college students.

Family Influences on First-Generation College Students

There are a limited number of research studies that examine the influence of family on first-generation college students and an even fewer number of studies that specifically consider their influence on college experience. Of the literature related to families and first-generation students, it has been suggested that one of the best predictors of postsecondary aspirations is family support (McCarron & Inkelas, 2006; York-Anderson & Bowman, 1991). Despite this important contribution, there are varying definitions of family support, which has led to conceptual confusion in the field. Quantitative research measures family support based on ratings on a likert-type scale in which participants indicate the level of support felt from families when facing college-related problems and the level of understanding expressed from family members (Dennis, Phinney, & Chuateco, 2005). Other areas of family support have been highlighted in the literature, including parental involvement. This form of family support relates to parental support in the students' educational development and attendance at students' extracurricular activities (McCarron & Inkelas, 2006). These items are also measured based on the student's response on a likert-type scale. These quantitative analyses neglect to develop a deeper understanding of how first-generation college students view family support.

One qualitative study examining the role of family involvement and the postsecondary success of first-generation college students sought to develop a deeper understanding of first-generation college students' college experience (Bryan & Simmons, 2009). This study found that first-generation college students do not receive the same levels of support from their families as continuing-generation students, largely because of the family's lack of knowledge about post-secondary education. This lack of knowledge and resulting decrease in support was found to evoke feelings of anxiety and frustration in first-generation college students. This study also found that family relationships play a key role in the social development and academic success of first-generation college students. This study's population included 10 students from the Appalachian counties of Kentucky who all had participated in a particular early intervention program for Appalachian students. Nine of these participants were Caucasian and one was Korean-American. According to the authors, this sample of 10 students was unrepresentative and gathered by convenience sampling. Because this study collected data from a largely rural area, utilized convenience sampling, and included primarily Caucasian students, the knowledge that can be generalized from it is limited.

Similarly, Bradbury and Mather (2009) conducted a qualitative study examining the experiences of first-generation college students in an effort to understand the factors associated with college integration. The sample for this study including nine first-generation college students in their first term of college from the Ohio Appalachia regions of the United States. Participants were selected based on either their participation in the institution's summer

orientation sessions or enrollment in the introductory psychology course at the institution. This study found that relationships with family played a critical role in student success. Connections with families provided these students with identity and security. Families were also shown to influence these students' decision to attend college through encouragement and support (Bradbury & Mather, 2009).

The findings of an additional qualitative study examining first-generation college students and family were consistent with prior research that demonstrate the importance of family on academic achievements (Gofen, 2009). This study was conducted in a university in Israel on 50 first-generation college students from rural areas or urban neighborhoods. The criteria for participation included that the students be first-generation and that their parents or grandparents had been born in North Africa or Asia. In addition, McCarron and Inkelas (2006) found that there was a positive relationship between parental involvement and the educational aspirations of first-generation college students. Using the National Educational Longitudinal Study's sample of students from the final wave of the study, 1,879 first-generation college students and 1,879 continuing-generation college students were sampled (McCarron & Inkelas, 2006).

Although this information is useful in understanding the impact of family on first-generation college students' attrition, persistence, and academic aspirations, the research available is primarily quantitative. Those qualitative studies that focus on the family's influence largely pertain to subpopulations of first-generation college students, such as the Appalachian student studies. The information regarding the college experiences of first-generation college students seems to be less available as specificity increases. In other words, there is a wealth of knowledge regarding various aspects of first-generation college students, their persistence, their attrition rates, and their academic preparedness (Bryan & Simmons 2009; Ishitani 2003; Ishitani 2006; Lohfink & Paulsen 2005; Terenzini, Springer, Yaeger, Pascarella, & Nora 1996; York-Anderson & Bowman 1991), but few qualitative studies related to families and first-generation college students; and, even fewer studies that are specific to how families influence the college experience of these students.

The Current Study

This study draws upon the initial efforts of Bryan and Simmons (2009), Bradbury and Mather (2009), Gofen (2009), and McCarron and Inkelas (2006) to describe how families influence the college experience of first-generation college students. More directly, the current study builds upon previous research in three important ways: (a) it examines the influence of family on ethnically diverse individuals; (b) develops an understanding of the influence of family on the college experiences of first-generation college students; (c) thematically analyzes the influence of family on the success of first-generation college students. This study, using a constant comparative method was guided by the following research question, "How do families influence the college experiences of first-generation college students?"

Method

Procedures

Qualitative data was collected through three semi-structured focus group interviews with first-generation college students. These interviews took place during summer 2010 at a large predominantly white Middle-Atlantic university in the United States. Focus groups were

selected due to their ability to elicit in-depth thought and discussion in participants (Ulin, Robinson, & Tolley, 2005). The focus group interviews lasted for approximately 90 minutes. During the focus groups, the participants were asked to complete a demographic survey as well as an informed consent form. Demographic survey questions included topics related to the participant's major area of study, ethnicity, grade point average, and their guardian's highest level of education. Each of the three focus groups were audio recorded and transcribed. Categories and themes related to the relationship between family and the experiences of first-generation college students were then generated from transcription and data collection.

The focus group participants were identified based on their membership in various university programs offered to provide services to first-generation students. The primary researcher was responsible for contacting the program directors. In this initial contact, the researcher requested that a recruitment email be sent to any individuals who fit the criteria for the study. In particular, criteria dictated that participants be first-generation undergraduate students who were 18 years of age or older. The recruitment email provided individuals with details regarding the importance of the study as well as the process for participation. The email also instructed individuals to contact the primary researcher if they were interested in participating. Those individuals who expressed interest in participating in the research study were reminded approximately one week prior to their participation via a reminder email that specified the date, time, and location of each their particular focus group interview.

Participants

In total, 19 individuals participated in one of the three focus groups. Of the 19 participants, 37% (*n*=7) were male and 63% (*n*=12) were female and all were between the ages of 18 and 25. The semester standing of the individuals included sophomores (16% (*n*=3) of the total individuals), juniors (11% (*n*=2) of the total participants), senior and fifth-year seniors (68% (*n*=13) of the total participants) and 5% (*n*=1) of the participants graduated one month prior to the study. Overall, the racial and ethnic breakdown of the participants was: 21% (*n*=4) Asian or Pacific Islanders, 58% (*n*=11) African Americans, 10.5% (*n*=2) Caucasians, and 10.5% (*n*=2) Hispanic or Latino Natives.

In the literature regarding college students, there are typically two different groups of students, first-generation and continuing-generation students. First-generation student status is attributed to students who are the first in the family to attend college. In other words, the parents of these particular students did not attend an institution of higher education or attended an institution and did not obtain a degree (Barry, Hudley, Kelly, &Cho 2009; Bryan & Simmons 2009; Choy, Horn, Nunez, Chen 2000; Ishitani 2003; Ishitani 2006; Lohfink & Paulsen 2005; McConnell 2000; Pascarella, Pierson, Wolniak, Terenzini 2004; York-Anderson & Bowman 1991). In contrast, continuing-generation students are those students who have at least one parent with a postsecondary degree (Lohfink & Paulsen 2005). For the purposes of this research study, first-generation college student was defined as any college student who does not have a parent (or primary caregiver) with a postsecondary degree. In order to ensure that the participants met the criteria of first-generation college student, they were asked to identify their guardians' highest level of education. For this question, participants were to label the educational level of their guardian with the highest educational attainment. The responses included: grade school (grades kindergarten to fifth), which 16% (*n*=3) of participants identified as the highest

level of education for their guardians; middle school (grades six to eighth), which 5% (*n*=1) of participants identified as their guardian's highest level of education; and high school (grades nine to twelve), which 42% (*n*=8) of participants identified. Some participants also identified that their guardian had some college education, in which no degree was obtained 26% (*n*=5) of participants), while some guardians were certified in a specific area (5% (*n*=1) participant). Some participants (5% (*n*=1)) did not provide any information related to their parent's level of education.

Researcher Focus and Data Analysis

Due to the importance of the researcher in coding the qualitative data, it is crucial to become more familiar with the researchers. The first author is an undergraduate at the university in which the data was collected (located in the Middle-Atlantic region of the United States). The first author is also a participant in the federally funded Ronald E. McNair Scholars Trio program and is a first-generation college student. As a result of the research requirement for the program and her personal experiences as a first-generation college student, the first author developed an interest in examining the experiences of this particular population of undergraduate students and the factors related to their success. The second author is a faculty member in counselor education at the same university. Based on her research that considers the contribution of school-family-community collaboration for addressing educational, social, and mental health inequalities, the second author is also interested in understanding how families impact the success of first generation college students. The second author also has expertise on how family systems impact academic outcomes for youth. Given our personal and professional backgrounds, we share an interest in first-generation college students and families.

The influences of family on the success of first-generation college students were analyzed using the constant comparative method. After the focus group interviews were transcribed by the first author, both authors worked together to analyze the data. Beginning with open coding, we independently analyzed the first transcript to identify key concepts related to how families influence the academic success of first-generation college students. After coding the first transcript, we met to examine the results of our coding, discuss discrepancies, and came to a consensus about areas of disagreement. We repeated this process for the remaining focus group transcriptions, which resulted in new codes and the refinement of previous codes. After a codebook was finalized, each transcript was recoded.

After recoding each transcript, we used axial coding to examine the relationships among the codes and to identify relevant categories for the data. More specifically, we sorted previously identified codes based on similar meanings to identify higher-level categories. Coding of the transcripts continued by each author until we reached saturation of findings; when no new categories or ideas about conceptual relationships emerged.

Several actions were taken to ensure the trustworthiness of our findings. More specifically we: (a) used investigator triangulation (first analyzing the responses separately and then together; (Lincoln & Guba, 1985; Patton, 2002); (b) recruited multiple participants to triangulate the data (Creswell, 2008; Patton 2002); (c) continually recoded the transcripts to verify our findings and evaluate researcher bias; and (d) identified rich descriptions from participants (Lincoln & Guba, 1985).

Findings

Based on the coding procedures for this study, five categories related to family influence emerged: (a) support; (b) understanding; (c) motivation; (d) goal achievement and (e) expectations. Each category and their relevant themes are discussed below. Quotations from participants are included to illustrate findings. In addition, the most frequently discussed categories are presented first.

Support

This category emerged from conversations related to the different levels of support the participants received from their families. The themes discussed related to support include the presence of support and the lack of support. The presence of support varied from unconditional support in which the family supported the decisions made by the participant, direct support in which the family directly assisted the participant, and indirect support in which the family sought out sources in order to assist the participant. As one participant notes:

> My parents always made it clear "you are going to college. Wherever you want to go, just pick the place, pick the state." …It didn't matter to them where I went because my mom had a lot of resources and a lot of different people. So she said, "I am going to have you talk to this person today." Or she would take me on visits and plan college trips to expose me to what I needed to see to make my decision where I wanted to go. But ultimately the decision was mine. She would review my college applications but I filled them out. I researched the schools that I wanted to attend and chose the best choice for me. But I think that by her support system there was someone else I could go to that she could reach out for help as well.

This statement exemplifies the interaction between unconditional support, direct support, and indirect support. Her parents supported her decision when it came to selecting a college and, her mother in particular, displayed direct support by planning college visits and assisting with college applications. Her mother also indirectly supported the participant by seeking other resources in order to expose the participant to various sources of information in order for her to make the best decision for her future.

In terms of lacking support, participants exhibited a yearning for familial assistance and feelings of sadness and solitude as a result of the lack of support. For these participants, their families did not provide access to college information directly nor indirectly prior to enrolling in college and also did not provide support once the participant began taking courses. In some instances their families provided conditional support; in other words, their parents were more concerned and more supportive of the achievements, goals, and behaviors that they wanted to see and less concerned and supportive of the things that made the participant happy. For example, one participant shares:

> I told my dad I'm going to travel and that's my job. He goes, 'finish school then you can travel as much as you want.' [He is saying,] "Work your ass off then travel" and I'm like 'Wait, but that's my job, I want to travel.' But he doesn't

> understand. [He wants me to] work really hard for what [I] want then do what [I] want later but I'm like "No!" That makes no sense to me. I can have all the money but I'm not going to be happy so what's the point… Their definition of happiness is money can buy you happiness. That's not true. That's not true at all.

For her it was difficult for her parents to support her decisions. Earlier in the interview the participant stated that her family does not understand what she is majoring in. As she explained earlier in the interview, her parents want her to major in a field that will make her more financially stable and, as a result, she has trouble sharing her goals with her parents. The participant states that she is waiting for the day when she finishes college and her parents can finally see that she is truly happy.

Understanding

The category of understanding surfaced as the participants discussed their college experiences. Many of the participants expressed a lack of understanding and knowledge from their parents. The participants discussed that their parents knew very little about the various aspects related to obtaining a college degree and the college experience in general. As a result of this lack of understanding, a number of the participants described feelings of frustration, annoyance, and jealousy. Some participants explained that they completely avoided conversations with their parents surrounding school-related topics in an effort to avoid the negative emotions elicited from these conversations. A participant illustrated these particular sentiments as she responded to a statement made by another participant. The participant stated that she does not find it important to share her college experiences with her family, she added:

> Same here because half the time [my mom] is like "What?!...did you do that?!" and I say, "what do you mean why did I do that? I'm supposed to" then she says, 'Why would you have to do that?' It's just too much. It's overwhelming. Not overwhelming but annoying. So scratch all that, tell her I am doing fine, and call it a day.

Some participants described feeling jealous of continuing-generation students' family relationships. The participants' families displayed disengagement from, or indifference to, their college experiences, which resulted in the feelings of jealousy. One participant helps to demonstrate this point by connecting her current university employment experiences with her personal experiences:

> For me…sometimes I do feel like I wish my parents could be more involved and know about what I'm going through here at college. Like all the challenges I have to go through, all the internal struggles, or all the stuff I'm going through here… Through working with [the university's orientation program] I see a lot of parents coming with their kids. They were in the family session learning about all those kinds of resources [the university] has to offer and how the parents can get involved by helping their kids to gain a more successful experience here at [the university]. By observing all this I feel like I wish my parents can be more involved."

Later in the interview she shares that, as an incoming student, she attended her orientation alone and was surprised that most other students arrived with a parent or guardian. In response to this participant's comment, other participants shared that they too attended the orientation program alone.

Motivation

This category emerged from discussion among participants in all three focus groups about how families did, or did not, play a direct role in motivating them to go to college. When considering a student's motivation to attend and perform well in college the findings suggest two primary themes: personal and family. In terms of being motivated to attend and perform well in college for personal reasons, students shared that their family did not play a role in their decision to enroll in post-secondary education; instead the students enrolled because they wanted to attend college. As one participant noted,

> I've been pretty self-motivated most of my life so I pretty much did everything on my own…my parents have guided me along the way but I pretty much made my own decisions…they had both finished high school and I decided to come to college but none of them had even thought about college until I got into college.

Those students who felt that their parents motivated them to attend and perform well in college typically acknowledged that their motivation was largely "invisible." Some of these invisible motivators included: not wanting to disappoint family members, wanting to support family members (primarily financially), wanting more than family members have achieved, and increasing the sense of family pride, among other motivators. One participant describes motivation:

> My family, we're not really rich and stuff so I want to be something different, be something better even though my parents never come after me and say 'oh you have to do your homework or you have to get an A.' They never say anything like that but knowing that they work in a position where they don't want to be and [I] don't want to be like that, that kind of really invisibly motivates [me] to do better and want to be successful.

This participant was motivated to be successful primarily because of her family. She explains that she has never been directly told to do well but has determined that she must do well in order to achieve more than her family members have. This participant also speaks to the financial status of her family, which may indicate motivation to be successful in order to support her family in the future.

Goal Achievement

In this category participants discussed the relationship between the achievement of their personal goals and the goals of their families. In this category, themes related to the encouragement of goals defined by families or of personal goals emerged. Some of the participants described their families as more concerned with the achievement of predetermined goals. These goals tended to be what the family considered to be important. Often times this method of encouragement created a pressure to succeed within the participants. The pressure

was at times in response to the gap in ideas of achievement between the student and their family members and was also attributed to the discrepancy in the value and perception of the students' goals. One participant highlights his experiences of applying to college when he stated, "My mother came out with an itemized list of colleges and said, "pick one"…I only applied to one school…She wasn't happy about that. She wanted me to apply to 10 different schools, send in all those applications..." In his situation, his mother decided, without consulting him, what schools he would be a applying to and how many applications he would send out. For other individuals experiencing this method of encouragement of goal achievement, family members were not as involved when it came to applying to school but had differing values and opinions regarding the student's major coursework. As one participant notes,

> [My goals] are different than what they had in store for themselves. I think in the end they want the best for [me]. [They say], 'you're not going to get a lot of money in that [major]' but [my response is], "it's not your money so why are you worried about it?"

Other students discussed a different method of encouragement from their families. In some instances the family members and the students shared the same ultimate goals and, even when their goals did not coincide, the family encouraged the students to achieve the student's personal best. These participants seemed to feel less pressure to achieve a particular goal, which may be in response to this particular level of encouragement. To better illustrate this method of encouragement for goal achievement one participant speaks of her relationship with her mother:

> Growing up my mom she generally pushed me to always do my personal best but never pushed me in any certain direction. If I wanted to go to college then that was fine but I had to be the best. If I wanted to go and do make-up, that would be fine but I had to do the best that I could possibly do. So, it didn't matter what it was that I was doing but she was always there to support me and to push me and make sure that I had the best backing to do whatever I wanted to do.

As many of the other participants who described this type of encouragement, this participant highlights the importance her mother placed on achieving her personal best. This participant does not speak of any pressure to attend college or be successful in one specific avenue of life; she states that her mother would have been fine with whatever path was selected.

Expectations

The participants also discussed familial expectations. From the focus group interviews, it seemed as though the parents of the participants either had higher expectations or lower expectations for their child. Those individuals who described their parents as having higher expectations also felt as though their parents encouraged them to achieve predetermined goals and felt as though their family added stress and pressure to achieve. One participant was expected to graduate by a certain semester but was forced to stay an extra year in order to fulfill all of her course requirements. She describes the reaction of one family member:

> I had to tell my godmother I have to do another year. That was not processing in her mind at all…she didn't want to hear it because she's like, 'You're supposed to

> be on time. You're supposed to be May 2010.' So, when I told her I'll be May 2011 she didn't want to hear that and it kind of got me frustrated because I came to grips with it now I just need [her] to come to grips with it because [she is] going to stress me out. [Now, I will be thinking in the back of my mind, "you are] not going to be there because I got to do an extra year." It's an extra year…I didn't say I was dropping out of college… I'm not ready yet so just accept it.

Her godmother, in particular, had a preset notion that this participant should graduate from college in four years and when that was not the reality of the situation, her godmother did not react positively. As the participant later describes, it took a while for her godmother to accept that she needed an extra year before graduating.

The portion of participants who described their families as having lower expectations shared that their parents also provided little to no direct or indirect support during the college application process. These participants frequently identified that they were more personally motivated to attend and perform well in college. For some individuals, their parents had not considered college as an option for them. Of the individuals with this sort of experience, one participant seemed to summarize the experiences of those who had parents with lower expectations when he said:

> From my experience, I felt like I've met my mom's expectations. I graduated high school and she was happy about that and I actually went to college… And, now I feel like I passed that ceiling for her and now for me I am like 'all right, I'm in college now, what do I want to do? ...She never once mentioned [graduate] school to me, and if I were to mention that to her she would be like 'Oh do whatever you want to do' and I'm like 'Gee thanks.' So its like once you reach the top of their limit and you want to go beyond that you can't really rely on them as a source of information and you have to go around them or above them for that.

Discussion

The goal of this study was to examine the influence of family on the experiences of first-generation college students. Far too often in the literature regarding this population of students researchers seek to examine the academic preparation of first-generation college students as well as their attrition and persistence rates (Bryan & Simmons 2009; Ishitani 2003; Ishitani 2006; Lohfink & Paulsen 2005; Terenzini, Springer, Yaeger, Pascarella, & Nora 1996; York-Anderson & Bowman 1991) but focus little attention on the influence of families on the college experience. Through semi-structured focus group interviews, five categories emerged highlighting the role of family on college experience. The themes related to family and college experiences include: (a) motivation; (b) goal achievement; (c) expectations; (d) understanding; and (e) support.

As the current study found, participants were motivated to attend and succeed in college in two ways: family motivation and personal motivation. The invisible motivators associated with family motivation—such as wanting to financially support family members—is consistent with previous literature related to first-generation college student motivation to attend college. McConnell (2000) states that, when compared to continuing generation students, first-generation students are more likely to attend college in order to achieve financial stability. Additionally,

Gofen (2009) found that first-generation college students have a desire to please their parents. This is similar to the invisible motivator of not wanting to disappoint family members found in the current study. Conversely, there is scant literature related to personal motivation and first-generation college students. The literature regarding personal motivation to attend and perform well in college for first-generation college students largely assesses the extent to which motivation is attributed to persistence rates. Dennis, Phinney, and Chuateco (2005) found that personal motivation was predictive of college adjustment and commitment.

From the data, two dimensions related to familial encouragement of goal achievement emerged. The finding that first-generation college students experience pressure to succeed was consistent with prior research findings (Bryan and Simmons, 2009). Likewise, Gofen (2009) found that parents expected their child to attend college and saw college as an opportunity to achieve what they had not been able to. This may be connected to what the current study suggests as the cause for increased pressure—family members being concerned with the achievement of predetermined goals. This is also consistent with the finding in the current study and in the literature that family members have high expectations for their children (Cabrera and La Nasa, 2001). For students in past research and in the current study, they felt obligated to fulfill the expectations of their families (Gofen, 2009). This obligation may be more characteristic of first-generation college students who are motivated by their family to attend and succeed in college.

The literature related to parental understanding suggests that first-generation college students lack the social support of individuals with college experience (Barry, Hudley, Kelly, and Cho, 2009) and, as a result, are uncomfortable with sharing their college experiences (Bryan and Simmons, 2009). Consistent with previous research, the participants in the current study shared that their parents had little knowledge related to the college application process, as well as the college experience in general. For some participants this lack of understanding led to feelings of frustration and annoyance and resulted in avoidance of school-related conversations with family members. Similarly, Bryan and Simmons (2009) found that first-generation college students form separate identities in which students keep their families separate from their college experiences. The students in the Bryan and Simmons (2009) study explained that their families had not spent a significant amount of time on campus. These students did not see their family's presence on campus as necessary. This finding contradicts what the participants in the current study expressed; instead, these students expressed jealousy of other students who had greater family involvement. This discrepancy may be due to the differences in the research samples. The Bryan and Simmons (2009) study utilized participants who came from Appalachian communities in which there was a high level of involvement between the students and their families and home communities. Of the 10 participants in the Appalachia study only one of them was an ethnic minority. The current study had a greater number of ethnic minority participants, all of whom came from various communities.

While it has been suggested that family involvement, parental involvement in particular, is important in the decision to enroll and succeed in postsecondary education for first-generation college students (Cabrera and La Nasa, 2001; Choy, Horn, Nunez, and Chen, 2000; Gofen, 2009; McCarron and Inkelas, 2006), research indicates that the students receive less support from their families than do continuing-generation students (Gofen, 2009; McConnell 2000). This lack of

support is consistent with the findings in the current study. Often times the lack of support was related to the limited parental understanding of the college experience. For the participants in the current study, as a consequence of a lack of support and understanding, the students shared less of their college experiences with their families. This has been identified as low levels of disclosure to family in prior research and is suggested to add difficulty to the college experiences of first-generation college students (Barry, Hudley, Kelly, and Cho, 2009).

The findings of the current study also indicate that first-generation college students experience support from their families on multiple levels including: unconditional support, direct support, and indirect support. These findings are consistent with the literature regarding family support. Gofen (2009) found that for some families, the child's abilities are not doubted and the child is viewed as important. In these families, members do not fear failure because they are given the opportunity to take chances (Gofen, 2009). This is similar to the finding of unconditional support in which family members supported the decisions made by the participant. Additionally, unconditional support was discussed in prior research as the level of support received from family members when students came to college. Bryan and Simmons (2009) found that while family members did not completely understand the college process they still showed support and happiness for their children when going to college. Direct and indirect support were also discussed in previous research as Cabrera and La Nasa (2001) highlight the components of parental encouragement. They indicate that first-generation college students benefit from proactive parents who are involved in, and discuss, the college experience with their children and save money to pay for college (Cabrera and La Nasa, 2001).

Limitations

As with any research study, there are limitations to the current study, which should be considered when interpreting the findings of the study. One major limitation deals with the time period in which the study was conducted. Research was conducted during the summer months, which reduced the potential sample size. From an institution with over 40,000 thousand students enrolled during the Fall and Spring semesters, much of the university's population leaves for the summer sessions. As a result of the time period in which this study was conducted, only 19 individuals participated in the study. Students who were not able to participate as a result of their summer locations may have had different experiences than those who were able to remain in the university's surrounding county. Additionally, there was self-selection bias in that students had the option of whether or not to participate in the research study. Those who decided to participate may have had distinctly different experiences than those who decided not to participate. The sample was also primarily African American students, which may have also impacted the findings of the current study. As a result of this ethnic breakdown, there may be cultural differences among the participants that may account for these particular finding. A final limitation to the study is that many of the students were considered high-achieving students. Of the 19 participants, 10 of them were in graduate school preparation programs and 2 participants were members of the university's honors college. Their participation in these programs may influence their college experiences. There may be differences between high-achieving students and those students who may not participate in such programs.

Conclusions

Despite its limitations, findings from this study contribute to the knowledge-base regarding the influence of families in first generation college students. Although first-generation college students account for 45% of the incoming students at four-year institutions (Bradbury & Mather, 2009), few studies have specifically examined the influence of family on the college experiences of first-generation college students. The findings of the current study suggest that families have a significant influence on the college experience of first-generation college students.

Based on the current study, families motivate their children to attend and perform well in institutions of higher education primarily indirectly, or invisibly. These students are motivated to attend college for many reasons including to achieve more than their parents have achieved or to support their family members financially in the future. Likewise, families played an indirect role on the student's college experience through the expectations they had of their children. Some of the students felt that their families had high expectations for them, which may have contributed to their increased feelings of stress and pressure. Students also felt pressured when their parents encouraged the achievement of predetermined goals in which their families may not have valued the student's goals. The current study also found that for those first-generation students who had the presence of support were able to make decisions for themselves; whereas those who felt they lacked support were less concerned with the student's personal goals.

Research seeking to understand the influence of family on college experience is both necessary and important for the field of higher education. University administrators and staff serving first-generation college students can benefit from the findings of the current study. In an effort to better understand the college experience of advisees who identify as first-generation college students, advising personnel can utilize the findings of this study to better serve first-generation individuals. By understanding the pressures and stressors associated with being a first-generation college student advisors may be better able to direct their students to services. With this understanding of the role families may play in the college experiences of first-generation college students, university personnel may be better equipped to minimize the factors that have been shown to negatively influence these students' college experience.

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Child Prostitution in 12 Countries: An Exploratory Study of Predictors

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Abstract

Few empirical studies have focused on examining the predictors of childhood prostitution across countries. In this exploratory research article, I examine the predictor variables of child prostitution in 12 countries. These variables include literacy rates for women aged 15 to 24, total population literacy, Per Capita Gross Domestic Product, dominant religion, HIV/AIDS infection, life expectancy, and percent of young women who are economically active, total fertility rate, and age population structure. Thailand has the highest rate of child prostitution among the 12 countries included in the analysis. Findings show that as literacy rates for women, life expectancy and percent of women who are economically active increase, rates of child prostitution decrease. Additionally, as fertility rates decline so does child prostitution.

Keywords: child prostitution, country, predictors.

Introduction

Child prostitution has received considerable attention in the academic literature. Very few studies, however, have focused on predictors of child prostitution by country. The current study focuses on predictors of child prostitution by examining macro-level variables including female literacy, abortion, gross domestic product, poverty levels, and laws to protect the women and children as well as the relationship of these predictors to child prostitution rates within a country. Twelve countries chosen for the availability of

data estimates of child prostitution are included in the analysis. This research is exploratory in that very little accurate data on child prostitution is available. The focus of this study is to determine if there are any consistent predictors of childhood prostitution among these 12 countries. I will be unable to determine if there is a cause and effect relationship between these variables and child prostitution due to the kind of data used in the analysis. I will also focus on the policy implications of the research findings. Children are often called our most precious resource but societies do not necessarily do everything they can to protect children. Since children are powerless, it is important to conduct research, research that may lead to an increase in their quality and quantity of life.

Definition of Child Exploitation

In order to examine child prostitution, it is important to be able to define and measure the concept. In the "*Training Manual to Fight Trafficking in Children for Labour, Sexual and Other Forms of Exploitation: Understanding Child Trafficking,*" ***child*** is defined as "every human being below the age of 18 years unless, under the law applicable to the child, majority is attained earlier" (UNICEF 2009:13). The definition of **trafficking** included in this manual is,

> The recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, or fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organ (UNICEF 2009:14).

Although there is no concrete definition of *child prostitution,* there is, however, a definition for *child trafficking* **"**a child has been trafficked if he or she has been moved within a country, or across borders, whether by force or not, with the purpose of exploiting the child" (UNICEF 2009: 14). Even though there is not a definite definition of what child prostitution is, it is in a way similar to prostitution generally. Child prostitution would then only mean that adults are not included in the definition and the focus will be solely on children.

Prostitution and sex trafficking are not mutually exclusive. The two ideas are similar in the way that they involve sex and exploitation but they are different in other aspects. Butcher (2003) wrote in *Confusion Between Prostitution and Sex Trafficking*,

> Distinction between trafficking and prostitution is important because it pivots on individual agency. Trafficking, though variously defined, covers coercion, forced labour, and slavery. Prostitution describes the sale of sex, by no means necessarily without consent or with coercion. At a time when trafficking is increasing, as are

> international efforts to tackle it, it is critical to clarify the differences between the issues (Butcher 2003:1983).

The data for the current study focus on child prostitution. Since children cannot engage in this activity of their own volition, it is implied that child trafficking is also taking place.

Explanations for Prostitution

Economic Explanations

There are many factors that drive women and children into prostitution, such as "extricating themselves from poverty or from a difficult home life, and earning enough to help the family of origin out of poverty or to build a foundation for their own futures" (Muecke 1992: 897). Prostitutes are like any other member of society, with common goals of financial stability for themselves and their families. Davidson (2001) stated that

> Prostitution is simultaneously a sexual and economic institution, and it is able highly gendered. The majority of prostitutes are female, and an even larger majority of customers are male. While men's prostitute use is widely tolerated, female prostitution is popularly viewed as a form of social and sexual deviance, and mainstream social scientists have traditionally reproduced such attitudes in their research on the topic (Davidson 2001: 12244).

Women are viewed as sexual objects in many countries. The status of women in each country affects how others, especially men, view them.

Researchers have given considerable empirical attention to economic explanations for prostitution. Taylor (2005) did a 14-month study in two northern villages of Thailand. Her study was intended to examine the relationship of parents' investment in their children and the familial roles that is related to child labor, prostitution, and also trafficking (Taylor 2005: 411).

What Taylor found in her study was that "girls who have spent most of their childhood in school and their families expect high returns on their human-capital investment" and also, children who enter the workforce at an early age does not essentially mean that it leads to a high chance for child trafficking or prostitution. At the same time, high education and entrance into the labor force at a later age does not equate with low risk and child trafficking or prostitution (Taylor 2005:423).

The reason for entering the sex industry may vary from country to country, but in order to examine these differences, the demographic variables of each individual country must be included in an analysis.

Taylor (2005) concluded in her study, homes where the females are the head of the family they are often unable to afford to take care of their children. Sending the

children away to go into the city to work helps provide a reliable source of income for the family. This is often the common solution for families with financial instability. Findings also show that Thai parents would discontinue their children educational attainment, with the agreement of the children sometimes along with their parents in the decision to stop attending to school and go work in the city because of the opportunities the city has to offer (Taylor 2005: 414).

The order in which children, especially females, are born determines their chances of being forced into prostitution due to either moral obligations or economic reasons.

Limoncelli (2009) emphasized the gendered nature of prostitution by focusing on issues of power as an explanation for prostitution. She stated

> Understanding and analyzing trafficking and prostitution as gendered components of economic globalization is particularly important, because it illuminates a variety of processes that make different groups of women vulnerable: economic disparities between sending and receiving countries, conflict and militarization, structural adjustment policies, the worldwide growth of informal work; and the dependence of some governments on the remittances of women migrants (Limoncelli 2009:266).

The status of a woman can contribute to trafficking in multiple ways that are specific to local context. Discrimination against women from work that is formal and placing them in the informal economy contributes to them being unable to own property and others kinds of source of wealth, or marginalize them within families. In certain cases, these women are more vulnerable in a sense that exploitation can be agreed upon by the female's family as an economic strategy or because they see it as a better alternative than being exploited at home (Limoncelli 2009: 266).

Jeffreys (2009) disagrees with the position held by Limoncelli (2009) and others, saying that,

> Segrave, Musto and Limoncelli all argue strongly that a huge mistake has been made in focusing concern about trafficking, amongst feminists and by governments, on the problem of trafficking for prostitution. They consider that prostitution is ordinary work and should not be separated out from other forms of work into which men and women are trafficked. Thus trafficking in women should be renamed 'migration for labour.' Segrave argues that trafficking should be seen 'as a crime that may occur in any industry,' and that 'advocates and scholars' need to shift their critical gaze away from the traditional circular debates that remain largely tied to issues of sexualized forms of exploitation.' The main problem with this argument is that it does not fit the facts of trafficking, which are that the vast majority of victims are women and the vast majority of these women are trafficked into prostitution. (Jeffreys 2009: 318).

Only females are prostituted due to the familial obligation and their value within the family.

Prostitution may not be viewed as a form of slavery since it is voluntary but sex-trafficking itself is a form of slavery. Jeffreys (2009:319) continues to state that

> In the case of some trafficked women, those who are kidnapped, tricked, deceived or clearly forced, this is the condition in which they find themselves. The girls who are auctioned on the concourse at UK airports fit that [definition] (Weaver 2007). They are owned and controlled. Other trafficked women are aware that the recruiters who enlist them are going to place them in prostitution, but have no idea of the degree of force and control that will be exercised over them at their destination. But what unites both groups is that they will be in debt bondage. Debt bondage is the sine qua non of trafficking, because it creates the profits of the practice. Debt bondage is defined as a contemporary form of slavery in the Supplementary convention which 'acts to ban debt bondage serfdom, servile marriage, child servitude' (Jeffreys 2009:319).

Prostitution may be viewed as a form of sex work that is a choice, but when it is sex trafficking, it then can be a form of modern sex slavery.

Although seemingly at odds with prostitution, dominant religions in some societies can have an influence on women being prostitutes. Religion in some countries emphasizes personal responsibility, especially for females. Theravada Buddhism. The dominant religion in Thailand, "teaches that a good deed for one's mother is equivalent in merit to a good deed for ten mothers" (Taylor 416).

Meucke (1992) provides a cultural interpretation of female prostitution in contemporary lowland Buddhist Thai society. Meucke's (1992) major point is that historically, the study of prostitution has not focused on the socio-cultural aspects of prostitution. Meucke (1992) does this by focusing on the

> Heterosexual transmission of AIDS through prostitution. Data were collected through case studies, participant-observation, and review of Thai language media and texts in order to examine this issue. Findings showed that in the past decade or so, the simultaneous rapid growth of prostitution as a lucrative sex industry and of the Thai economy as an emerging newly industrialized country have, paradoxically, enabled female prostitutes to preserve the basic institutions of society. Prostitution, although illegal, has flourished at least in part because it enables women, through, remittances, home and merit-marking activities to fulfill traditional cultural functions of daughters, conserving the institutions of family and village-level Buddhism, as well as of government (Muecke 1992:891).

Muecke's study concluded that while in Thai society where gender difference is normal, one thing is for sure and that is children are socialized to understand that real men need sex and good girls control their sexuality so as not to overcome men with their appeal.

Prostitution is also viewed in a positive light by parents because they can monitor their daughters' sexual activity (Muecke 1992: 898).

Sons are often not expected to be in the sex industry as compared to daughters because their familial obligation to their parents end once they move in with their wife's family. The most parents will expect from their sons is for them to become a monk for a period of time since their mothers cannot because of their sex (Taylor 2009:417). After this, they then are more obligated to their in-law's family. They have less of a moral obligation to provide economically for their birth family as compared to their daughters'.

Marriage, Family, & Norms

Researchers have also focused on the stigma attached to prostitution and the ability of the prostitute to take on normative roles of wife and mother. Peracca (1998: 255) explored the common attitudes people have towards female sex works in Thailand by examining the general public's perception of the prostitute's ability to marry based on a focus group data. The findings were that the social stigma towards females who once were in the commercial sex industry is mild. To an extent, with the lack of social stigma is what contributes to the spreading of prostitution recruitment and its acceptance in the society (Peracca 1998: 255-265).

Peracca (1998) wrote that if a female is a prostitute with the motive to purely help others people than her merit will cancel out the merit she posses for prostituting herself because in Theravada Buddhism, prostitution itself is unacceptable (Peracca 1998:264).

Ariyabuddhuphongs and Kampama (2008,) in a study focusing on women, focused on female sex workers (FSW) and female office workers (FOW) and their intent to marry outside their race. They "hypothesized that Thai female sex workers intend to marry inter-racially because of their dependence security, esteem and belonging needs satisfaction. One hundred and fifty FSW from bars and a control group of 150 female office workers in Bangkok participated in the study" (Ariyabuddhuphongs and Kampama, 2008:282). The authors concluded that FOW did not want to marry outside their race as compared to FSW because FSW still needed to continue to support their families even after marriage. They can marry someone who is in their race and stop working in the sex industry but doing so would that mean they will lose the kind of income they once had and no longer be able to support their families. To marry someone who is German, more preferably than any other race, can lead to greater income stability and social advancement for themselves and their families (292). Germans were more preferred over others because they believe German can offer more financial stability support for them. It is not unusual for FSW to put financial stability as their primary interest when it comes to what they most desire in a partner. Prostitution is not what they prefer but it is the best source of income for themselves and especially for their families. So despite negative opinions and social stigmas that exist within a given society, these women view prostitution as a job. They view their familial obligation to their parents as more important than their reputation to an extent.

Demographic Theories and Prostitution

There are many predictors that contribute to why certain countries have prostitution or sex trafficking; theories such as Demographic Transition Theory (D.T.T.) and Epidemiologic Transition Theory (E.T.T) apply to the patterns and trends that I have found in existing research findings on child prostitution (Weeks 2002).

Demographic Transition theory focuses on fertility and mortality to explain how countries become more developed. Factors that lead to development include higher female literacy since this can contribute to the status of women and their fertility rates in certain countries. Also, lower rates of fertility contribute to development because women are not spending their most productive years in child bearing, and also contribute to a higher life expectancy since the chance that a woman will die in childbirth is reduced. Based on D.T.T., I expect that countries with lower rates of fertility, higher female literacy rates will lead to lower rates of child prostitution. Lower fertility, higher literacy and longer life expectancy are indicators of a more developed country and an increased level of power for woman. I also expect that lower rates of HIV/AIDS will lead to lower levels of prostitution. E.T.T. posits that as societies become more developed the results should be lower levels of communicable diseases including HIV/AIDS. High rates of HIV/AIDS would result in higher levels of child prostitution since there is some evidence that men prefer having sex with a child since children have a lower likelihood of having the disease (Limoncelli 2009:264). Conversely, lower levels of HIV/AIDS would result in lower levels of child prostitution since the demand would decrease.

Methods

In this paper, I examine the relationship between poverty rate, female literacy rate, countries' PCGDP, religiosity, and child prostitution. The focus of the study is how these variables affect rates of child prostitution in twelve countries. These countries were selected from an article from Taylor (2005). This research is exploratory in that very little accurate data on child prostitution is available. Also, while the predictor variables may be related to child prostitution, they are not necessarily causes of childhood prostitution.

The data gathering technique used in this research is analysis of existing statistics, a type of unobtrusive measure (Babbie 2010). Although there are data for each of the variables examined in this research, there are also validity issues. The data may not be an accurate measure of the variables and this is seen in the measurement of the dependent variable, rates of childhood prostitution. The unit of analysis for this research is the country.

Independent Variables

All of the independent variables were gathered from the Central Intelligence Agency (CIA 2010). The CIA's definition of *life expectancy* is, "the average number of years to be lived by a group of people born in the same year, if mortality at each age

remains constant in the future. The entry includes *total population* as well as the *male* and *female* components. Life expectancy at birth is also a measure of overall quality of life in a country and summarizes the mortality at all ages. It can also be thought of as indicating the potential return on investment in human capital and is necessary for the calculation of various actuarial measures" (CIA 2010).

The CIA's definition of *literacy* is broad: "Unless otherwise specified, all rates are based on the most common definition - the ability to read and write at a specified age. Information on literacy, while not a perfect measure of educational results, is probably the most easily available and valid for international comparisons. Low levels of literacy, and education in general, can impede the economic development of a country in the current rapidly changing, technology-driven world" (CIA 2010).

Total Fertility Rate (TFR) is the entry that gives a figure for the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given fertility rate at each age. This indicator shows the potential for population change in the country. A rate of two children per woman is considered the replacement rate for a population, resulting in relative stability in terms of total numbers. Rates above two children indicate populations growing in size and whose median age is declining. Higher rates may also indicate difficulties for families, in some situations, to feed and educate their children and for women to enter the labor force. Rates below two children indicate populations decreasing in size and growing older (CIA 2010).

People living with HIV/AIDS is measured as an estimate of all people (adults and children) alive at year-end with HIV infection, whether or not they have developed symptoms of AIDS (CIA 2010).

Gross domestic product (per capita) is the purchasing power parity basis divided by population as of 1 July for the same year (CIA 2010).

Dependent Variable

The dependent variable is childhood prostitution; numbers were taken from an article by Willis and Levy's (2002) called "*Child prostitution: global health burden, research needs, and interventions."* The authors of this article got their data from the End Child Prostitution Child Pornography and Trafficking of children for Sexual Purposes (ECPAT) website. ECPAT is a non-government umbrella organization that is working to eliminate exploitation of children. The data are estimates of numbers of children exploited through prostitution. ECPAT (2010) defines "child prostitution as…the use of sexual activities for remuneration or any other form of consideration." The data are gathered with the assistance of the country and local agencies that work with prostitutes. In order to convert the numbers into child prostitution rates, estimates were taken, dividing the child prostitution number by the population size of a country and then

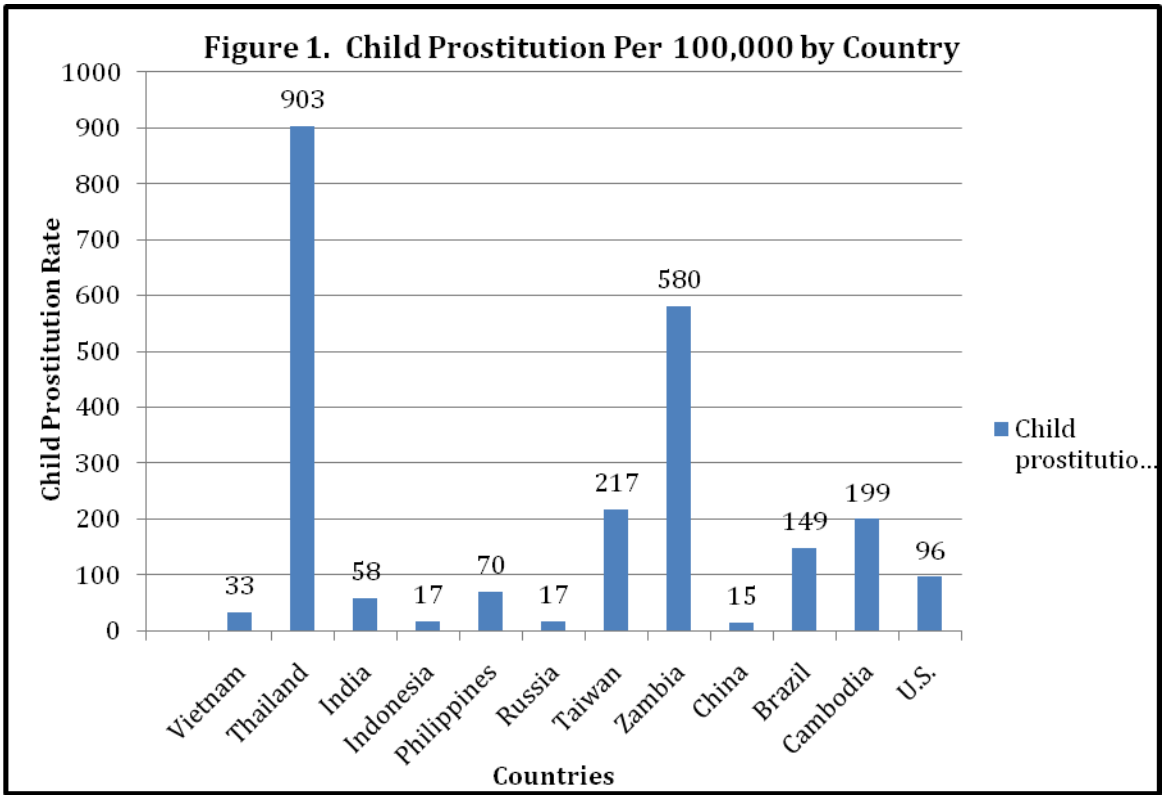
multiplying it by 100,000.

Analysis Method

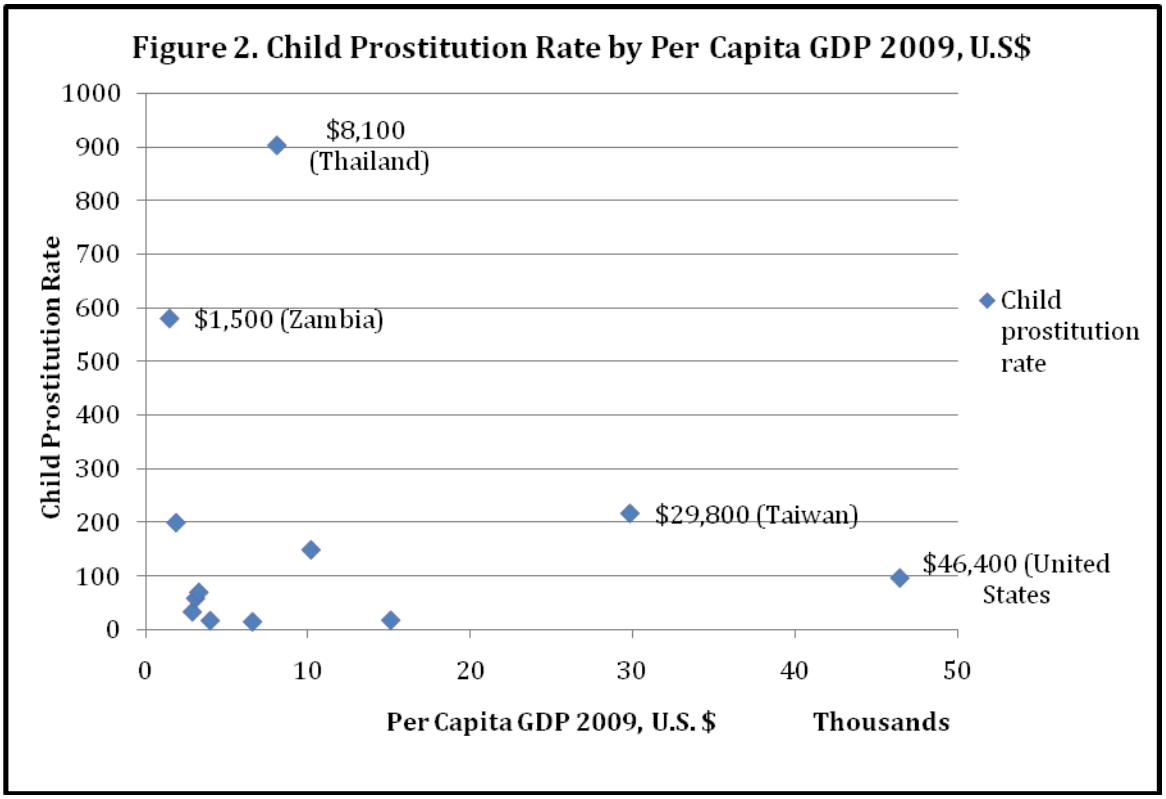
All of the data for this analysis were entered into an Excel program. In order to examine the relationship between the independent variables and the child prostitution rate, scatter plots were drawn for each independent variable by country. Names of countries that are outliers are included in each figure.

Findings

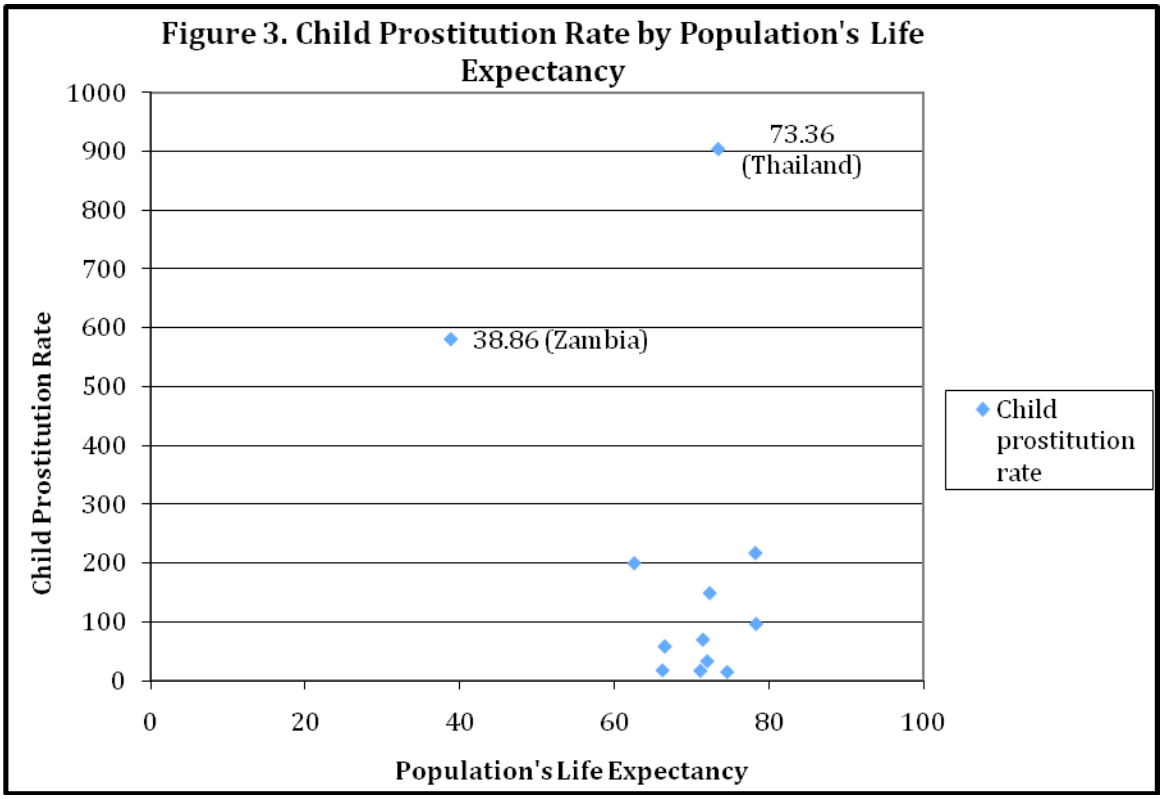
Figure 1 presents child prostitution rate by country. Thailand has the highest numbers of child prostitutes, 903 for every 100,000 people. Coming in second is Zambia with 580 child prostitutes per 100,000 people. Russia and Indonesia have the same numbers of child prostitutes for every 100,000 people.



The next figure, Figure 2, presents the PCGDP of the 12 countries' rate of child prostitution. This graph indicates that as a country's PCGDP increases, its numbers of child prostitutes decreases. Countries like Cambodia, Thailand and Zambia, whose GDP is less than $10,000, have the most child prostitutes out of all the 12 countries. However, there are outliers in Figure 2, including the United States, which who has the highest GDP of $46,400 and comparably high rates of child prostitution. Taiwan has the second highest PCGDP but also has more child prostitutes than the ten countries with lower PCGDP's.



The pattern presented in Figure 3 shows that with the increase of life expectancy for each country's population, the number of child prostitutes decreases. There are exceptions such as Zambia whose population has a life expectancy of 38.86, which is the lowest out of the 12 countries in this study. Zambia also has the second highest rate of child prostitutes. Thailand is another outlier with a population's life expectancy of 73 years, but it has 903 child prostitutes for every 100,000 people in its population.



The next two Figures, 4 and 5, show the same pattern as identified in Figure 3. Zambia has the lowest life expectancy for both females and males, but has the second highest rate of child prostitutes. The second outlier is Thailand, with a life expectancy of higher than 70 years, but also with the highest child prostitution rate. Overall, countries that have longer life expectancies have lower levels of child prostitution, although the relationship is weak.

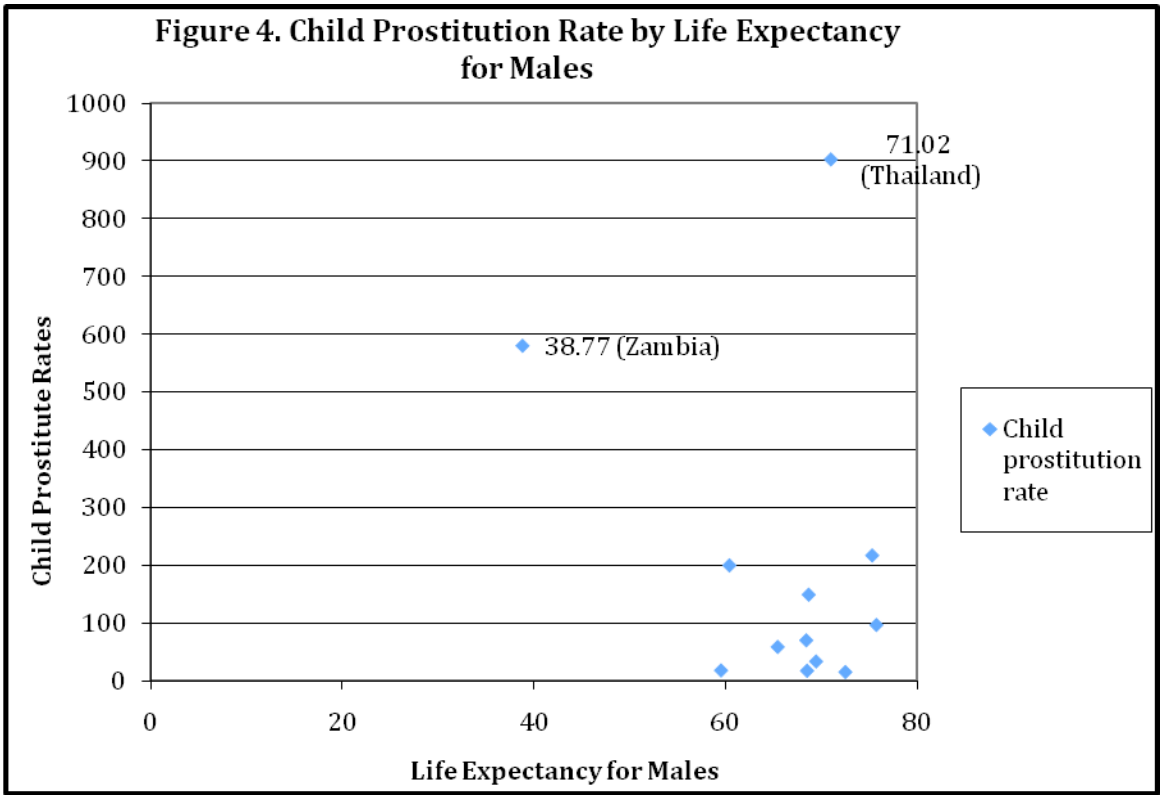


Figure 4. Child Prostitution Rate by Life Expectancy for Males
Child Prostitute Rates
1000
900
800
700
600
500
400
300
200
100
0
0
20
40
60
80
Life Expectancy for Males
71.02 (Thailand)
38.77 (Zambia)
Child prostitution rate

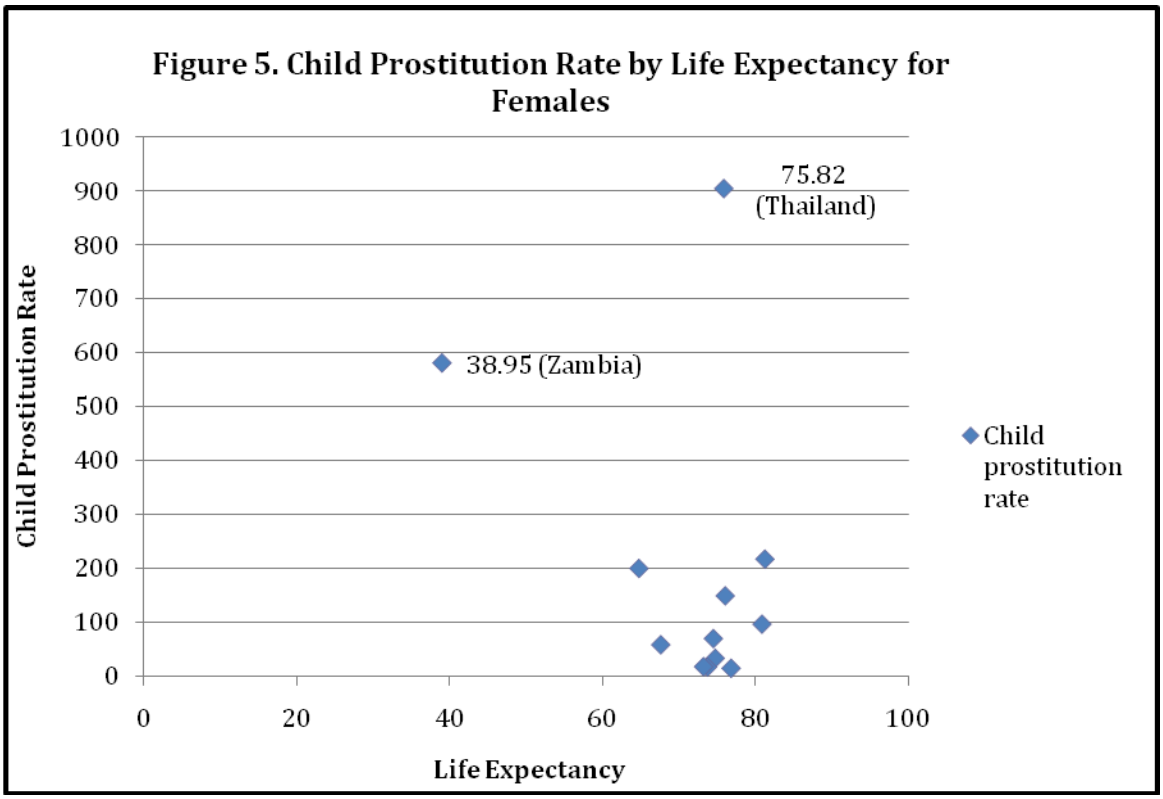
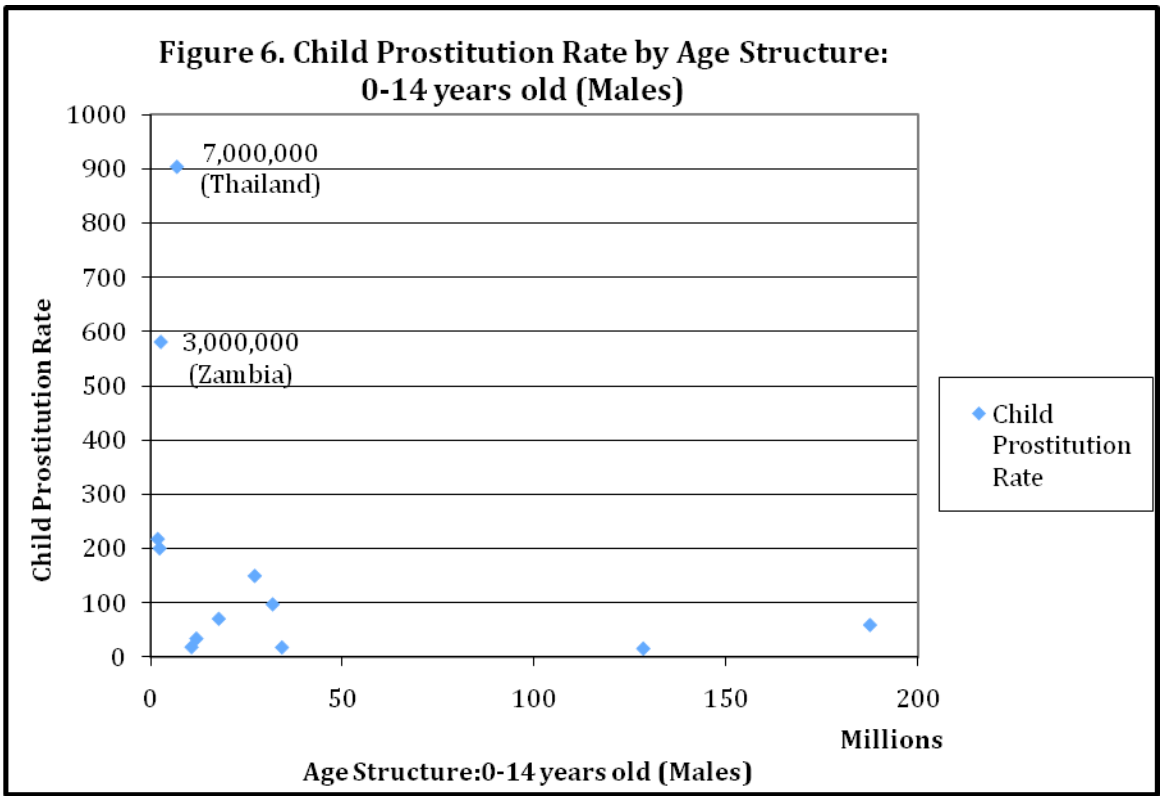
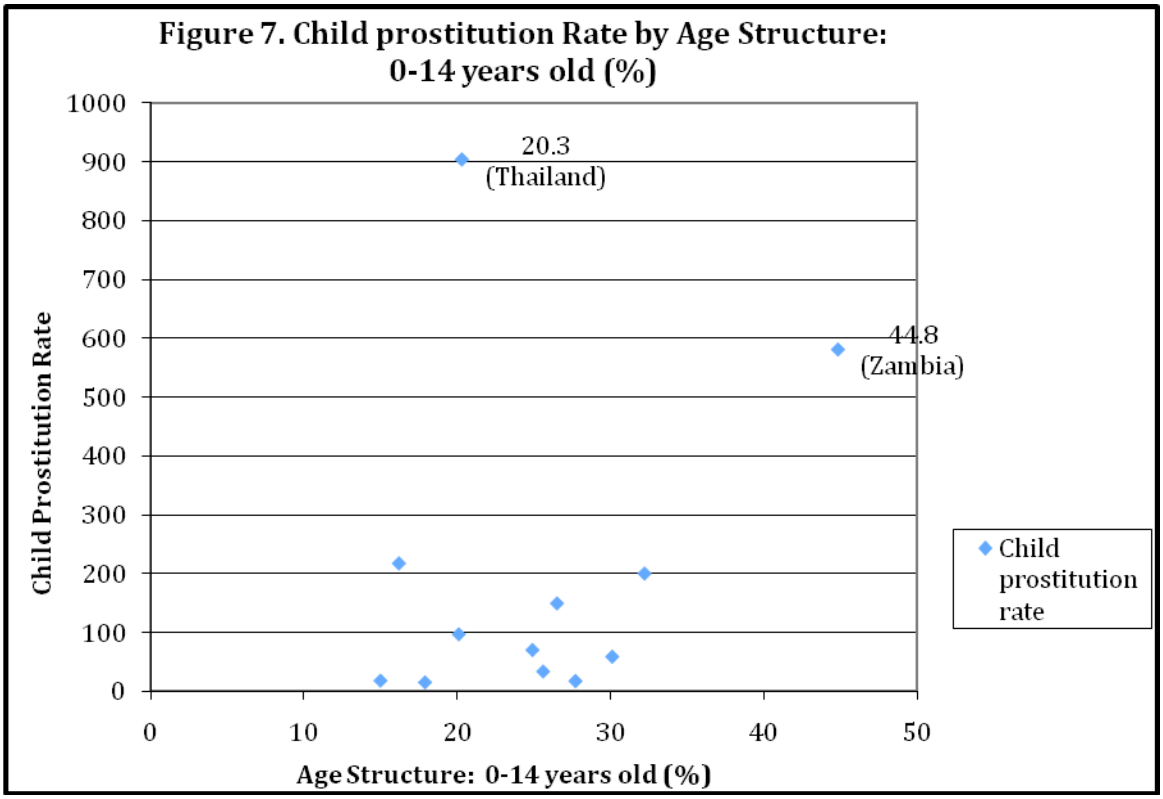


Figure 5. Child Prostitution Rate by Life Expectancy for Females
Child Prostitution Rate
1000
900
800
700
600
500
400
300
200
100
0
0
20
40
60
80
100
Life Expectancy
75.82 (Thailand)
38.95 (Zambia)
Child prostitution rate

Findings in Figures 6 and 7 demonstrate that most of the countries have 15-30% of females between the ages 0-14. Zambia has the highest percentage of females and Thailand has between 10-30% percent of females (0-14 years old); they still have the highest rates of child prostitutes. Overall, the relationship between percentage of females and child prostitution is unclear.





Figures 8 through 11 examine the relationship between literacy rates and child prostitution rates. As literacy rates for males and females from all ages increase, there is a decrease in child prostitution rates in the countries. However, Zambia and Thailand continue to be outliers; with literacy rates of over 80%, both are still the top two countries with the highest child prostitution rates.

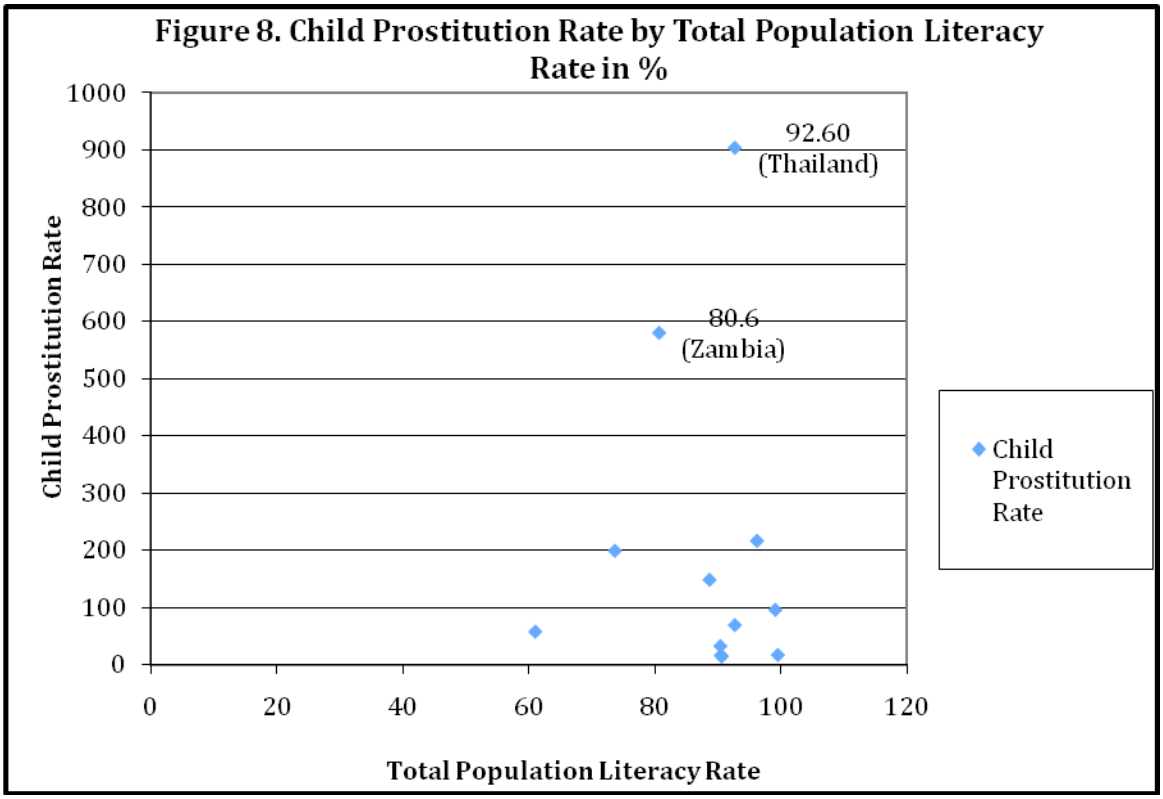


Figure 8. Child Prostitution Rate by Total Population Literacy Rate in %
Child Prostitution Rate
1000
900
800
700
600
500
400
300
200
100
0
92.60 (Thailand)
80.6 (Zambia)
0
20
40
60
80
100
120
Total Population Literacy Rate
Child Prostitution Rate

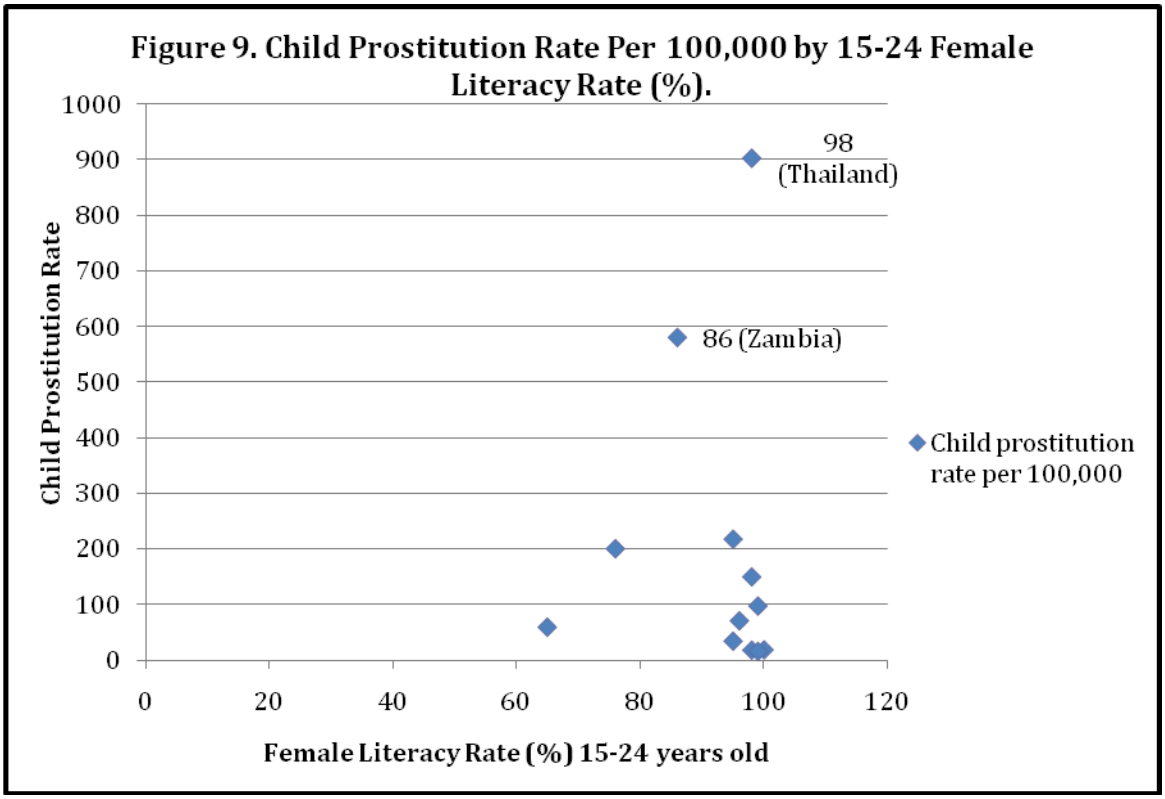


Figure 9. Child Prostitution Rate Per 100,000 by 15-24 Female Literacy Rate (%).
Child Prostitution Rate
1000
900
800
700
600
500
400
300
200
100
0
98 (Thailand)
86 (Zambia)
0
20
40
60
80
100
120
Female Literacy Rate (%) 15-24 years old
Child prostitution rate per 100,000

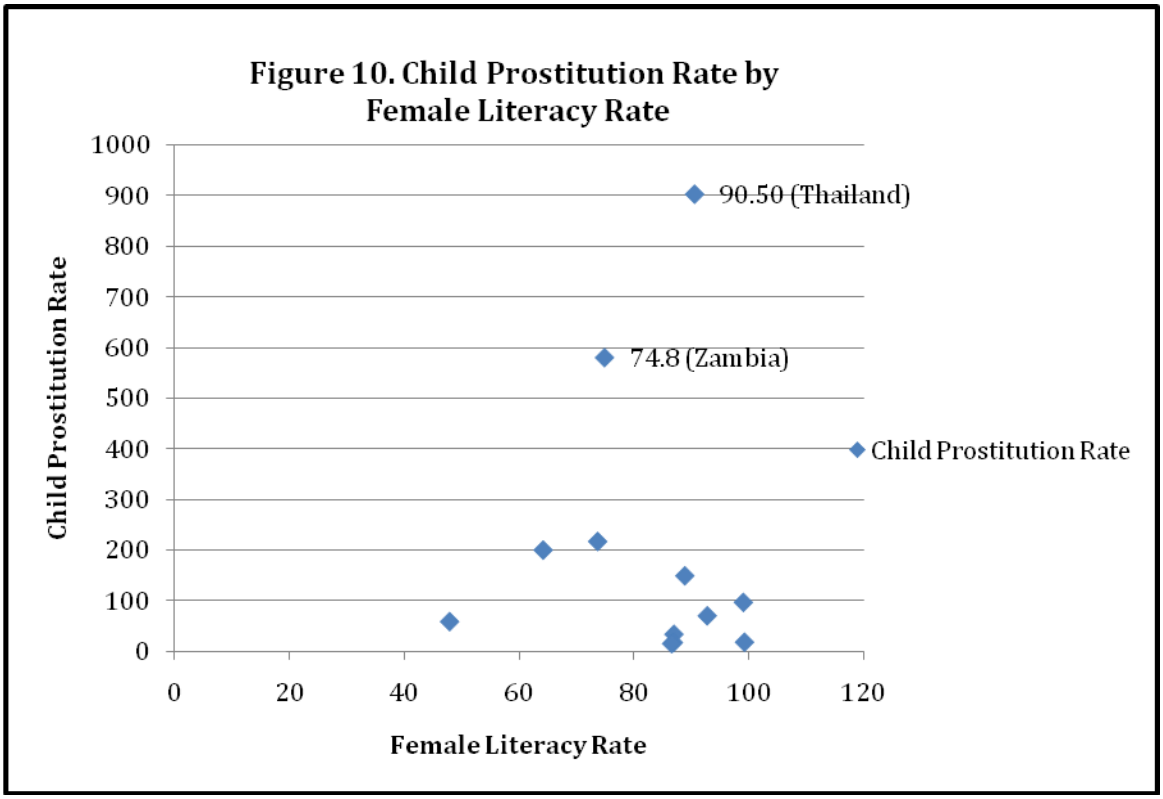


Figure 10. Child Prostitution Rate by Female Literacy Rate
Child Prostitution Rate
1000
900
800
700
600
500
400
300
200
100
0
0
20
40
60
80
100
120
Female Literacy Rate
90.50 (Thailand)
74.8 (Zambia)
Child Prostitution Rate

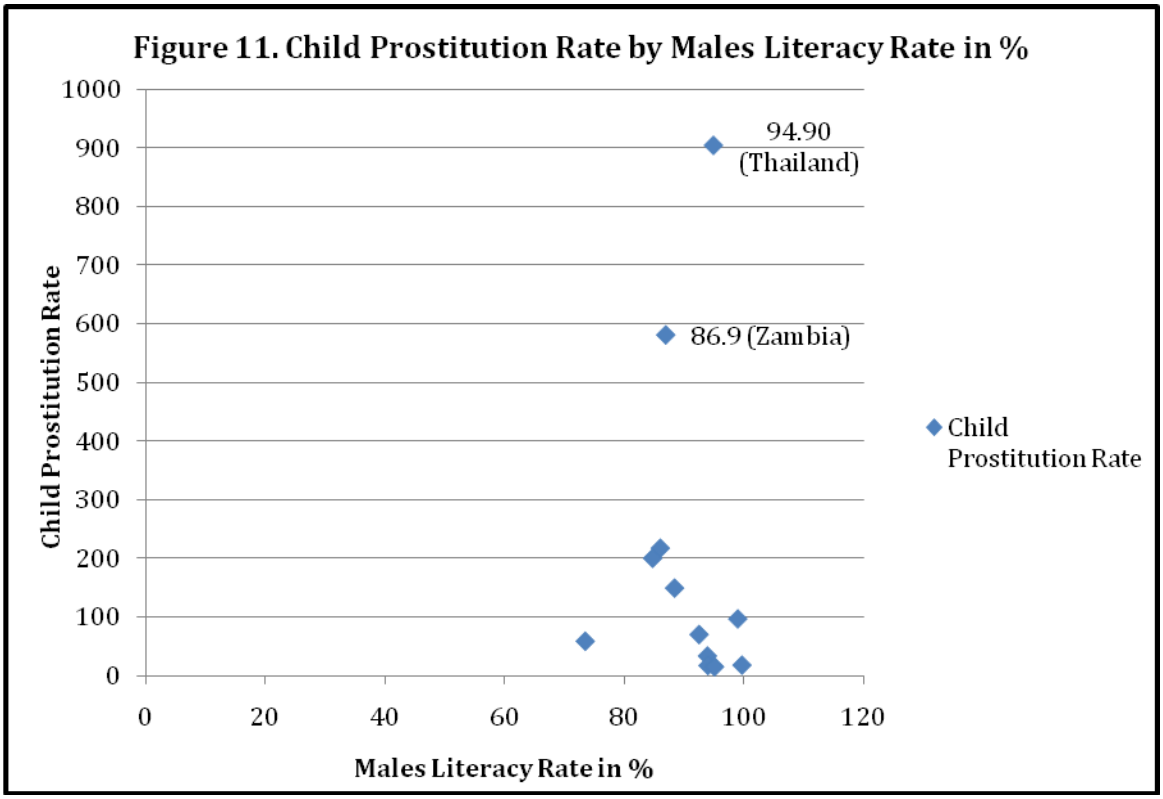
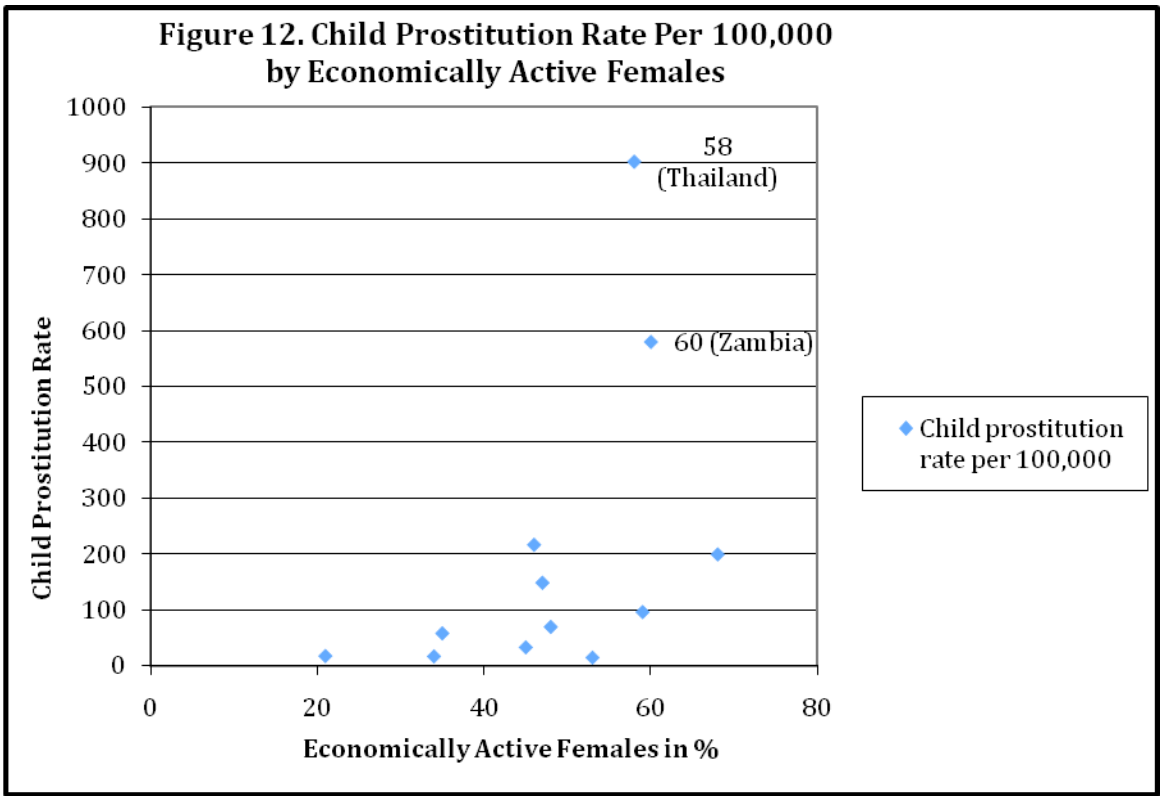
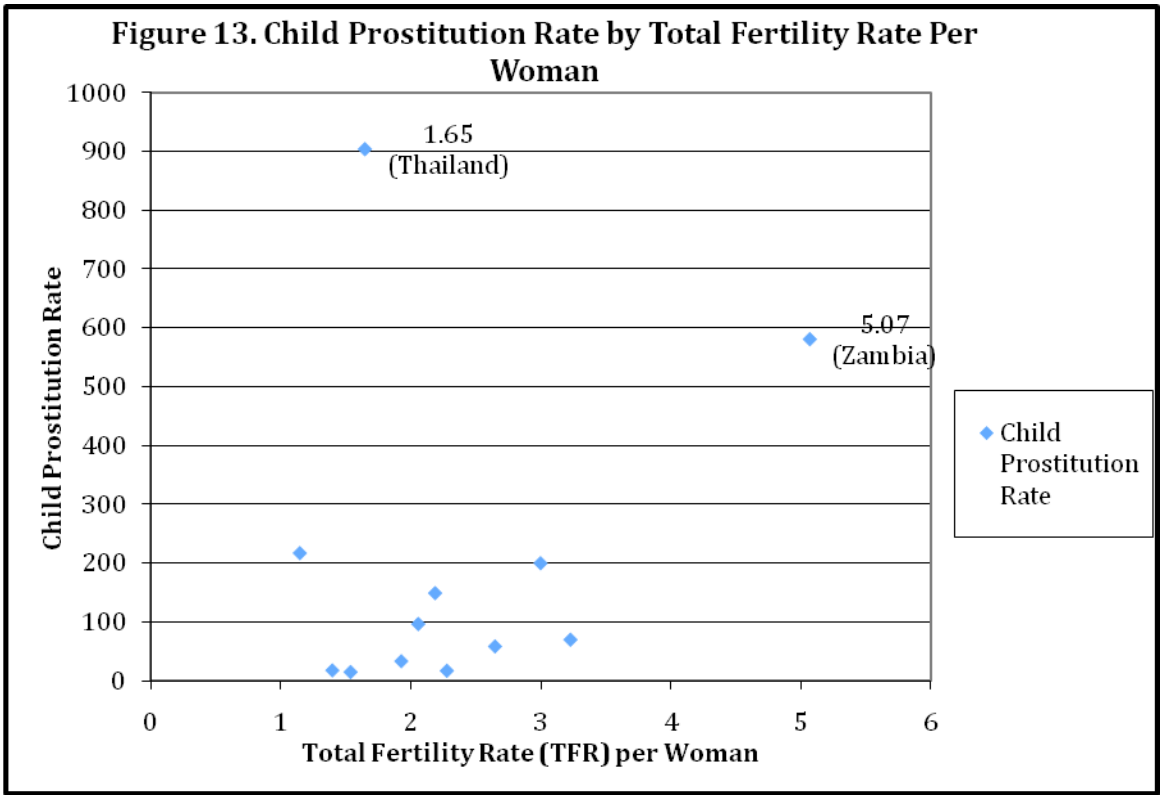


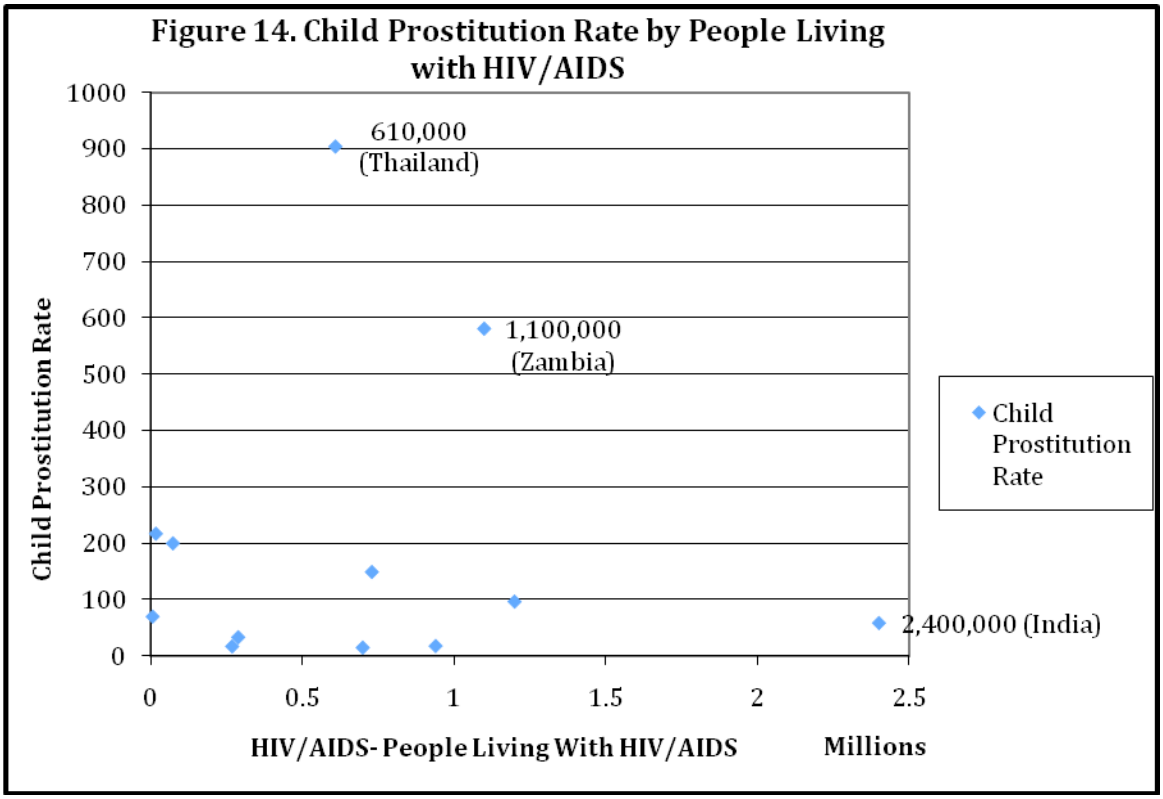
Figure 11. Child Prostitution Rate by Males Literacy Rate in %
Child Prostitution Rate
1000
900
800
700
600
500
400
300
200
100
0
0
20
40
60
80
100
120
Males Literacy Rate in %
94.90 (Thailand)
86.9 (Zambia)
Child Prostitution Rate



This scatter plot in Figure 13 presents the relationship between total fertility rate and child prostitution. Unlike the other graphs, where Thailand and Zambia are the most common outliers, this figure shows Zambia as an outlier. Zambia has a TFR of over 5 children per woman while the other 11 countries have between one to a little over three children per woman. Overall, the findings show that the higher the total fertility rate, the higher the rate of child prostitution.



This number of people living with HIV/AIDS in each of the twelve countries by the child prostitution rate is presented in Figure 14. Zambia and Thailand, with fairly high number of people living with this disease, also have the highest numbers of child prostitutes in their countries. India is the new outlier with over two million people living with HIV/AIDS, but with one of the lowest child prostitution rates out of the twelve countries. Overall, the figure shows that as HIV/AIDS decreases, child prostitution rates decrease, although the relationship is weak.



Discussion

In this research I identified a relationship between Per Capita Gross Domestic Product (PCGDP), life expectancy and literacy rate for females, and economically active females and rates of child prostitution. As these increase, there is a decrease in rates of child prostitution for most of the twelve countries included in this analysis. Also, as the total fertility rate and the number of people living with HIV/AIDS decreases, the child prostitution rate decreases.

These results are consistent with both research findings and summary statements made by other people studying child prostitution. Davidson (2001) and Limoncelli (2009) state that prostitution is not just a sexual activity; it is also an economic and income-producing activity. Countries that have lower levels of economically active females performing legal work tend to have higher rates of child prostitution.

Out of the twelve countries included in this study, Thailand and Zambia do not follow the pattern observed in the other countries. Additionally, the outliers do not fit the pattern of findings when examining people who are living with the degenerative disease, HIV/AIDS, even though their total fertility rate is lower than Thailand and Zambia.

Explanation for why the relationship between many of these independent variables and rates of child prostitution does not hold for Zambia include Zambia's status as a Sub-Saharan African country that, like many other countries in the region, suffers

from a poor economy and lack of access to technological advancements. Zambia's lack of modernization prevents the Zambian people from having the advantages of the other ten countries. Their high total fertility rate is influenced by their lack of medical technology, which prevents them from having a longer life expectancy and lowering their population growth rate. Families end up with more children to care for than families from countries with lower fertility rates and consequently may be more likely to prostitute a daughter. These factors contribute to Zambia being one of the two outliers throughout this research.

As for Thailand, their high child prostitution may be due to their religious beliefs. Theravada Buddhism is the main factor since it emphasizes familial obligations of the females to provide for their families, specifically the parents to no exceptions. Unlike many other cultures where males are the financial provider for the family, females tend to turn towards prostitution because it helps with providing for the family most easily since "most commercial sex work in Thailand does not typically involve streetwalking, beatings by pimps, or scuffling with deviant customers, nor does most involve trafficking" (Taylor 2005:416). Even though prostitution is wrong in Theravada Buddhism, the emphasis on females supporting their families is greater. Prostitution itself is wrong, but it is allowed if it is done in order to help others. Religion is the main reason why Thailand has the highest child prostitution rate (Taylor 2005).

One pattern that was present in this research was that countries with higher rates of female literacy and lower fertility rates had lower levels of child prostitution. Women and girls who are educated and are not spending their childbearing years having many children may be less likely to be exploited by others. The pattern of high female literacy and lower fertility rates resulting in lower levels of child prostitution supports the Demographic Transition Theory. These countries have transitioned from lower levels of development and modernization to a more developed position.

I also found support for the Epidemiological Transition Theory. Countries with higher levels of HIV/AIDS infection rates tended to have higher levels of child prostitution. There is research that shows that men want to have sex with children because they think it reduces the chances of their getting AIDS since children have fewer sex partners than adult females (Limoncelli 2009:264).

Limoncelli (2009) wrote that,

> In prostitution, this means that men negotiate to pay as little as possible and that they can and do negotiate terms that endanger the sex worker or foster exploitation---such as paying extra to forgo condoms or purchasing what they understand to be a young girl in order to reduce their risk of sexually-transmitted diseases in unprotected sexual encounters. Many clients want young women, preferably under 25, and/or migrant women precisely because they see them as cheap, malleable, and easier to control, i.e., a good return for the money (Limoncelli 2009:264).

Conclusion

To do research on child prostitution is difficult, because it is nearly impossible to find exact numbers of how many child prostitutes are in each country; I used the data from an article by Willis and Levy's (2002) called "*Child prostitution: global health burden, research needs, and interventions,"* although they are not perfectly valid numbers. There was no explanation about how these data were gathered from the End Child Prostitution Child Pornography and Trafficking of Child for Sexual Purposes (ECPAT). The organization does indicate on their website that their data came from the countries and from local organizations that work with child prostitutes. Since there is no one measure of child prostitution used by all countries, there are likely to be validity issues with these data.

It is important to do more research on this issue because it will result in a greater understanding of exactly why and how children and women, even boys and men, become prostitutes. Although prostitution may not be totally eliminated, having more knowledge will help us prevent the numbers of child prostitution from increasing. Also, it may help us to provide the appropriate aids and support to those who are or once were prostitutes. Finally, systematic research in the area of child prostitution might result in policies and laws being developed. Of the twelve countries in this analysis, only eight had specific laws focusing on treatment of prostitutes and their clients (INTERPOL 2010).

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Portrayal of African Americans in the Media: An Examination of Law and Order

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Abstract
Television media is one of the most powerful tools used for entertainment and information in this generation. Hence, it should feature accurate portrayals of racial groups in order to erase the hierarchy that exists between people in today's society. This study will examine the portrayal of African Americans in the media over a twenty year time span within the television crime drama *Law and Order*, and will be used to determine whether the media exaggerates its portrayal of African Americans in the media.

Introduction

Stereotypes are preconceived assumptions based upon the characteristics and behaviors of all members of a particular group. These assumptions are often commonly held beliefs that are thought to be true by many people in a population (Power, Murphy, Coover, 1996). Stereotypes have extended into the root of society mainly through media outlets such as the television. Many Americans rely on television as a source of information and entertainment; thus, it is a dominant source in today's culture. According to the 2009 U.S. Bureau of Labor Statistics- American Time Use Survey (ATUS), which measures how the average American spends their time, discovered that Americans 15 years-old and above spent 2.8 hours per day watching television. In 2009, A.C. Nielsen Company reported that 99% of all households owned at least 1 television and 66% of U.S. homes owned 3 or more televisions. Data also revealed that 79% of Americans believed that television violence aided to increase societal violence. For that matter, the content that is projected through the medium of television is crucial, due to the fact that the television is the central focus of many households.

The portrayal of stereotypes concerning African Americans in the media is most often tied to the cultivation theory developed by George Gerbner and Larry Gross (1976). According to the theory, individuals who frequently watch high contents of television will begin to believe that they are living in a world similar to what is portrayed on the screen (Fujioka, 1999; Gerbner & Gross, 1976). Therefore, a person who watches numerous shows will believe that he/she is living in a world more dangerous than it

actually is, large in part because their sense of crime becomes heightened (Gerbner & Gross, 1976). Nonetheless, the media portrays African Americans acting out and behaving in unflattering ways; thus, these stereotypes can become even more believable and allow members of other racial groups to see these characteristics as definite actions of African American people (Berg, 1990; Tamborini, Mastro, Chory-Assad, Huang, 2000).

Background

During the 1940s and 1950s, African Americans had few roles, but when they were offered parts it consisted of stereotypic portrayals of characters being lazy, simple, or holding domestic servant roles such as television shows *Beulah* and *Amos 'n Andy* depicted (Tamborini, Mastro, Chory-Assad, Huang, 2000). By 1955, African Americans were portrayed in roles where nearly 49% of the characters were seen as not having a high school diploma, and 47% were viewed as having low economic status (Tamborini, Mastro, Chory-Assad, Huang, 2000). Even in the 1960s, African Americans still received stereotypical roles that were created in order to amuse White viewers (Atkin, 1992; Cummings, 1988).

As the Civil Rights Movement went underway, it became clear that minority characters were not being represented fairly on television (Rada, 2001; U.S. Commission on Civil Rights, 1977). On further examination, alleged discriminatory hiring practices were taking place at many television networks, explaining why African Americans were not being shown. Findings later revealed that the portrayal of minorities on television was "infrequent and stereotypical" (Mastro, 2000). It was then noted that those portrayals played a large role in shaping the negative perception Whites acquired for minorities (U.S. Commission on Civil Rights, 1977). Fortunately enough, after the civil rights movement, African Americans began getting more roles that didn't always depict them negatively as television shows *The Mod Squad* and *Julia* illustrated (Tamborini, Mastro, Chory-Assad, Huang, 2000). However, although African Americans were receiving more notable roles (Gunter, 1998), findings suggest that stereotypical portrayals were still featured (Tamborini, Mastro, Chory-Assad, and Huang 2000). Nonetheless, African Americans on television became more noticeable in later years.

In 1971, African Americans represented 6% of characters in television comedies and dramas and made up 11% of the actual population, which was a drastic disparity in relation to the 89% that Whites accounted for on television (Tamborini, Mastro, Chory-Assad, Huang, 2000). By 1980, African Americans depicted 8% of characters and represented 12% of the population. Nevertheless, change certainly came by 1993 as African American characters represented 11% of characters on television and made up 12% of the population. Researchers noted that African American actors represented 13% of law enforcement/court officials, and 11% of all criminals (Tamborini, Mastro, Chory-Assad, and Huang, 2000). Hence, African Americans had crossed a milestone (Greenberg and Brand, 1994).

Crime Drama: Law and Order

Television crime dramas are a blend between both reality and fictional television. Hence, crime dramas are usually similar to real life occurrences and often rely on real life situations for its plot. Nonetheless, crime dramas often depict most African American and

Hispanic characters as criminals or victims of police brutality and White characters as police officials (Oliver, 1996). Therefore, it is no wonder why these depictions of racial groups in television programs seem to strengthen negative perceptions of minorities through the eyes of its viewers.

Law and Order premiered on September 13, 1990 and its last episode aired on May 24, 2010 spanning its 20 year television series. The show will be used to analyze the change over time within the portrayal of African American characters in televised programming and whether stereotyping was still present on the show. *Law and Order* was used for analysis not only because of its long span on prime time television, but because of its strong viewership record. The earliest record of the show is from 1993-1994; during those years the show averaged 9.6 million viewers per episode. Peak viewership occurred in 2001-2002 with an average of 18.7 million viewers per episode. In the shows final year 2009-2010, an average of 7.2 million viewers tuned in each episode. Hence, television crime dramas continue to be one of the most watched and enjoyed genres on television.

Crime dramas also seem to pull a larger fan base than that of traditional television news programming (TV Dimensions, 2003).Consequently, research has shown that concerns over the portrayals of violence in crime dramas have continued to spark the interests of authors since the early 1970s (Gerbner & Gross, 1976; Gerbner, Gross, Jackson-Beeck, Jeffries-Fox & Signorielli, 1978; Gerbner, Gross, Morgan & Signorelli, 1980). However, although many researchers use the cultivation theory to explain the problems within television programming, more research needs to be done, specifically on crime dramas to examine the nature of violence, as well as stereotypical racial portrayals, and the repercussions that they can have on its audiences (Holbrook & Hill, 2005). Therefore, based on findings of previous researchers, the specific area of this research is to examine the portrayal of African Americans on the crime drama *Law and Order* and to determine if there has been any change over the last two decades regarding the portrayal of African Americans on television, and perhaps if there is change, whether it will help to lessen or perpetuate racial stereotypes in the media.

Methods

In order to study possible change over time within the media, a study was constructed over a nine-week period to analyze the portrayal of African Americans in episodes of the television crime drama *Law and Order*. The sample of study included seasons 1 and 20 to examine the variance amongst the first and last seasons of the program. Episodes were chosen through random selection, and were conducted using a random number table. The entire sample included 10 episodes from each season, with a combined 20 episodes to be analyzed. Each episode was 45 minutes long, totaling 15 hours of viewing.

The units of analysis in the study were: (1) 20 random selected episodes of season 1 and 20, (2) all characters, taking a specific look at non- reoccurring or regular characters that portray criminal involvement, (3) race of characters and the role they play, as well as (4) specific stereotypical portrayals of African American characters.
A code sheet was developed to examine selected variables to be measured. Variables included mutually-exclusive and non-exclusive variables. Variables consisted of the following: race (physical heritable trait that determines the color of a person's skin), role

(specific characterization interpreted by actor), appearance (visual look of character), behavior (actions and response to actions from other characters), language/speech (vocal communication of character), verbal aggression (vocal speech used to cause harm or pain to another character), physical aggression (use of body to cause harm or pain to another character), crime committed (violent act carried out to cause harm or pain), domestic crime (violent act carried out to cause harm or pain to a family member), indicator of guilt (any presence or sign that character is involved or connected to offense), verdict (final decision of character's guilt or innocence), repeat character (the amount of time character appears), and role importance (significance or influence of character).

Race was coded as three variables: Black (African American descent or character has black skin), White (Caucasian, of European descent or character has white skin), other (applies to any character that is not Black or White). Note that this study did not pay specific attention to the "other" category. However, it was still coded and used for analysis in the study.

Role was coded as: suspect (character suspected of offense), police (character that maintains order, character is a state/federal law enforcement agent), attorney (character is a legal defense or prosecuting agent), judge (character is an appointed public officer that decides upon trail/case), witness (character gives testimony or evidence of crime), victim (character faces harm or injury), other (any character not previously noted).

Appearance was coded as: poorly dressed (character is not dressed in appropriate clothing for role, occupation, or occasion that they are seen in), well groomed (character appears to maintain good hygiene; character is neat, shaven, or clean cut), not well groomed (character does not appear to maintain good hygiene; character is not neat, shaven, or clean cut), baggy/sagging clothes (character's clothes are loose and does not fit to body), dirty clothes (character's clothes appear unwashed, is stained, or has marks), ripped clothes (character's clothes are tattered).

Behavior was coded as: inappropriate in business settings (character is not respectful in formal settings; character maintains opposite behavior of his or her environment), behaves obnoxiously (character draws attention to his or herself by behaving in an annoying, offensive, or stubborn manner), is angry and or demanding (character is resentful or spiteful; character is authoritative and requires urgency; character appears in an unpleasant mood), is controlling (character is dominant in observed situation and does not care about the feelings and needs of other characters), is emotional (character appears to be crying, or expressing any form of deep emotion [e.g., character has a tantrum]), is disrespectful to others (character is impolite; character mistreats others and does not seem to care about their feelings).

Speech was coded as: speaks clearly (character is easy to understand and speaks in clear American English), hard to understand (character is not easy to understand and does not speak in clear American English), speaks in African American dialect (character speaks in Black English vernacular (BEV); character speaks in African American broken English, often called "Ebonics"), speaks with an accent (character speaks in an accent from a different country of origin; character pronounces and/or speaks with unfamiliar emphasis on syllables), speaks loudly (character appears to naturally speak louder than others), speaks shyly (character is timid when speaking; character's voice is low and quiet), speaks in a joking way (character does not appear serious when he or she speaks;

character continues to joke during a serious situation), has a speech impediment (character suffers from a speech defect; character is hindered from speaking correctly).

Verbal Aggression was coded as: yells often (character is often seen yelling or screaming; character rarely speaks in a decent tone; character's voice is above others), speaks sarcastically (character mocks others when speaking; character is not sincere), uses derogatory language (character insults others; character curses), belittles others when talking (character hurts others when he or she is talking; character is negative to others), often interrupts others when talking (character talks over others; character does not wait until others are finished talking to begin).

Physical Aggression was coded as: reacts to aggression (character quickly reacts to aggression in a negative manner), carries weapon (character is seen with a weapon; character threatens others with weapon; character uses weapon against others), is seen fighting (character is seen fighting, punching, kicking or applying any form of bodily force upon others), willingly attacks others (character gets a rush out of attacking others; character's temper is easily provoked and they seek to hurt or harm others).

Crime Committed was coded as: Arson (character commits crime involving fire; character burns building or property), assault (character causes bodily harm to others), drug (character is seen using, selling, buying, or in possession of drugs), murder (character kills another, with or without intent to kill), rape (character sexually abuses others), theft (character steals from others), other (any crime that is not previously noted).

Domestic Crime was coded as: (Yes/No) as well as *Indicator of Guilt* which was coded as: (Yes/No). If the character committed a domestic crime it was coded as yes, if the character did not commit a domestic crime it was coded as no. If there was any indication of guilt the character would be coded as yes. If there was no indication of guilt the character would be coded as no.

Verdict was coded as: guilty (character is proven responsible for crime), not guilty (character is proven innocent for crime; character is not responsible for crime), or other (character is not proven guilty or innocent for crime). Note that if character is seen committing a crime they were coded as guilty. Also, if character is arrested, seen in jail or in custody they were coded as guilty. This also applied if viewer did not see a trial or a verdict of guilt at the end of the show.

Role Importance was coded as: major (character's role is essential in episode; the episode is structured around the character), or minor (character's role is not essential or structured around the character).

Repeat Character was coded as: (Yes/No) and was determined depending on how many times the character was seen throughout the 10 episodes for each season. Characters that were continually present in all episodes were coded as *Yes* for repeat characters. Characters that only appeared as guest stars or were featured in less than 2 episodes were coded as *No* for repeat character.

Season 1 episodes were viewed from a 6- disc DVD set and were analyzed on a computer monitor. Season 20 episodes were watched and examined on a computer monitor via an online website where the episodes were purchased. Each episode was analyzed and coded while being watched. Each character that appeared on the show was coded. Note that characters seen in the background were not coded. However, characters that did not have a speaking role but were clearly noticeable to the viewer and were significant to the episode were coded. Once all episodes were watched and coded, they

were watched a second time and codes were checked for accuracy. The total time for coding and watching all episodes more than once was approximately 50 hours, and 345 characters were coded.

In order to analyze the results of the study, variables coded in the episodes were entered into statistical analysis software (SPSS) for assessment. Character's *race* was always used as the independent variable (IV). All other variables to be measured were selected as the dependent variable (DV). The control variables were the seasons (season 1 and season 20) in order to illustrate change over time. To test the hypotheses, the independent variable (IV), and dependent variable (DV), descriptive statistics and cross tabulations were used to show relationships between the independent and dependent variables in season 1 and season 20.

Results

From the sample, 345 characters were examined. The focus of this study is on the difference between how Whites and African-Americans are portrayed. Although the "other" race was analyzed it was not a specific focus of the study and will not be fully discussed within the results. Findings from the study show that 71.3% of characters were White (n= 246), 20% of characters were African American (n= 69) and 8.7% of characters were depicted as other (n= 30).

Race

Results for season 1 show that 58.9% of characters were White (n= 145), 39.1% of characters were African American (n= 27) and 46.7% of characters were represented as other (n= 14). Results from season 20 found that 41.1% of characters were White (n=101), 60.9% of characters were African American (n=42) and 53.3% of characters were depicted as other (n= 16).

Role

As seen in Table 1, White actors are shown more often and receive more roles than their African American counterparts. Cross tabulations for season 1, revealed a statistically significant relationship between race and the character's role. Although that relationship refers only to the overall pattern of results, a few of the roles are obviously responsible for the statistical results. The table shows that 90.9% of police officers were depicted as White, whereas only 6.1% of police were represented as African American. This 6.1% is much smaller than the overall 14.6% of roles that were played by African Americans. Attention should also be paid to the role of attorney in season 1, as African Americans accounted for 27.8% of all the attorneys portrayed; a number much higher than their overall representation across all roles. The percentages of African Americans were higher in victim and "other" roles and lower on judge and witness roles than would be expected. In the suspect role the percentage of African Americans was very close to their overall representation across roles.

Table 1: Season 1 Role Portrayal by Race

		Character Race			
		White	Black	Other	Total
Character Role	Suspect	13	3	3	19
		68.4%	15.8%	15.8%	100.0%
	Police	30	2	1	33
		90.9%	6.1%	3.0%	100.0%
	Attorney	13	5	0	18
		72.2%	27.8%	.0%	100.0%
	Judge	11	1	0	12
		91.7%	8.3%	.0%	100.0%
	Witness	42	5	6	53
		79.2%	9.4%	11.3%	100.0%
	Victim	2	2	0	4
		50.0%	50.0%	.0%	100.0%
	Other	33	9	4	46
		71.7%	19.6%	8.7%	100.0%
Total		144	27	14	185
		77.8%	14.6%	7.6%	100.0%

For season 20, characters portraying the role as police revealed a substantial change in its portrayal. As shown in Table 1 and 2, from season 1 to season 20 African American characters depicting police officers increased from 6.1% of all police officers to 50% of all police officers by season 20, even higher than the percentage of Whites. This is a dramatic change across the 20 years. However the percentage of attorneys who were African American decreased from season 1 to season 20. The percent of African American suspects are also lower than expected.

Table 2: Season 20 Role Portrayal by Race

		Race Character Race			
		White	Black	Other	Total
Character Role	Suspect	13	4	4	21
		61.9%	19.0%	19.0%	100.0%
	Police	15	17	2	34
		44.1%	50.0%	5.9%	100.0%
	Attorney	10	1	0	11
		90.9%	9.1%	.0%	100.0%
	Judge	2	0	0	2
		100.0%	.0%	.0%	100.0%

	Witness	21	6	1	28
		75.0%	21.4%	3.6%	100.0%
	Victim	7	1	2	10
		70.0%	10.0%	20.0%	100.0%
	Other	33	13	7	53
		62.3%	24.5%	13.2%	100.0%
Total		101	42	16	159
		63.5%	26.4%	10.1%	100.0%

Appearance

Results for season 1 depicted statistical significance based on the results of the Pearson Chi-Square tests. White characters were only represented 3.4% as appearing poorly, however African American characters were shown 37%, a number not representative to the total amount of characters in season 1, as shown in Table 3. Season 20 showed noticeably different results as White's are seen appearing poorly 13.9% and African Americans only 4.8%, a number much lower than the portrayal shown in season 1.

Table 3: Season 1 Poor Appearance

			Poor Appearance		
			.00	1.00	Total
Character Race	.00 White	Count	140	5	145
		% within Race Character Race	96.6%	3.4%	100.0%
	1.00 Black	Count	17	10	27
		% within Race Character Race	63.0%	37.0%	100.0%
	2.00 Other	Count	11	3	14
		% within Race Character Race	78.6%	21.4%	100.0%
Total		Count	168	18	186
		% within Race Character Race	90.3%	9.7%	100.0%

Largely, season 20 shows more of an actual representation of both characters based on the percent of characters in each race. Season 20, does not show African American characters as being severely poorly dressed but shows that it is only a small

percentage of the amount of characters. Thus, these results show that, in terms of appearance, the portrayal of African-Americans has improved considerably across 20 years.

Table 4: Season 20 Poor Appearance

			Poor Appearance		
			.00	1.00	Total
Character Race	.00 White	Count	87	14	101
		% within Race Character Race	86.1%	13.9%	100.0%
	1.00 Black	Count	40	2	42
		% within Race Character Race	95.2%	4.8%	100.0%
	2.00 Other	Count	14	2	16
		% within Race Character Race	87.5%	12.5%	100.0%
Total		Count	141	18	159
		% within Race Character Race	88.7%	11.3%	100.0%

Speech

Season 1 data revealed significant results in speech differences between both races. African American characters were viewed 66.7% of the time speaking in Black English vernacular (BEV), in an accent, or broken English, whereas only 25.5% of Whites were portrayed speaking unclearly, as shown in Table 5. Based on the Pearson-Chi square, the results were proven to be significant.

Table 5: Season 1 Speech Unclear

			Speech Unclear		
			.00	1.00	Total
Character Race	.00 White	Count	108	37	145
		% within Race Character Race	74.5%	25.5%	100.0%
	1.00 Black	Count	9	18	27

		% within Race Character Race	33.3%	66.7%	100.0%
	2.00 Other	Count	8	6	14
		% within Race Character Race	57.1%	42.9%	100.0%
Total		Count	125	61	186
		% within Race Character Race	67.2%	32.8%	100.0%

Season 20 did not reveal any significant difference in speech, as shown in Table 6. However, it does depict that the portrayal of African Americans is more reflective of the population. Although in both seasons, African Americans were observed having more difficulty speaking than Whites, by season 20 the percentages for Whites and African-Americans were more similar.

Table 6: Season 20 Speech Unclear

			Speech Unclear		
			.00	1.00	Total
Character Race	.00 White	Count	88	13	101
		% within Race Character Race	87.1%	12.9%	100.0%
	1.00 Black	Count	30	12	42
		% within Race Character Race	71.4%	28.6%	100.0%
	2.00 Other	Count	12	4	16
		% within Race Character Race	75.0%	25.0%	100.0%
Total		Count	130	29	159
		% within Race Character Race	81.8%	18.2%	100.0%

Negative Behavior

Analysis of negative behavior for both seasons revealed that the numbers were very much alike and almost indistinguishable. From 345 characters in both seasons, 23.2% of White characters were shown behaving inappropriately and 26.7% of African Americans. Figures shown in Table 7 and 8 show that the difference between Whites and African Americans exhibiting negative behavior decreased between Season 1 and Season 20.

Table 7: Season 1 Negative Behavior

			Negative Behavior		
			.00	1.00	Total
Character Race	.00 White	Count	113	32	145
		% within Race Character Race	77.9%	22.1%	100.0%
	1.00 Black	Count	19	8	27
		% within Race Character Race	70.4%	29.6%	100.0%
	2.00 Other	Count	11	3	14
		% within Race Character Race	78.6%	21.4%	100.0%
Total		Count	143	43	186
		% within Race Character Race	76.9%	23.1%	100.0%

Table 8: Season 20 Negative Behavior

			Negative Behavior		
			.00	1.00	Total
Character Race	.00 White	Count	76	25	101
		% within Race Character Race	75.2%	24.8%	100.0%
	1.00 Black	Count	32	10	42
		% within Race Character Race	76.2%	23.8%	100.0%
	2.00 Other	Count	11	5	16
		% within Race Character Race	68.8%	31.3%	100.0%
Total		Count	119	40	159
		% within Race Character Race	74.8%	25.2%	100.0%

Verbal Aggression

Table 9: Season 1 Verbal Aggression

			Verbal Aggression			Total
			.00	1.00	10.00	
Character Race	.00 White	Count	107	37	1	145
		% within Race Character Race	73.8%	25.5%	.7%	100.0%
	1.00 Black	Count	21	6	0	27
		% within Race Character Race	77.8%	22.2%	.0%	100.0%
	2.00 Other	Count	11	3	0	14
		% within Race Character Race	78.6%	21.4%	.0%	100.0%
Total		Count	139	46	1	186
		% within Race Character Race	74.7%	24.7%	.5%	100.0%

For season 1, verbal aggression, the results revealed similar findings between the races as seen in Table 9. White characters observed to be verbally aggressive was 25.5% and African American characters were 22.2%. These numbers are not extreme in comparison to each other and illustrates that neither group is seen as overly aggressive. However, although the findings within the races are close in proximity White characters lead approximately 3% more than African Americans as being verbally aggressive.
Findings for season 20, verbal aggression revealed that 16.8% of White characters were seen as verbally aggressive and 9.5% of characters were observed as being verbally aggressive. Based on the results, Whites exceed African Americans as being more verbally aggressive by nearly 7%. However, although there is a clear majority the numbers are still too small to make any clear observation as shown in Table 10.
Also note, for both seasons 1 and 20, separate variables for verbal aggression including yells often, speaks sarcastically and uses derogatory language were combined into one category *Verbal Aggression*, for better analysis of the data. All variables were dichotomous (1= Yes, 0= No)

Table 10: Season 20 Verbal Aggression

			Verbal Aggression		Total
			.00	1.00	
Character Race	.00 White	Count	84	17	101

		% within Race Character Race	83.2%	16.8%	100.0%
	1.00 Black	Count	38	4	42
		% within Race Character Race	90.5%	9.5%	100.0%
	2.00 Other	Count	16	0	16
		% within Race Character Race	100.0%	.0%	100.0%
Total		Count	138	21	159
		% within Race Character Race	86.8%	13.2%	100.0%

Physical Aggression

Table 11: Season 1 Physical Aggression

			Physical Aggression		
			.00	1.00	Total
Character Race	.00 White	Count	138	7	145
		% within Race Character Race	95.2%	4.8%	100.0%
	1.00 Black	Count	24	3	27
		% within Race Character Race	88.9%	11.1%	100.0%
	2.00 Other	Count	14	0	14
		% within Race Character Race	100.0%	.0%	100.0%
Total		Count	176	10	186
		% within Race Character Race	94.6%	5.4%	100.0%

For season 1, physical aggression data shows that only a small percentage of characters were seen as physically aggressive. However, African American characters were seen as more physically aggressive with an approximate 6% increase over White characters.

Table 12: Season 20 Physical Aggression

			Physical Aggression		
			.00	1.00	Total
Character Race	.00 White	Count	97	4	101

		% within Race Character Race	96.0%	4.0%	100.0%
	1.00 Black	Count	42	0	42
		% within Race Character Race	100.0%	.0%	100.0%
	2.00 Other	Count	16	0	16
		% within Race Character Race	100.0%	.0%	100.0%
Total		Count	155	4	159
		% within Race Character Race	97.5%	2.5%	100.0%

Data for season 20, physical aggression reveal that 4% of White characters were seen as physically aggressive. African Americans were not shown as physically aggressive. Although the results determine that White characters exceed African Americans in physical aggression, there is not enough data to fully determine a conclusion.
Also note, for both seasons 1 and 20, separate variables for physical aggression including reacts to aggression, is seen fighting, and carries weapon were combined into one category *Physical Aggression,* for better analysis of the data. All variables were dichotomous (1= Yes, 0= No)

Crime Committed

In season 1 Whites were portrayed as murderers 2.8% (n= 4) and African Americans were not seen committing any murders. Whites were viewed as rapists 2.8% (n= 4) and African Americans were not portrayed as rapists. Data for season 20 show that 4% of Whites committed murders (n= 4) and 4.8% of African Americans committed murders (n= 2). Crime labeled as other was committed 1% for White characters (n= 1) and African Americans were not portrayed as committing crimes labeled other. It is important to note that all other crimes were not portrayed as being committed in either season 1 or 20. Only murder, rape, and other crimes were shown. For crime committed, African American characters were portrayed as a murderer 4.8% which is still higher than its counterpart with 4%. However, in all other areas of crime African Americans data shows that they were not portrayed as committing any other crime.

Domestic Crime

The numbers of domestic crimes were too small to be able to interpret the data in a meaningful way.

Indicator of Guilt

Data for season 1 show that 7.6% of White characters were viewed with an indication of guilt and 7.4% of African Americans were represented with an indication of guilt. Data for season 20 shows that 15% of White characters indicated that they were guilty (n= 15) and 7.1% of African Americans indicated guilt (n= 3). It is important to

note that these characters were all seen as suspects. All other characters played different roles which eliminates them from these results.

Verdict

Data of season 1 show that Whites were viewed as not guilty 50% (n=6), guilty 33.3% (n= 4), and other as 16.7% (n= 2). African Americans were seen as not guilty 100% (n= 2). African Americans were not seen as guilty or other. In season 20 Whites were portrayed as not guilty 12.5% (n= 1), guilty 37. 5% (n= 3), and other 50% (n= 4). African Americans were represented as guilty 100% (n= 2). African Americans were not viewed as not guilty or other. These numbers are too small to be able to interpret in a meaningful way.

Role Importance

Results for season 1 show that 18.6 % of the roles played by Whites were major roles (n= 27), and 14.8% of the roles played by African Americans were major roles (n= 4). Season 20 shows that 28% of White characters played major roles (n= 28) and 45.2% of African American characters played major roles (n= 19). It is important to note that characters listed as playing major roles were the characters the episode mainly focused on, which excludes background characters from the data. Also note that this finding was used to examine the difference between the racial groups, therefore attention should be paid to the differences between the racial groups and the significance of their playing a major role.

Repeat Character

Season 1 data revealed that 8.3% of White characters were repeat characters (n =12) and 14.8% of African Americans (n=4). Season 20 shows that 23% of white characters where repeat characters (n= 23) and 35.7% of African Americans (n= 15). It is important to note that repeat characters only include characters that were featured in more than 2 episodes. All other characters were viewed as guest appearing characters.

Discussion

Based on the results of the study it is evident that there has been a significant change over time within the crime drama *Law and Order*. Throughout the data it is visible that during the first season of the show there were large disparities that reflected negatively on African Americans. However, by the 20th season one can see that gradual change has taken place. In later episodes in the last season it is almost unrecognizable that the same race of characters during season 1 are now in season 20 represented with squeaky clean images. However, although these new portrayals are more favorable on African American people they still reveal disparities because the results are frighteningly unreal.

Results from season 20 also revealed an attempt for African American and White characters to be seen as similar in regards to criminal actions and behavior, as shown in Table 7. This portrayal does not place any full emphasize on one group, nor does it separate the races as good or bad. Instead, they stand in relatively the same place, which are often times not seen. Hence, this is very significant.

However, although these results do show a significant amount of change from the first season to the last, what does the change mean? And why did it change so drastically? Especially because the portrayal of African American characters in season 1 was dreadfully stereotypical. Hence, although African Americans were no longer seen as just criminals in season 20, television shows especially shows such as Law and Order which often make an emphasis on being similar to real life representations should also depict similar portrayals to the actual population and crime statistics that occur rather than portraying false realities on both extremes, as shown with both season 1 and 20.

According to the U.S. Census Bureau, African Americans made up 12.1% of the population and Whites made up 80.3% in the 1990 data report. The projected population for 2010 U.S. population based on the U.S. Census Bureau lists that Whites make up 79.70% and African Americans account for 12.86%. In 1995, the Uniform Crime Reports revealed that African Americans represented 30.9% of arrests for crime and Whites represented 66.8% of the arrests. For violent crime, which is noted in the (UCR) as offenses of murder, forcible rape, robbery, and aggravated assault, 43.7% of those arrested were African American and 54.3% of those arrested were White. For property crime, which is noted in the (UCR) as crimes of burglary, larceny-theft, motor vehicle theft, and arson 32.6% of those arrested were African Americans and 64.7% of those arrested were Whites. In 2008, the Uniform Crime Report shows that of all arrests 28.3% were African Americans and 69.2% were White for violent crime arrests in 2008, 39.4% were African American and 58.3% were White. For property crime arrests, 30.1% were African American and 67.4% were White.

Based on these figures the depictions made in both season 1 and 20 were not representative to the actual population and crime that occurred. Nevertheless we see that the media does highly exaggerate whether for good or bad purposes; however, television shows such as *Law and Order* and other crime dramas should not be used as an example or be viewed to measure real life. Thus, for those who watch large quantities of television it is no surprise that they are more fearful of the world around them. Not to mention, if the viewer is unaware of the racial disparities found in television media and believe what they see, as the cultivation theory suggests.

Researchers note that the media draws stereotypes deeper into our cognitive minds which force us to always think about race. For that matter, if people are not taught to pay attention to race and stereotypes it would not be as important in our culture because we would not have a preexisting schema to draw from (Bargh, Lombardi, & Higgins, 1988; Higgins & Brendl, 1995). Thus, if something is not relevant in society it is no longer viewed as important and can no longer harm others. Therefore, why should it not be assumed that if the media did not overly exaggerate the portrayals of characters on television then stereotypes could be erased? Unfortunately, because stereotypes extend so far back. Hence, every time a television show, commercial, or a magazine feeds into these negative portrayals it only takes the entire race another step backwards because those messages only continue to form and strengthen, consequently reproducing racism (Gandy, 1994).

According to researchers, after doing several public opinion polls they found that most Whites felt more fearful of crime when around African Americans or in the assumed presence of African Americans (Moeller, 1989; St. John & Herald-Moore, 1995; Oliver, 2003). It is not strange that African Americans are looked upon as criminals or

suspected of being dangerous because that is the portrayal that they often get in the media. However, what is truly strange is that the majority of Whites who were polled felt fearful. Thus, will stereotypes truly leave our culture since it is so engrained in us that even the thought of being near an African American person leaves others in fear?

An examiner states that it isn't surprising that stereotypes have continued to develop, mainly because most people get their information from the media. Hence, based on the media's portrayal of crime and the portrayal of African Americans, it only "creates and sustains" preconceived notions of African Americans (Oliver, 2003).

The findings of the study were not largely consistent with the literature, mainly because many of the stereotypes that were heightened in season 1 depicting African American characters were no longer observed, or were not seen often enough to analyze by season 20. However, the literature does help to describe that with less negative representation of minorities in the media it can lead to a better society. As stated by the researchers, it is simply because our culture would have less negative portrayals of minorities which would help to limit the effect of stereotypes that have been embedded in our culture; and thus, because there would be different depictions of minority people that go against what individuals know to be true. Consequently, with less negative portrayals to generalize and stereotype an individual solely based on their skin complexion the act can become less commonplace.

Thus, season 20 results show that there was a significant change in which African Americans were less likely to be seen in a negative light. Thus, this drastic change can lead to future positive changes in our culture concerning racial issues.

Characterization and Optimization of a Powder Feed Nozzle for High Deposition Laser Cladding

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Abstract

Laser cladding is a process for depositing corrosion resistant and wear resistant materials on structural components and is widely used in the maritime, oil and gas exploration, and energy industries. With high deposition rate laser cladding, a powder mass is pre-placed in front of a scanned laser beam using a powder feed nozzle. Little work has been done to optimize the design of the powder feed nozzle, and so it is not well understood how changes in the geometry of the nozzle affect the geometry of the powder mass. A design of experiments was created testing different nozzle geometries and their affects on the pre-placed powder mass. It has been discovered that deposition rates are not affected by nozzle geometry changes, and that powder mass geometries are most uniform using the double cone nozzle geometry.

Introduction

Metallic materials are widely used in a range of components that are subjected to severe corrosion and wear conditions. For example - both military and commercial shipping vessels operate in highly corrosive seawater environments, which aggressively attack common structural materials such as steels. In power generation systems, shafting and rotors are also exposed to aggressive wear conditions. In order to prevent failure of these critical metallic components, they are typically coated with a wear or corrosion resistant material, depending on the application.

Since these resistant materials are much more expensive than the more common structural materials, it is more economical to apply them as a coating rather than making the component completely out of them. One of the common industrial processes used to coat a substrate with these corrosion or wear resistant materials is known as cladding. Cladding is widely used in oil and gas exploration, maritime, and energy industries using arc and laser arc cladding processes.

Laser cladding is the process of melting and consolidating a protective powder or wire to a substrate by use of a high energy density laser beam. This process offers numerous advantages when compared to other arc-based coating processes. These advantages include better surface quality after machining, minimal metal dilution and

relatively minimal distortion of the substrate. These improved qualities lead to a much better coating than would be seen using arc welding.

Laser cladding processes can be differentiated primarily by how the clad material is introduced. Powder and wire are the most common material forms. Powder is used in either a coaxial or pre-placed cladding process, whereas wire is used in hot-wire processes, a variant of arc welding. Coaxial cladding uses a nozzle in which powder flows directly in to the laser beam. Wire cladding uses a welding wire, which is fed into the laser beam to clad the material. The method of pre-placed powder uses a nozzle separated from the laser beam that lays down a powder mass ahead of the laser beam. Photographs of these methods can be seen in Fig.1 (a-c).

a 

b 

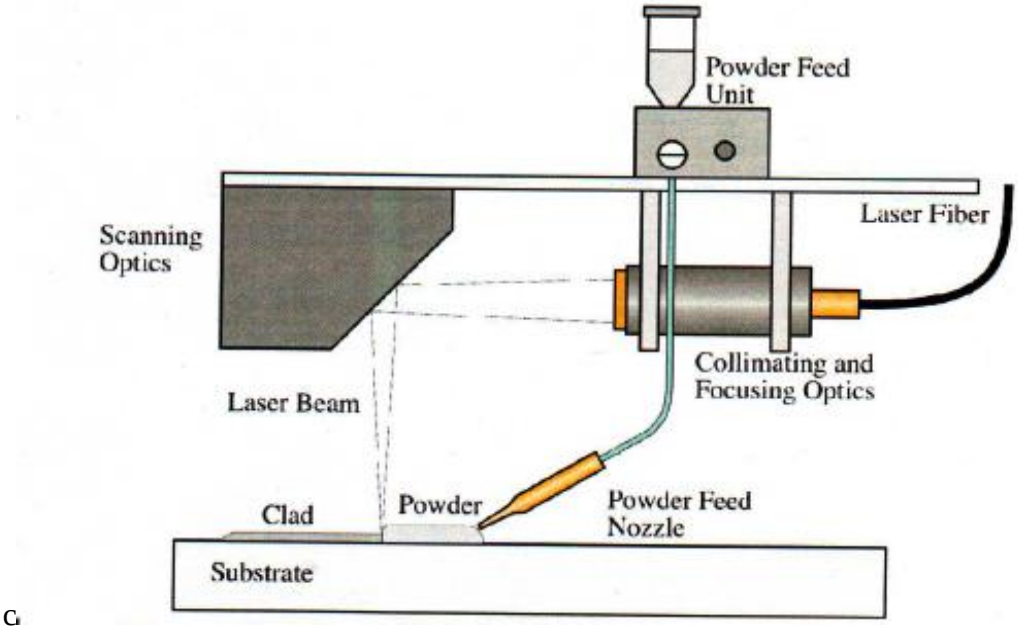
c 

Figure 1(a-c). Photographic and schematic representations of (a) Coaxial powder process (b) Hot wire process and (c) the pre-placed powder process

Laser cladding has become the cladding method of choice because it reduces production time, enhances thermal control by producing a smaller heat affected zone, and can be used for parts repair. Typical deposition rates seen in laser cladding are less than 15 pounds per hour. It is during these processes that axial and hot wire cladding are the methods of choice. During high deposition rate cladding however, typically above 15 pounds per hour, the pre-placed method of cladding is preferred because it is possible to maximize the amount of powder that is melted. Ensuring that the powder width equals the width of the area scanned by the laser, and that the powder melting height is maximized, will create an optimized, stable, clad. A series of photographs seen in Figure 2(a-c) show the formation of a stable clad layer [1].

Figure 2(a-c), Photographs showing the formation of a stable clad

If a powder mass is too tall, however, some of the powder may not melt which creates an unstable clad layer. Photographs showing the formation of an unstable clad layer can be seen in Figure 3(a-c)
[1].

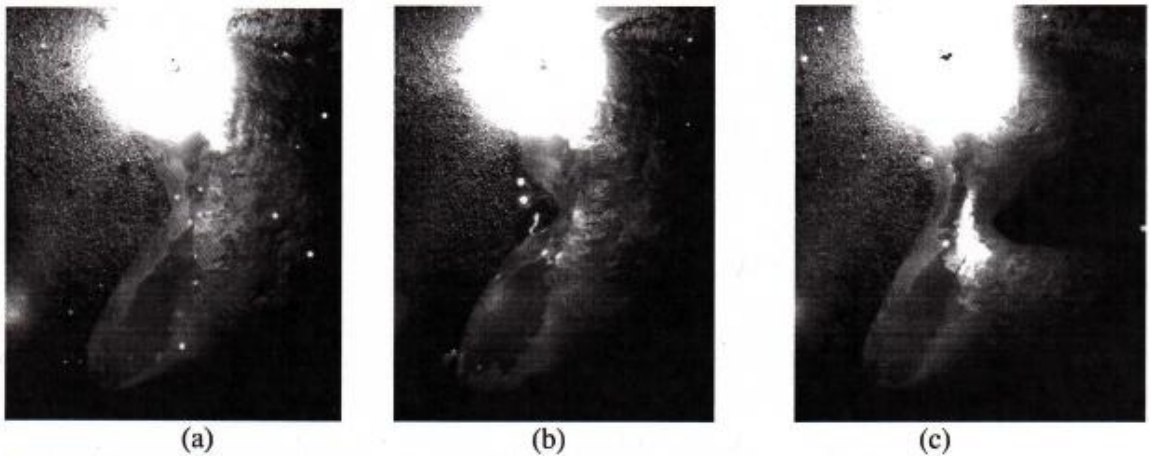


Figure 3(a-c), Photographs showing the formation of an unstable clad layer

It is seen by these photographs that geometry changes of the pre-placed powder mass affect the properties of the resulting clad. These effects are not greatly understood and are the basis of this study.

In order to determine how changes in the powder mass geometry affect the clad properties, changes in the internal geometry of the powder feed nozzle are made. By depositing powder onto a flat plate, the cross sectional geometry of the powder mass can be analyzed. Changing the internal geometry of the nozzle will affect the geometry of the powder mass. After characterizing the different nozzle geometries, the powder mass geometry will be optimized by choosing the nozzle design, and deposition settings that create the most uniform powder mass geometry.

Background

Understanding the ability of a powder to flow, or powder 'flowability', is very important because it is a limiting factor in powder deposition rates.

A powder is able to flow because it is a collection of small solid particles where each individual particle is free flowing, and has the ability to move relative to the other particles quite easily [2,3]. When used in laser cladding, the limitations of powder flowability will affect the deposition rate and powder bed geometry. The angle of repose, or the angle at which gravitational forces overcome inter-particle friction forces, is unique for each powder and is a function of the powder flowability [2]. A physical definition of the angle of repose can be seen in Figure 4. In order to optimize the deposited powder bed geometry, or maximize the deposition rate, the powder bed wall angles must approach the angle of repose.

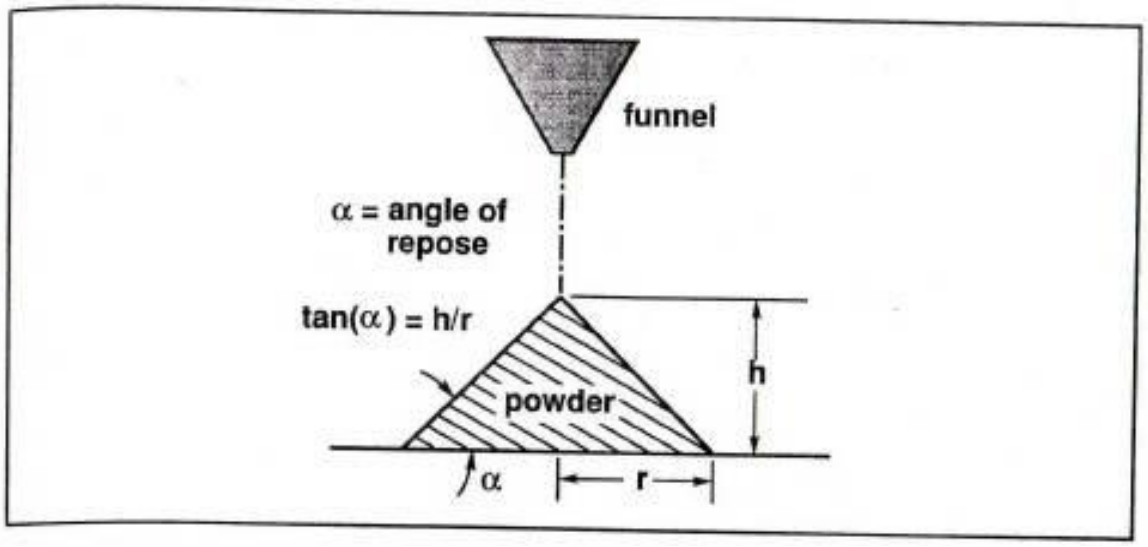


Figure 4, Angle of repose for a powder mass leaving a funnel [4]

Powder feed systems incorporate the angle of repose into their design [2,5]. Most systems include hoppers whose wall angles are very high so as to guarantee any powder will flow steadily. The powder feed system chosen to transport powder greatly affects

the powder flow. Typical feed systems used can be categorized into the following groups based on operation principles:

- Gravity-based
- Mechanical wheel
- Fluidized-bed
- Vibrating

Many powder feeders incorporate a combination of these methods, which provide a more steady powder flow [3].

Gravity-based feed systems, like the one used in this study, rely on the weight of the powder, and the wall angle of the hopper to deliver powder. As long as the flowability is high enough for the powder being used, a steady flow of powder should be easily obtained. Many feed systems of this type incorporate a metering wheel at the base of the hopper that regulates the powder deposition into a more even and steady flow. Figure 5, below, shows a schematic of a typical gravity fed powder feeder incorporating a metering wheel.

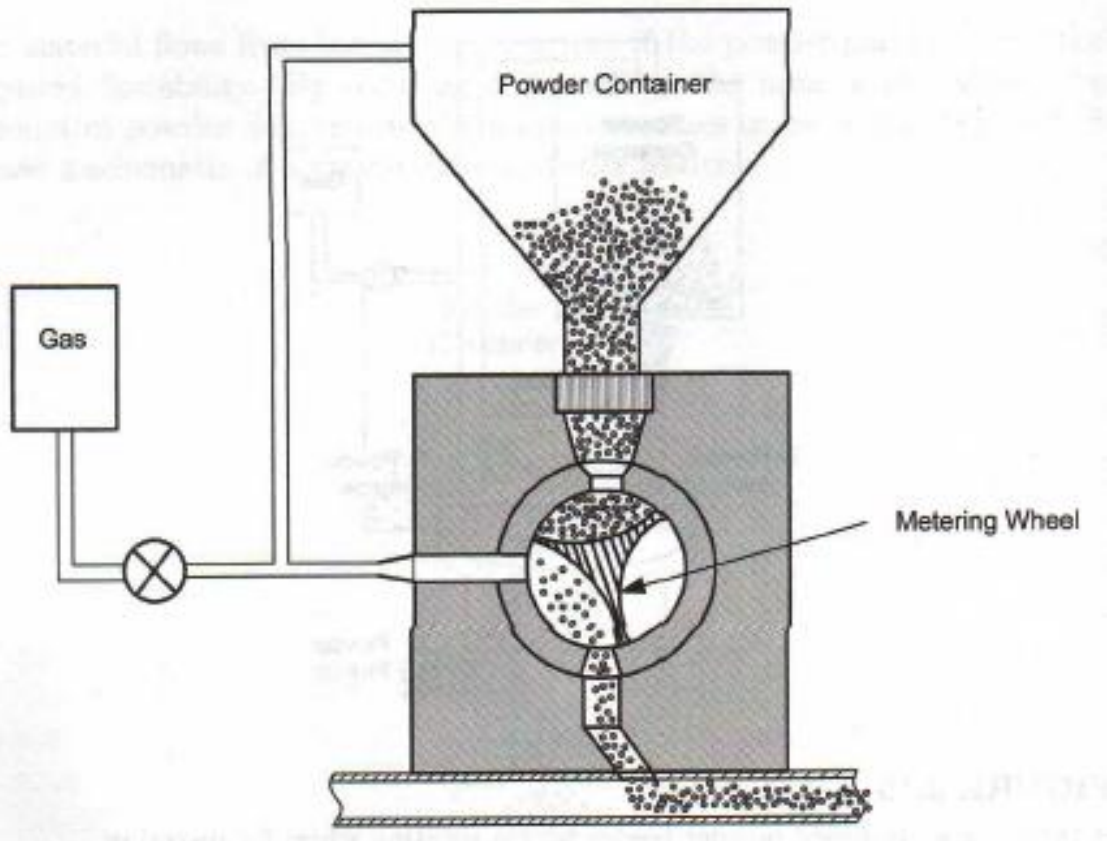


Figure 5, Schematic of gravity fed powder feeder

Mechanical wheel feeders use a rotating helical rod to pull powder from the hopper and deposit it into the feed outlet some distance away [2]. Figure 6(a) shows a

schematic of such a feed system. There are many rod configurations that promote steady flow at different feed rates, however, due to high friction between the powder and rod, these feed systems are generally avoided.

Fluidized-bed feeders use the principles of fluid mechanics to transport powder. At the bottom of the angled hopper, a high-pressure gas stream lifts the powder into the air, separating and thus fluidizing the particles, which are then transported over a wall [2]. Once over the separating wall, the fluidized powder falls into a tube housing the carrier gas, leading the powder downstream to the nozzle output. A schematic of this design can be seen in Figure 6(b).

Vibratory-based powder feeders are simply designed. Using angled trays, and an external vibration device, powder leaves the hopper and bounces along the trays until reaching the outlet. These powder feed systems are within 1% precision of the desired flow rate [2]. A schematic of this system can be seen in Figure 6(c).

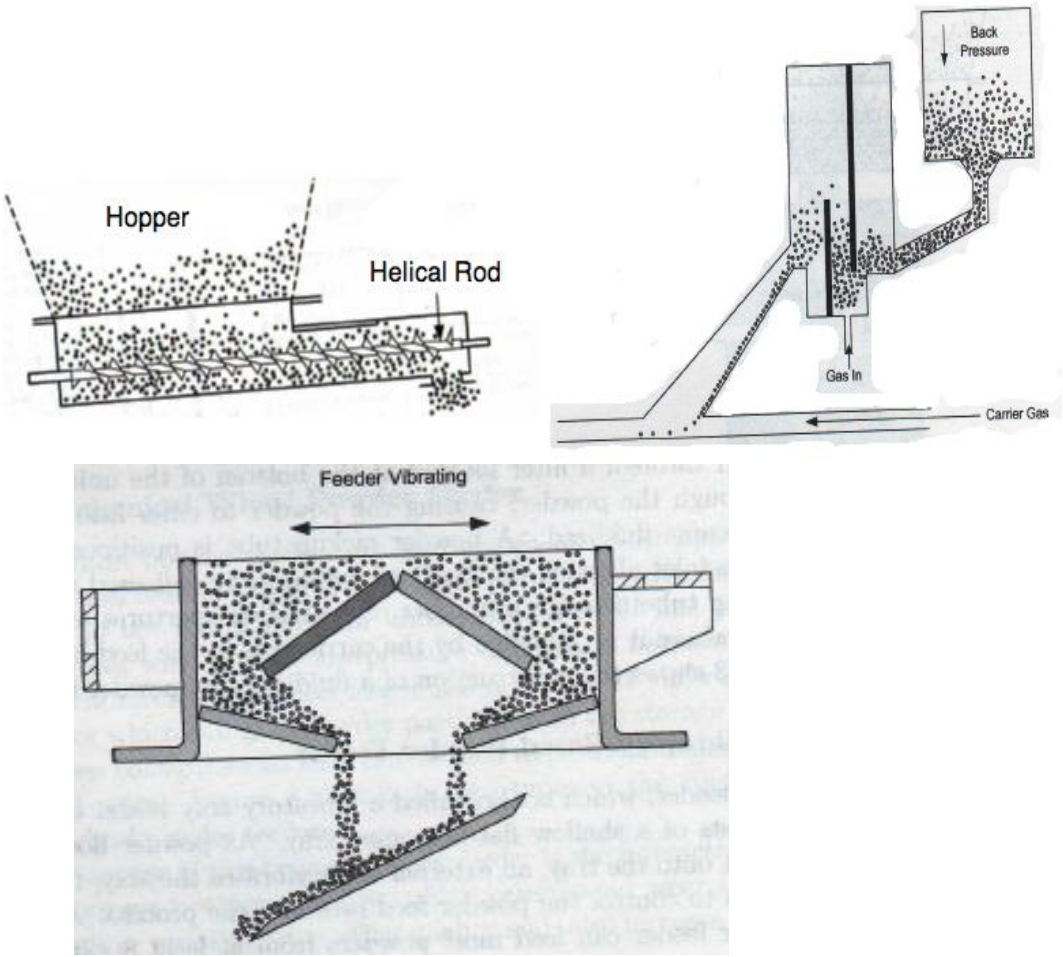


Figure 6(a-c), Schematics of (a) mechanical wheel feed system (b) fluidized- bed and (c) vibratory-based feed system

Powder flow is multi-dimensional and, like flowability, depends on many powder characteristics such as powder size distribution, material, feed system, etc. [2,6]. With increased knowledge in powder flow will come more efficient powder feed systems [3].

Experimental

The experimental setup is built off a 3-dimensional Aerotech motion board, however the experiments are only run in one dimension. The gravity powder feeder is securely attached to an aluminum plate, high above the powder feed nozzle. The nozzle is attached to a series of aluminum rods, allowing easy adjustments in the Z-direction. A photograph of this set-up can be seen in Figure 7. The powder feeder and nozzle move together, while movement is controlled via U-500 Aerotech board controlling software. The Aerotech board is programmed to move 10 inches, while the powder feeder is turned on, allowing a sizeable powder mass to form. After powder deposition, the mass is photographed and the geometry analyzed using Adobe® Photoshop.

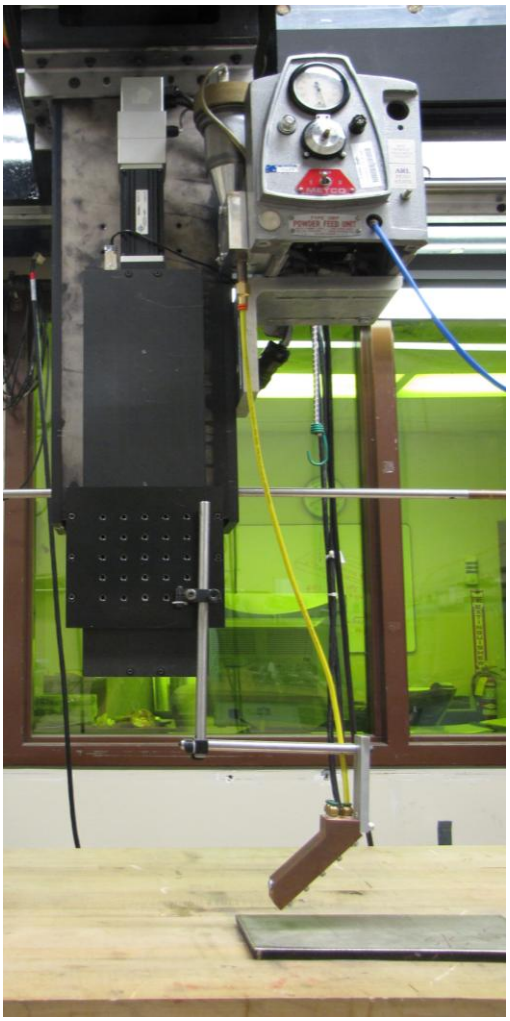


Figure 7, Experimental Set-up

The powder feed nozzle (PFN) used in this study was designed by the Applied Research Laboratory (ARL) at Penn State University. A photograph of the PFN can be seen in Figure 8. The nozzle has been designed to function in an environment of high heat, and so internal water-cooling is used to disperse the absorbed energy during the laser cladding process.

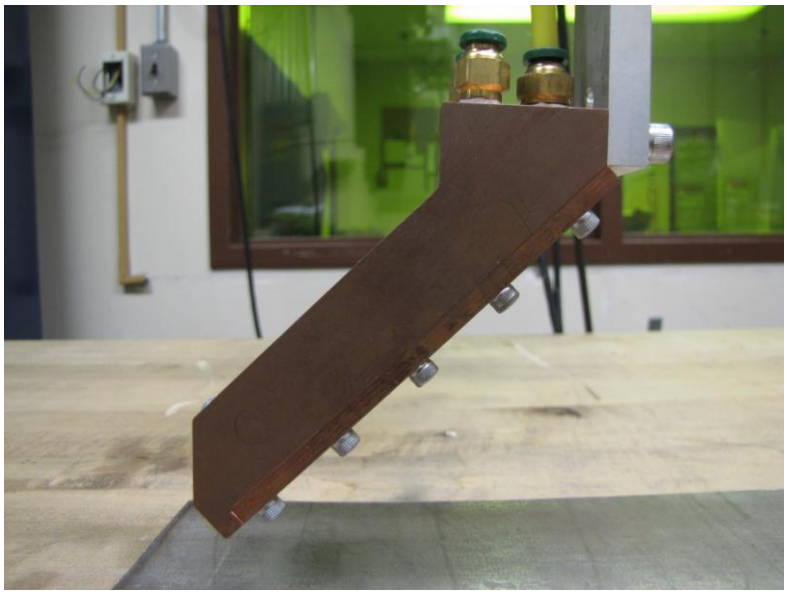
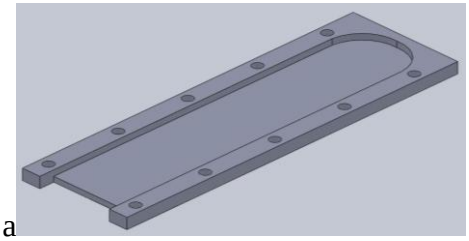
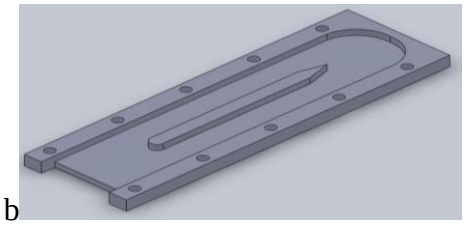


Figure 8, Photograph of powder feed nozzle

In order to test internal geometry changes of the PFN on the geometry of the powder mass, the PFN was designed to allowed easy exchange of the powder track so that alternate track designs can be easily swapped. Schematics of the different track designs can be seen in Figure 9(a-c).

a 

b 

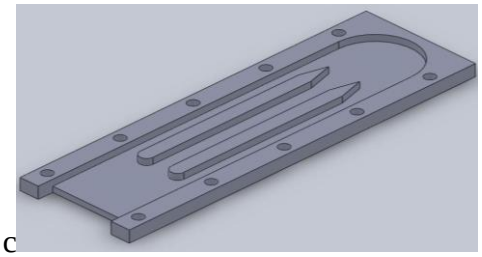
c 

Figure 9(a-c), 3-Dimensional computer model of (a) Flat base plate (b) Single cone base plate and (c) Double cone base plate

Multiple powders were used to characterize the feed rate setting of the Metco 3MP powder feeder. Due to flowablility changes between powders, a constant feed setting will not produce a constant powder flow rate for each respective powder. Nistelle-22, Nistelle-625 and Hastelloy Alloy C-22 were used as the test powders. Identification information for each powder can be seen in Table 1 below.

Powder	Nistelle-22	Nistelle-625	Hastelloy Alloy C-22
Type	Plasma Weld-W	Plasma Weld-W	Plasma Weld-W
Size Distribution	100/325	100/325	100/325
Lot Number	4763-2	3080234-1	3696-2

Table 1, Powder identification information

The mass flow rate of each powder was tested as a function of powder feed setting using the 'watch-and-bucket' method; the powder feeder was turned on for at least one minute per test run, depositing powder into a container which was then placed on a digital scale to measure mass. The mass flow rate is calculated by dividing the deposited mass by the respective run-time observed on the stopwatch. This process was repeated 20 times for feed settings between 0-99 at increments of 5.

In order to simultaneously test multiple parameters, an experimental design in the form of a Taguchi array was formed. This array tests the three main parameters: nozzle travel speed, deposition rate, and base plate geometry. Each parameter is assigned a variable name and has multiple levels of variation as seen in Table 2 below.

	Parameter Levels				
Independent Variables	1	2	3	4	5
Nozzle Travel Speed (a)	5 in/min	10 in/min	15 in/min	20 in/min	25 in/min
Powder Deposition Rate (b)	10 lb/hr	15 lb/hr	22.5 lb/hr	27.5 lb/hr	38 lb/hr
Base Plate (c)	Flat	1 cone	2 cone	none	none

Table 2, Level variations for each parameter.

Combining these parameter levels into non-repeating experiments allows simultaneous testing of each parameter, which are to be optimized later. The Taguchi experimental array can be seen in Table 3.

Run #	a	b	c
1	1	1	1
2	2	2	1
3	3	3	1
4	4	4	1
5	5	5	1
6	1	2	2
7	2	3	2
8	3	4	2
9	4	5	2
10	5	1	2
11	1	4	3
12	2	5	3
13	3	1	3
14	4	3	3
15	5	2	3

Table 3, Taguchi array experimental design

A photograph of the cross-sectional area of the powder bed is taken after each experiment. This photograph is uploaded into Adobe Photoshop and the powder mass geometry is more thoroughly analyzed. 2-millimeter graph paper is used as a scale to measure the dimensions of the powder mass at various locations along the width. These measurements are recorded for each experimental run. An example can be seen in Figure 10 below.

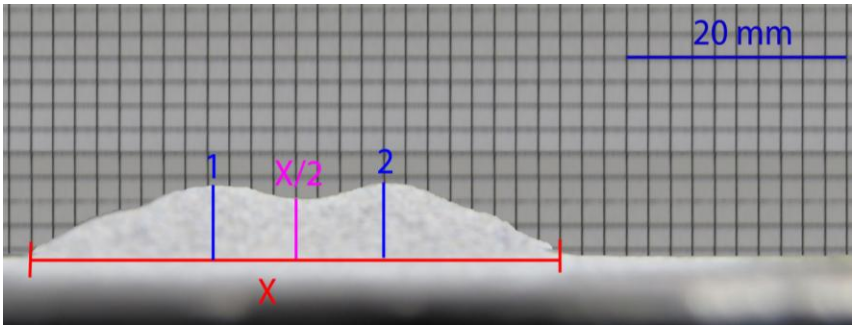


Figure 10, Photograph of powder dimension analysis

Results and Discussion

As was expected before performing the experimental design, each test brought forth the formation of significantly different powder mass geometries. The data measured from each experimental run can be seen in Table 4.

Experimental Run	Total Width, X (mm)	Distance to 1st Bump (mm)	Distance to 2nd bump (mm)	Height of 1st Bump (mm)	Height of 2nd Bump (mm)	Height at X/2 (mm)
1	35	11	24	3	3.5	2.5
2	42	14	31	2.2	2.3	2
3	32	9	21	3.2	3.2	2
4	32	10	22	3	3	2
5	40	12	15	3	3	2
6	46	15	30	4.4	4.8	4.2
7	40	13	25	4	4	3.5
8	36	12	25	4.5	4	3
9	48	16.5	32	6	6	4.2
10	40	NO DISTINCT BUMPS SMOOTH CROSS SECTION				2
11	38					8
12	36					6
13	32					3
14	34					4
15	34					3

Table 4, Dimensional analysis data for each experimental run

By observation it was noticed that adding just one internal cone did not effectively prevent the formation of the two bumps seen using the flat base plate. The single cone plate, in some cases, even causes the formation of a set of smaller, less distinct, secondary bumps, as seen in Figure 11. These secondary bumps cause a less uniform cross-section than was seen using the flat plate design.

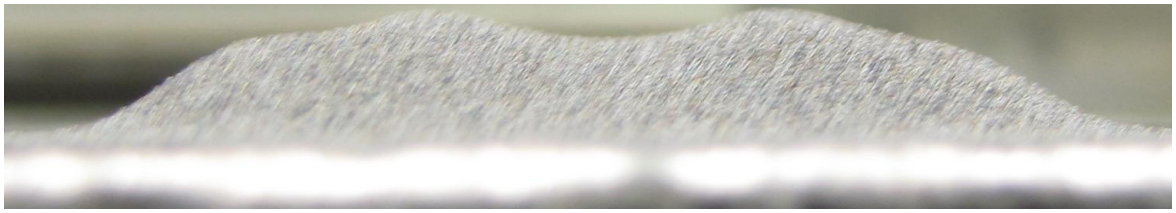
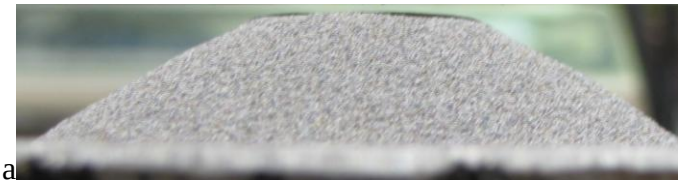


Figure 11, Example of secondary bump formation using single cone base plate.

The five experimental runs using the two cone base plate all provide smooth, highly uniform cross sections. Changing the speed and deposition rate cause vast differences in height and width of the powder mass. Examples of this can be seen in Figure 12(a-c).

a 

b 

c 

Figure 12, Powder bed formations using double cone base plate at (a) 5 in/min at 27.5 lb/min (b) 25 in/min at 15 lb/hr and (c) 15 in/min at 10 lb/hr

It is clear that the double cone base plate is most effective in preventing the formation of distinct bumps, and creates smooth, uniform, cross sections. These tests and photographs suggest that the double cone base plate will be most effective when used in a real laser cladding application.

Conclusion

It has been found that powder deposition rates remain consistent when changing the internal nozzle geometry of the PFN. These consistencies prove that changes in independent variables are the true cause of powder bed geometry changes. Another important finding is that internal geometry changes of the PFN create significantly different powder mass geometries. The flat base plate creates a two-bump geometry, the single cone base plate creates a set a of primary and secondary bumps – for a total of four bumps – and the double cone base plate creates a smooth, single bumped, geometry. The double cone base plate consistently creates the most uniform powder mass geometries of the three plates tested. In order to fully optimize the powder mass geometry, data must be collected using real laser cladding experiments to test the effects of powder mass changes on clad properties. It is expected that a more uniform powder mass will create stronger, more effective, clad layers.

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RESILIENCE IN HOME-BASED CAREGIVERS IN LIMPOPO, SOUTH AFRICA

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ABSTRACT

This study examines resilience in home-based caregivers (HBCs) in Limpopo South Africa. The PEN-3 model is used to investigate cultural influences on care-giving and frame the relationships, expectations, and cultural identity of care-giving in the context of African cultures. Data were gathered from participants' responses in 4 focus group interviews held in South Africa. The results highlight the positive and supportive aspects of HBCs, recognize the existential and unique features, and explain the negative experiences shared by HBCs. The findings from this study emphasize the need for persons of African descent to maintain the African ideology of "collectivity" in care-giving.

Keywords*: HIV/AIDS; resilience; home-based careers; SOUTH AFRICA, PEN-3*

INTRODUCTION

Sub-Saharan Africa has the highest number of people living with HIV/AIDS (PLWHAs). An estimated 33.4 million people are living with HIV globally (WHO, 2008-2009). According to WHO (2008-2009), Sub-Saharan Africa continues to be the region disproportionally affected by the HIV/AIDS pandemic accounting for 67% of all people living with HIV, of which 60% are of women. According to UNAIDS (2007), in South Africa an estimated 18.1% of adults age 15 to 49 are living with HIV, while 3,200,000 women age 15 years and older are infected with the HIV virus. In 2007, approximately 350,000 adults and children died of HIV/AIDS, while an estimated 1,400,000 children lost their mothers, fathers, or both parents to HIV/AIDS (UNAIDS). In Limpopo Province, approximately 396, 877 people are infected with HIV: 47, 000 new infections, 39, 474 people already sick, and 24 000 AIDS-related deaths (Dorington et al. 2006).

Background

The HIV/AIDS pandemic places tremendous pressure on HIV infected households in South Africa. It is predicted that "HIV is the fastest way for families to move from relative wealth to

relative poverty" (Rotheram-Borus, Flannery, Rice, & Lester, 2005, pg. 981). For example, a study investigating the effect of HIV/AIDS-related mortality on household dependency ratios in rural South Africa revealed that household dependency ratio—composite index that reflects the combined effect of all demographic events and processes in the household: births, deaths, ageing, and in-migration and out-migration—in some parts of South Africa is high, thereby increasing the effect of losing a productive-age member (Madhavan, S., Schatz, E., & Clark, B., 2009). HIV/AIDS related mortality can put different strains on household resources and increase its care-giving responsibilities for children and elderly within HIV affected households (Madhavan et al. 2009). Also, care-giving can create major time burdens for caregivers, exacerbating poverty among previously poor caregivers (Hansen et al., 1998; Lindsey et al., 2003; Akintola 2004a). Madhavan et al. (2009) concluded that the age distribution of HIV/AIDS related deaths is primarily affecting the most productive age group of the African population. Because young people are more likely to contract and die of HIV/AIDS, the elderly are left with no choice but to take on care-giving and breadwinning roles for adult children with symptomatic HIV infection and orphaned grandchildren made vulnerable by the death or illness of one or both parents (Boon et al. 2009). In both developed and developing countries, the death or illness of one or both parents brings about the establishment of "child-head households"—children assuming adult roles and responsibilities for other members of the family (Rotheram-Borus, Flannery, Rice, & Lester, 2005, pg. 982). These roles and responsibilities assumed by children in such instances have been shown to have a significant impact in altering their life course (Rotheram-Borus et al. 2005). As a result, the need for home-based care becomes even more crucial in this regard.

Home-Based Care

Studies examining the impact of care-giving on family caregivers have shown that care-giving has a negative impact on the physical and mental health of family caregivers (Orner, 2006). In addition, caregivers may also be at elevated risk for contracting infections such as HIV/AIDS and tuberculosis (Lindsey et al., 2003; Akintola 2006). Studies among family caregivers in Ghana, Tanzania, South Africa and the Democratic Republic of Congo showed that caregivers are also victims of adverse socio-economic consequences, stigma and discrimination, isolation and lack of support (Nnko et al. 2000, Mwinituo 2006, Nkosi et al. 2006, Orner 2006). Van Dyk (2001) stated that caregivers are often frustrated by issues associated with their roles— "lack of basic essentials, inaccessibility of basic medical care, debilitating nature of patient's condition, lack of knowledge about infection, fear and anxiety associated with stigma and discrimination, frustration associated with the premature discharge of the family's loved one, as well as the behavior and lifestyle of the sick person, and overwhelmed by the extended roles and lack of support" (pg. 135–143).

Additionally, the HIV/AIDS pandemic places enormous burden on healthcare services in Sub-Saharan Africa. In South Africa, PLWHAs constitute the vast majority of patients seeking medical attention in public health facilities (Shisana et al. 2002). Health services are often unable to provide patients with the care they require; as a result families are faced with the task of caring for their sick family members at home (Ndaba-Mbata & Seloilwe, 2000). Furthermore, the healthcare system in South Africa is experiencing an increase in HIV/AIDS infections and deaths among nurses and other healthcare personnel thereby placing strains on public health services

needed by patients (Aitken & Kemp 2003). Studies conducted in Zaire found that the prevalence of HIV infection among health care professionals increased from 6.4% to 8.6% between 1984 and 1986 (Mann JM, Francis H, Quinn TC, et al., 1986 and N'Galy B, Ryder RW, Bila K, et al., 1988). Uebel et al. (2007) explained how health care workers living in areas where the prevalence of HIV infection is high, the disease becomes community acquired, thus the prevalence of HIV infection among health care workers becomes comparable to that of the communities in which they live. Relatedly, a anonymous survey involving 595 health care workers across race groups in 4 different provinces in South Africa found an overall HIV infection prevalence of 15.7%, compared with an estimated prevalence of 15.5% among adults in South Africa (Shisana O, Hall EJ, Maluleke R, Chauveau J, Schwabe C., 2004). Aitken and Kemp (2003) explained how poor compensation of healthcare workers and poor working conditions of nurses and other healthcare professionals has led to large-scale emigration to foreign countries of these healthcare workers resulting in a critical shortage of nurses and other medical personnel in South Africa.

For this and many more reasons, a number of government and non-governmental agencies have adopted home-based care as an alternative to hospital care. As a result, PLWHAs are often sent home to be cared for by their family members. Institutionally, home care programs for people with AIDS (PWAs) started in North America and Europe as an alternative to help minimize hospital expenses, and to assist families and other caregivers cope with the challenges of caring for PWAs (Spier & and Edward 1990). However, the act of selfless care-giving has been a part of Africa culture. This practice provides the value for Africans to see themselves as part of the historically large community (collective) to which they belong (Mbiti, 1969: 108-109). Considering the difficulties associated with providing home-based care in Africa, due to the crowded and substandard conditions in which most PWAs live, Spier & Edwards (1990) concluded that, what PWAs need most is "counseling, lots of personal contact and empathy and a sense of belonging" (p. 144). Nevertheless, in Norway the emphasis of home-based AIDS care is focused on domestic tasks such as cleaning, laundry and shopping (Bunch, 1998); while in the USA home-based AIDS care is centered on problems in home maintenance, individual coping, nutrition, feeding and fatigue (Ungvarski & Hurley, 1995) . Home-based care PWAs was introduced in a number of African countries during the late 1980s and early 1990s (Sims & Moss, 1995). In South Africa, home-based caregivers advise, inform and counsel patients (L R Uys, 2002) with the supervision of registered nurses. According to Steinberg et al. (2002), volunteers make-up a substantial proportion of HIV/AIDS caregivers in South Africa. Volunteer caregivers are usually not members of the patient's family but often people recruited from HIV infected communities by AIDS organizations (Akintola, 2008). They are trained to assist family members in providing care for the PLWHAs (Blinkhoff et al. 2001, Steinitz 2003, Akintola 2006) and to work hand in hand with clinics and hospitals（Campbell, C; Nair, Y; Maimane, S; Sibiya, Z; 2008). Few volunteer health workers have basic education and they worked with little or no payment to cover their expenses (Campbell, C; Nair, Y; Maimane, S; Sibiya, Z; 2008). For example, at the time the present study was conducted in 2005, participants received a stipend of R500-00 ($64.5970) from the **South African** government to cover HBCs daily transportation and to enable them purchase food and drinks. However, the provision of this stipend soon came to an end when the program ended in 2006 and 2007. Even though much has been written on caregivers—challenges: physical, psychological, and coping mechanisms— much has not been

studied regarding resilience in home-based caregivers in Limpopo South Africa. The PEN-3 model is used to examine cultural influences on care-giving and frame the relationships, expectations, and cultural identity of care-giving in the context of African cultures.

The Concept of Resilience

The concept of resilience is derived from the disciplines of physics and metallurgy (John Paul Lederach, pg. 24). Resilience, in this context, is applied to a special family of metal that when placed under intense heat will lose shape, soften and meld, however when re-cooled has an incredible ability to return to its initial shape (John Paul Lederach, pg. 23). Nonetheless, in developmental psychology and social work resilience is examined in children who have withstand and rebound from vulnerable and high-risk situations, thus finding their way toward expressively healthy childhoods and responsible adulthoods (Walsh, 1996, John Paul Lederach, pg. 24).

Contrary to the typical interpretation of resilience, this article advances a culturally sensitive view of this concept, thus defining resilience as the "sensation of being voiceless" (John Paul Lederach, pg. 24). John Paul Lederach explained how the process from being voiceless to acquiring a voice requires the need for people to feel close enough to procedures that affect their daily personal and collective lives, so that a sense of meaningful conversation is actually possible. In the Western world, resilience has been viewed as residing within the individual, with the family often dismissed as dysfunctional (Walsh, 1996). However, in African cultures, the involvement and support of the collective— government and non-governmental agencies, families of PLWHAs, and community members—in assisting HBCs acquire a voice to adequately provide care to PLWHAs is highly urged.

THEORETICAL FRAMEWORK

The PEN-3 model developed by Airhihenbuwa (1995, Airhihenbuwa & Webster, 2004; 2007a) is used as the conceptual framework on which this study will be organized. This model proposes a strategy for organizing and analyzing cultural influences on health behaviors and planning culturally appropriate health education programs (Iwelunmor et al. 2006/2007). Also, PEN-3 provides a cultural framework for researchers and interventionist by urging them into partnering with communities when defining health problems and seeking solutions to those problems (Airhihenbuwa, 2007a). Having been developed initially as a basis for comprehending health behaviors of persons of African descent (Airhihenbuwa & Webster, 2004), the PEN-3 model is used in the identification of positive, unique, and negative aspects of African cultures.

PEN-3 consists of three dimensions: cultural empowerment, relationships and expectations, and cultural identity (Airhihenbuwa, 2007a). The Relationships and Expectations and Cultural Empowerment domains are the "assessment" dimensions, which enable researchers/interventionists evaluate communities of interest before planning interventions. The first dimension of the assessment domain is relationships and expectations (perceptions, enablers, and nurturers). We examined how HBCs perceptions of HIV and AIDS helped enabled and nurtured PLWHA. The second dimension of this evaluation framework is cultural empowerment (positive, existential, and negative). We examined the extent to which the three levels of relationships and expectations are positive and supportive of PLWHA, existential in

that it is maintaining African values, and negative in making HBCs voiceless due to the lack of support. According to Airhihenbuwa (2007a), existential values—cultural beliefs and practices, and/or behaviors that make the culture unique, which has no harmful health consequences—should not be targeted for change, but rather integrated to help improve interventions undertaken in such communities.

Cultural identity (person, extended family, and neighborhood) is the third dimension of the PEN-3 model. This dimension is the "application" domain, which emphasizes the need for researchers/interventionists to return to the communities from which their findings were acquired, to share their findings, and to further learn from these communities before deciding where to begin their interventions: point of entry (Airhihenbuwa, 2007a).

METHOD

Data gathered from the study "Stigma, Cuture, and HIV and AIDS in the Western Cape, South Africa: An Application of PEN-3 Cultural Model for Community-Based Research" (Airhihenbuwa et al. 2009), is used in this study. The aforementioned study was a capacity building HIV and AIDS stigma research in South Africa for Black post-graduate students in the University of Western Cape and the University of Limpopo. Focus group discussions were conducted among home-based caregivers over a period of **one to two** years in three different communities in South Africa—Khayelitsha and Gugulethu, and Mitchell's Plain. Participants were made known of the study's content and proceedings in their native languages by the focus group facilitators; informed consents were solicited from each participant.

Sample

A total of 4 focus groups (FGs) interviews were conducted among 41participants. The numbers of participants differed in each FGs. For example, FGs one, two, three, and four comprised of nine, eleven, ten, and eleven participants respectively. HBCs were interviewed to provide a better understanding on how they perceived their work—positive, existential, and negative perceptions.

Data Collection

During the interviews, probes were used by focus group facilitators only when permission was inquired and granted by participants. Focus group interviews were facilitated by post-graduate students and they followed an open-ended questions format. Data were collected using languages preferred by the participants—either isi-Xhosa, English, or Afrikaans. The focus group interview guide for this portion of the above mentioned study comprised of **18-28** questions or scenarios for the duration of **30-60 minutes**.

Data Analysis

Using NVivo software package for data analysis, four home-based caregivers transcripts were coded using two forms of notes—free notes and trees notes. Free notes coding is the first stage of data analysis with NVivo and it involves coding participants' transcripts verbatim. Also,

free notes coding requires no form of organization or grouping of main themes. However, in tree notes coding, main codes generated by free notes are condensed into manageable categories to enhance a better understanding of the results produced. After all transcripts were coded, the number of free notes codes generated differed between transcripts. For example, transcripts one, two, three, and four produced 135, 163, 182, and 167 free notes respectively. However, there were five predominant themes (tree notes) generated: HBCs, community members, HIV/AIDS¸ family members of PLWHA, and government and non-governmental agencies.

RESULTS

The following three main themes emerged from the analysis of the focus group interviews: HBCs as sources of hope and support (positive perceptions, positive enablers, and positive nurturers); HBCs assuming the role of family (existential perception, existential enablers, and existential nurturers); voicelessness of HBCs due to the lack of support (negative perception, negative enablers, and negative nurturers). As recommended by Airhihenbuwa, when implementing PEN-3, researchers and interventionist must first present the positive and the existential aspects of the communities being studied, before stating the negatives. The aforementioned themes are illustrated with quotes from the participants. Quotes were organized into one of the nine possible categories of the PEN-3 analysis framework. Even though quotes were organized in the general study, in this paper, the results were organized into positive, existential, and negative aspects of the Cultural Empowerment domain of the PEN-3 model.

HBCs as Sources of Hope and Support (Positive)

Focus group discussions and in-depth interviews revealed that HBCs were accepting of and willing to provide care for PLWHAs and their families. This finding is consistent with that of previous studies which highlighted how most HBCs expressed satisfaction in their work and in helping others (L R Uys, 2002). The following quotation illustrates this further,

> I don't see a problem with my scope of work in relation to HIV/AIDS. I only see a person who is sick, alike me that need to be given medication to prolong his/her life. I don't have to be confused that I will get an illness. I don't have to judge, but to admit.

In addition, HBCs counseled and provided information to PLWHAs, hence enabling patients cope better with their positive HIV status. This may be indicative of the knowledge HBCs acquired through training and from their daily interactions with patients. One participant remarked, "I would like to indicate that we have a better understanding because we treat the people and we are able to see them". Another participant expressed,

> My client was in Grade 11, and recently discovered that he was HIV/AIDS positive, so he thought the was no future to live for, so he decided to take the suicide route, until I counseled him, he then adjusted quite well.

Furthermore, the participants in this study assumed some of the responsibilities of healthcare workers in South Africa, thus allowing the understaffed and underfunded public healthcare systems to adequately provide care for PLWHAs (Rödlach, 2009). As evidenced in the responses of many participants, HBCs assisted in the provision of basic physical care

rendered to PLWHAs in South Africa. One participant explained, "They are grateful, because we don't disguise them; we help them with a smile on our faces, even when we are removing those waste products. We maintain some collaboration". As another participant expressed it,

> It is not the same, for a person who has full blown AIDS, he/she might be bedridden and unable to do anything for himself/herself and the patient will first require you to bath him and take him to the toilet, but with other patient they can still do thing for themselves.

HBCs assuming the role of Family (Existential)

Participants expressed dedication and determination to support PLWHAs and their families (Rödlach, 2009). This finding reinforced the findings of Mbiti, Menkiti, Asante, Akbar, Karenga, Myer, and Graham which urges the need for collectivity rather than personhood in African cultures. The notion of collectivity demands the responsibility of the whole, hence what happens to the individual happens to the collective, and what happens to the whole group happens to the individual (Mbiti, 1970, p.141). For this reason, it wasn't uncommon for HBCs to assume the role of families even when illness was not the responsibility of family members. The following quotations highlight this further:

> You will find that someone is having a client that is sick, and need to taken to a clinic, and/or a certain referral be made, you will have to devote yourself.

> The client may refuse to go to a clinic/doctor if informed by the family members, but if it is me the home based carer I will work with him/her until I win the trust of the patient.

The participants mentioned the deaths of community members due to HIV/AIDS as a motivational factor for which they provided care to PLWHAs and their families. As remarked by several participants, "It is because people are dying as a result of this disease, which is why we devote ourselves". As evidenced in the responses of most participants, the act of selfless care-giving is existential (unique) to African cultures, which encourage persons of African descent to view themselves and their roles in the society as belonging to the community at large (Mbiti, 1969: 108-109). This collective nature of identity is further expressed in the African proverb "I am because we are and because we are therefore I am" (Mbiti, 1970, p. 1410).

Moreover, care-giving enabled HBCs develop a sense of belonging and kinship with other members of the society (Mahilall, 2006) in which they worked and resided. These relationships allowed HBCs acquire a sense of purpose and connection with families and community (Akbar, 1976), thus the notion that individuals cannot be understood separately from the collective (Myers, 1988). This finding is clearly exemplified in the words of one participant, "It is the work that I have vowed to do, I said to, myself I will work for the community". Another participant expressed, "We only understand that there is no cure, but the only best thing that we can do, is to help this people that are infected and affected with HIV/AIDS".

The participants repeatedly described care-giving as a selfless act of providing care to PLWHAs, in spite the risk of contracting the HIV/AIDS virus. One participant remarked, "We are not protected. We are risking with our own lives for caring for these people who are bedridden. You just care". This may be indicative of the concept of oneness which requires a

shift in thinking toward valuing human beings above the social and economic status that has been assigned to them (Graham, 1999). Also, in-depth discussions and focus group interviews revealed that HBCs willingly rendered care to PLWHAs. As expressed by one participant, "It's because we choose to work out of love". Another participant said, "It is coming out of passion".

The participants often mentioned feelings of confidence in themselves and their work as a result of the useful knowledge they had gained on HIV and AIDS (Mahilall, 2006). One participant remarked, "I just feel proud and it is also volunteering and it's platform for me to learn". Furthermore, participants felt that the training they received enabled them educate their community members to take precautionary measures to protect themselves (Akintola, 2008) from contracting the HIV virus. One participant expressed, "It is difficult to work with this people, but given the love we are committed to care and educate these people". This finding highlights the need for people of African descent to fulfill their duties to the collective (Menkiti, 1984).

Voicelessness of HBCs due to lack of support (Negative)

In spite of the willingness of HBCs to provide care to PLWHAs, home-based care programs receive very limited support from the government (Steinberg et al. 2002) and also from donor agencies to fund caregivers salaries (Akintola, 2004b), thereby leaving care organizations with little option but to rely primarily on volunteers to provide care (UNAIDS 2000; Akintola 2004b). With the absence of support and the lack of recognition displaced by the government, HBCs in South Africa are finding it very difficult to carry out their daily duties. Recent data showed that home-based care organizations in South Africa are in need of assistance from government and non-governmental agencies (NGO) in order for HBCs to be able to provide care efficiently. The following quotations exemplify this further:

> Phutanang itself as Home based care is lacking funds, so far we asked for donations from the DoPW. Our budget is low that it does not allow us to have a proper accommodation.

> I plead with other companies that have a social responsibility to help in providing us with the necessary needs even companies abroad.

Because care organizations in South Africa receive little or no financial support from government and non-governmental agencies (Akintola, 2004b), HBCs are lacking the necessary skills and capacity building preparations required to effectively assist with the enormous needs they encounter in their work (Rödlach, 2009). The following participant's description is illustrative:

> I want to refer to the statement of N0. 3, that we received different training and we are still lacking in training and we are using our knowledge to counsel.

> The lack of training, I am not sure if carers will answer that openly, the gloves are the only thing that we use, we don't know how to handle the patient, when the patient is presenting minor complications of his/her.

Although the participants in this study did not expect anything in return, they expressed a desire for some recognition (Rödlach, 2009) for their work. HBCs felt that the work they were doing was similar to a full-time job but was not regarded as such (Rödlach, 2009). Also, HBCs

expressed feelings of frustration and disappointment due to the lack of support and the absence of recognition displaced by the government regarding their work. The following quotations explain this further:

> The government should increase the payment of Home-based carers because the work that they are doing is difficult and the government should register the home-based carers.

> I would like the government to acknowledge that we are overworked, and we don't have anyone to take care of us as we do a lot of work.

Additionally, HBCs encountered various challenges from the families of PLWHAs. This may be indicative of the fact that the families of PLWHAs are afraid of been stigmatized and discriminated against by their friends and relatives within the communities in which they resided. Furthermore, studies have revealed that stigmatization of the families of PLWHAs is a harmful and damaging issue (Campbell et al. 2005) that can tremendously impact the reputation of the families to whom PLWHAs belong. This finding showed that community members have not yet come to the realization that HIV/AIDS exist. The following quotations explain this further**:**

> Many people have not agreed that HIV/AIDS exist, they do not agree with us, because we the Home Based Carers have realized that HIV/AIDS do exist. We observed people that we treat, to evidence that HIV/AIDS is not something that is a figure of speech, it exists.

> Is just that people don't believe that HIV/AIDS exist because there is no grave that is imprinted on it as the grave of a person who died from HIV/AIDS.

In addition, the participants mentioned that family caregivers feared to touch and make close contact with their AIDS relatives (Rödlach, 2009), thereby increasing HBCs daily care-giving responsibilities. Moreover, research have shown that people living with AIDS experience continuous hardships due to blames directed at them for their conditions, and misconceptions regarding causal social contact with them (Herek, Capitanio, & Widaman, 2002). Also, because the HIV infection carries the stigma of immorality, promiscuity and prostitution in Africa, stigma associated with the disease and its related shame has increased (Rödlach, 2009). This finding is clearly expressed in the following quotes:

> The family members of the HIV/AIDs infected person can hide the sick person until he/she dies. They may think that it is "Makgoma" or they are bewitched.

> Some of the family member oust the patient, if you are the carer every time you come for the patient they just refer you to the patient, this implies that the family members have thrown in the towel, leaving the patient all to the home based carers.

Participants stated that their patients trusted and thus shared confidential information with them. Even though HBCs did not encounter difficulties keeping the confidential information of their HIV positive patients, they found it rather challenging maintaining the privacy of their client's conditions (Akintola, 2008) particularly from other members of the patient's family who resided within the same households. One participant explained,

> The other challenge that we encounter is that you are the one that will know the patient, the family members knows that he/she is a patient but they don't even know his/her room. They will know that they have a patient. Again they will know that they have a patient, but they will turn to you as the carer to ask

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> about the condition of the patient and as a carer you have to maintain the issue of confidentially, if the patient have not disclosed to them you also have no right to tell them.

Participants explained how PLWHAs refrained from disclosing their positive HIV status for fear of stigmatization and discrimination, thus isolating themselves from sources of support (Nnko et al. 2000, Akintola 2004a, 2006). Furthermore, studies have indicated that stigmatization and discrimination against PLWHAs are primary barriers to effective HIV prevention, treatment, care, and support (Shisana et al., 2005) aimed at increasing HIV/AIDS awareness and decreasing its spread. As one participant stated, "We find it as a challenge because people have not yet accepted their status, they don't want to disclose their status to the carers, and they don't want to take treatment". Another remarked, "To concur with No.4, they are afraid to make contact with the community because they are rejected. When you as the carer you visit the patient for treatment they are afraid to see".

In spite of HBCs selfless act to provide care for PLWHAs, participants expressed feeling less competent to adequately alleviate the pain and suffering of their patients (Akintola, 2008). Also, HBCs constant exposure to the suffering and the loss of terminally ill patients (Defilippi, 2003b) had a psychological and emotional impact in their lives. One participant stated, "It affects me to an extent that I feel guilty, because some of my patients die and leave small children to have no one to care for them and it bring about child-headed households". Another participant remarked,

> It affect me, more or less the same as the previous speaker. We interact with the patient; at times you meet a patient while he/she is at an HIV stage. You can see the problem that the patient is going through as well as his family problems. When you are on your own you imagine about the family situation of the patient, while on the other side the demands of the family are waiting for you. As the carer you will just wish like you can find a vaccine that you can give the patient to make him feel better.

Patients overload was a major problem encountered by the participants in this study. HBCs often mentioned feelings of exhaustion and burnout as a result of their case loads. This may be indicative of the increasing number of AIDS patients in South Africa, thus HBCs have become responsible for visiting (Rödlach, 2009) and providing care to many households in which PLWHAs resides. One participant said,

> When I am looking on our workload, I will be talking from the organization frame of reference. The work that we do require us to see 7 patients, and all of them come with challenges. There is no single day that goes by without any problems. The work is too heavy; there is no carer that has only 2 patients. Even I the coordinator it takes me 2 to 3 days before I finish the work I am supposed to be doing.

DISCUSSION

It is evident that the HIV/AIDS pandemic is wreaking havoc on Sub-Saharan Africa. However, studies have shown that South Africa has the highest number of PLWHAs in Sub-Saharan Africa. Furthermore, numerous studies have concluded that the HIV/AIDS pandemic places tremendous strains on: HIV infected households, family caregivers of PLWHAs, healthcare services, and home-based caregivers in South Africa. For these and many more reasons, this article examined resilience in Home-Based Caregivers in Limpopo South Africa.

The findings from this study explained how the African ideology of "collectivity" is central in assisting HBCs acquire a voice in South Africa. The concept of resilience defined as the "sensation of being voiceless" was important in shaping HBCs positive, existential, and negative perceptions regarding care-giving in the following ways. First, most of the 41 participants expressed satisfaction in their work and in helping others, this may be indicative of HBCs training, daily interactions with patients, and understanding of HIV and AIDS that made them accepting of and willing to provide care for PLWHAs and their families. As evidenced in the responses of most participants, HBCs served as sources of hope and support to PLWHAs and their families.

Second, the existential aspect of selfless care-giving of the African culture played a vital role in shaping HBCs perceptions of and decisions to provide care for PLWHAs and their families. This finding exemplifies the African ideology of belonging to the collective and being part of the whole (Graham, 1999). Indeed, the participants in this study expressed the need to feel connected to and supported by other members of the society (Mahilall, 2006) in which they worked and resided. As a result, HBCs saw themselves and their roles in the society as belonging to the whole community (Mbiti, 1969: 108-109), thus enabling HBCs assume the role of family.

Lastly, the results indicated that in spite of HBCs willingness to provide care to PLWHAs and families, HBCs encountered various challenges from government and non-governmental agencies, families of PLWHAs, and community members. Care organizations receive very limited support from government and non-governmental to fund HBCs salaries, thereby making it difficult for HBCs in South Africa to carry out their daily responsibilities. Furthermore, the findings revealed that community members have not yet come to the realization that HIV/AIDS exist, thus decreasing the levels of involvement and support rendered to HBCs by other members of the society. Also, because the HIV infection is associated with numerous stigmas such as immorality, promiscuity and prostitution, families of PLWHAs are finding it difficult to provide care to their AIDS relatives, hence increasing the responsibilities of HBCs in providing care to PLWHAs.

This finding is consistent with the findings of Graham (1999) that social problems and human dysfunction arise when people become separated and disconnected from their independent human relationships. In contrast to the notion of "collectivity", the ideology of "personhood" was rather displayed in this study. For example, the participants provided care for PLWHAs and their families because they wanted to and not because they had to. However, the results showed that HBCs received little or no support from the collective—government and non-governmental agencies, families of PLWHAs, and community members—to efficiently provide care. Despite the negative consequences associated with providing care to PLWHAs and the families, future research should aim at providing care and support to HBCs in South Africa. Additionally, the need to develop interventions that urges collectivity in African cultures is of the utmost importance.

Limitations

Like all interventions, the limitations of this study are as follows: findings are limited based on the selectivity of participants. Also, the level of openness expressed by the participants may vary in their responses to questions asked in the in-depth discussions and focus group interviews. Such concerns often arise from conducting research on sociocultural issues associated with life threatening conditions such as HIV/AIDS. The sample size used in this study was relatively small yet adequate for the qualitative method employed in this study. However, the results should not be considered representative of HBCs in South Africa, thus the need for future studies to examine resilience in HBCs in other provinces of South Africa is urged in order to better understand cultural influences on care-giving in South Africa. Finally, the findings from this study emphasize the importance of the African ideology of "collectivity" in care-giving in the context of Africa culture, thus the interpretation of this concept is not applicable to HBCs in other cultures.

CONCLUSION

The results highlight the positive and supportive aspects of HBCs, recognize the existential and unique features, and explain the negative experiences shared by HBCs. Moreover, the findings from this study emphasize the need for persons of African descent to maintain the African ideology of "collectivity" in care-giving. Akbar (1976) concluded that "the unity of the African cosmos is like a spider web; its least element cannot be touched without making the whole vibrate". The aforementioned quotation exemplifies the primary essence of this study: the involvement and support of the collective—government and non-governmental agencies, families of PLWHAs, and community members—in the provision of care for PLWHAs. Because the HIV/AIDS pandemic is and will continue to negatively impact the world, particularly the continent of Africa, the need for the collective in assisting HBCs acquire a voice is highly urged if the act of selfless care-giving for PLWHAs is to be continued in African cultures.

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Father Incarceration and its role on Coparenting Support and Parenting Stress

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Abstract

The literature regarding incarceration fails to include the profound effects that incarceration has on parenting relationships and behavior. The literature tends to focus on how incarceration influences marital/romantic relationships, parent-child relationships, and child development. The overarching research goal is to investigate how incarceration influences coparenting support and parenting stress. The data was drawn from The Fragile Families and Child Wellbeing (FFCW) Study, a national longitudinal study that follows a disadvantaged urban cohort of 4,898 parents and their children. The analysis focused on how incarceration influences coparenting support and parental stress among four subsamples of parents (n=2008): parents where the father had no incarceration experience (n=1868), parents where the father had experienced incarceration (n=140), parents where the father had experienced incarceration once (n=100), and parents where the father has experienced incarceration two or more times (n=40). The analyses consisted of conducting means and standard deviations on coparenting support and parenting stress from the sample of fathers and mothers. Two-sample, mean comparison t-tests were used to estimate the mean differences in coparenting support (and parenting stress) between father and mother reports. In addition, one-way ANOVAs were used to estimate the mean differences in coparenting support and parenting stress among subsamples of father reports (and subsamples of mother reports). The results indicate that among a subsample of fathers, fathers who had experienced incarceration reported less coparenting support and more parenting stress compared to fathers who never experienced incarceration. Among mothers, mothers whose spouse/partner had experienced incarceration reported less coparenting support compared to mothers whose spouse/partner had never experienced incarceration. Interventions should focus on assisting families when the father is incarcerated and when he reunites with his family.

Introduction

The rate of incarceration has drastically increased over the past few years. As of 2003, more than 2 million people were in federal and state prisons in the United States (Arditti, Smock, & Parkman, 2005). In 1991 there were half a million children with an incarcerated parent. In 2000 that number had risen to 1.5 million children (Day, Acock, Bahr, & Arditti, 2005; Hanlon, Carswell, & Rose, 2006). Sixty percent of males that are incarcerated are fathers (Arditti, Smock,

& Parkman, 2005), and 75 percent of women in prison have children (84% in federal prisons and 64% in state prison; Tuerk & Loper, 2006). Ninety percent of incarcerated fathers report that their children remain with their mother (Tuerk & Loper, 2006). Most research focuses on how father (or male) incarceration influences marital/romantic relationships (Hairston, 1998; Maccoby, Dephner, & Mookin, 1990), parent-child relationships (Hairston, 1998) and child development (Day, Acock, Bahr, & Arditti, 2005; Hanlon, Carswell, & Rose,2006). Less research focuses on how father incarceration influences parenting relationships, such as coparenting support, and parenting behavior, such as parenting stress. Focusing on coparenting support and parenting stress is extremely important because 40-69 percent of men that are in jail have an average of two children (Hairston, 1998).

Coparenting is the relationship that parents negotiate roles, responsibilities, and contributions to their child (Margolin, Gordis, & John, 2001). Research on coparenting emerged from the divorce literature and its focus on parents' abilities to maintain cooperative parenting after marital dissolution (Ahrons, 1981; Hoffman, 1995; Maccoby, 1990). Divorced parents may find it difficult to agree on custodial arrangement. This lack of agreement may result in coparenting conflict over arrangement, visitation, and household rules. If parents hold hostility towards one another it is highly unlikely that an arrangement will be made (Maccoby, Dephner, & Mookin, 1990). Further, parents who engage in competitive parenting usually results in one parent having a less secure attachment with their child since the parenting style results in an alliance being formed with the child and other parent (Caldera & Lindsey, 2006). On the other hand, parents who engage in cooperative parenting and are able to agree on a residential arrangement for the child show higher levels of parental satisfaction. On average divorced fathers perceived their coparenting relationship as supportive and are satisfied with the quality of their coparental relationship when compared to mothers (Ahrons, 1981). Despite obtaining the satisfaction of being in control of their child's life and being able to interact daily with the child, custodial parents may experience resentful feelings as a result of being left to raise the child on their own and being left with all the parental responsibilities (Maccoby, Dephner, & Mookin, 1990). This can be especially true in situations where one of the parents is incarcerated. Coparenting conflict and support can also have a profound influence on the child's development, with conflict placing children at risk of developing behavioral or psychological problems.

Parenting stress is defined as aversive psychological reaction to the demands of being a parent (Deater-Deckard, 1998). A major contribution to parenting stress is finances. When a parent is incarcerated the other parent struggles to fulfill their obligations and finds it difficult to maintain a steady income. As a result, a number of incarcerated families depend highly on public assistance (e.g., welfare or food stamps) (Arditti, Lambert-Shute, & Joest, 2003). The parenting strain that is experienced by the single parent can be minimized through a support system (Arditti, Lambert-Shute, & Joest, 2003).

The goals of this study were to examine how incarceration status influences coparenting support and parenting stress. The three overreaching aims were: (1) to investigate whether fathers or mothers report greater coparenting support, (2) to investigate whether fathers or mothers experience greater parenting stress, (3) to investigate whether father incarceration status influences the amount of coparenting support received and parenting stress experienced among four subpopulations of parents. The specific research questions and hypotheses are as follows:

Research Question 1a: Among a sample of fathers and mothers who reported on coparenting support, which group reported receiving greater coparenting support?

Research Question 1b: When comparing father and mother reports of coparenting support received, is there a significant difference?
Hypothesis 1: It is hypothesized that fathers will report significantly higher coparenting support than mothers.

Research Question 2a: Among a sample of father and mothers who reported on parenting stress, which group reported experiencing greater parenting stress?
Research Question 2b: When comparing father and mother reports of experiencing parenting stress, is there a significant difference?
Hypothesis 2: It is hypothesized that mothers will report significantly higher scores on parenting stress than fathers.

Research Question 3a: When comparing fathers who report that they have never been incarcerated to those who have experienced incarceration, which group of fathers report greater coparenting support received?
Research Question 3b: When comparing father reports of coparenting support received, is there a significant difference between fathers who have never been incarcerated to those that have?
Hypothesis 3: It is hypothesized that fathers who have never been incarcerated will report significantly higher levels of coparenting support received.

Research Question 4a: When comparing fathers who report that they have been incarcerated once to those who have been incarcerated two or more times, which group of fathers report greater coparenting support received?
Research Question 4b: When comparing father reports of coparenting support received, is there a significant difference between fathers who have been incarcerated once to those who have been incarcerated two or more times?
Hypothesis 4: It is hypothesized that there is no significant difference on the amount of coparenting support received between fathers who were incarcerated once and those who were two or more times.

Research Question 5a: Among mothers whose spouse/partner has never been incarcerated compared to those whose spouse/partner have been incarcerated, which group of mothers report greater coparenting support received?
Research Question 5b: When comparing mother reports of coparenting support received, is there a significant difference between mothers whose spouse/partner has never been incarcerated to those whose spouse/partner has been incarcerated?
Hypothesis 5: It is hypothesized that mothers who have never had a spouse/partner incarcerated report significantly higher coparenting support received.

Research Question 6a: Among mothers whose spouse/partner have been incarcerated once compared to mothers whose spouse/partner has been two or more times, which group of mothers report greater coparenting support received?
Research Question 6b: When comparing mother reports of coparenting support received, is there a significant difference between mothers whose spouse/partner has been incarcerated once to those mothers whose spouse/partner has been incarcerates two or more times?

Hypothesis 6: It is hypothesized that there is no significant difference on the amount of coparenting support received between mothers whose spouse/partner have been incarcerated once compared to mothers whose spouse/partner have been incarcerated two or more times.

Research Question7a: Among a sample of fathers and mothers who report that the father has never been incarcerated, which parent reports greater coparenting support received?
Research Question 7b: When comparing father and mother reports of coparenting support received, is there a significant difference between the two reports when the father has never experienced incarceration?
Hypothesis 7: It is hypothesized that fathers experience significantly greater coparenting support compared to mothers when the father has never experienced incarceration.

Research Question 8a: Among father and mothers who report that the father has been incarcerated, which parent reports greater coparenting support received?
Research Question 8b: When comparing father and mother reports of coparenting support received, is there a significant difference between the two reports when the father has experienced incarceration?
Hypothesis 8: It is hypothesized that fathers experience significantly greater coparenting support received compared to mothers when the father has experienced incarceration.

Research Question 9a: Among a sample of fathers and mothers who report that the father has been incarcerated once, which parent reports greater coparenting support received?
Research Question 9b: When comparing father and mother reports of coparenting support received, is there a significant difference between the two reports when the father has experienced incarceration once?
Hypothesis 9: It is hypothesized that fathers experience significantly greater coparenting support received compared to mothers when the father has experienced incarceration once.

Research Question 10a: Among father and mother reports who report that the father has been incarcerated two or more times, which parent reports greater coparenting support received?
Research Question 10b: When comparing father and mother reports of coparenting support received, is there a significant difference between the two reports when the father has experienced incarceration two or more times?
Hypothesis 10: It is hypothesized that fathers experience greater coparenting support received compared to mothers when the father has experienced incarceration two or more times.

Research Question11a: When comparing fathers who report that they have never been incarcerated to those who have experienced incarceration, which group of fathers report greater parenting stress?
Research Question 11b: When comparing father reports of parenting stress, is there a significant difference between fathers who have never been incarcerated to those that have?
Hypothesis 11: It is hypothesized that fathers who have been incarcerated will report significantly higher levels of parenting stress.

Research Question 12a: When comparing fathers who report that they have been incarcerated once to those who have been incarcerated two or more times, which group of fathers report greater parenting stress?
Research Question 12b: When comparing father reports of parenting stress, is there a significant difference between fathers who have been incarcerated once to those who have been incarcerated two or more times?
Hypothesis 12: It is hypothesized that there is no significant difference on the amount of parenting stress between fathers who were incarcerated once and those who were two or more times.

Research Question 13a: Among mothers whose spouse/partner has never been incarcerated compared to those whose spouse/partner have been incarcerated, which group of mothers report greater parenting stress?
Research Question 13b: When comparing mother reports of parenting stress, is there a significant difference between mothers whose spouse/partner has never been incarcerated to those whose spouse/partner has been incarcerated?
Hypothesis 13: It is hypothesized that there is no significant difference on the amount of parenting stress between mothers whose spouse/partner have never been incarcerated compared to mothers whose spouse/ partner have been incarcerated.

Research Question 14a: Among mothers whose spouse/partner have been incarcerated once compared to mothers whose spouse/partner has been two or more times, which group of mothers report greater parenting stress?
Research Question 14b: When comparing mother reports of parenting stress, is there a significant difference between mothers whose spouse/partner have been incarcerated once to those mothers whose spouse/partner have been incarcerated two or more times?
Hypothesis 14: It is hypothesized that there is no significant difference regarding parenting stress between mothers whose spouse/partner have been incarcerated once compared to mothers whose spouse/partner have been incarcerated two or more times.

Research Question15a: Among a sample of fathers and mothers who report that the father has never been incarcerated, which parent reports greater parenting stress?
Research Question 15b: When comparing father and mother reports of parenting stress, is there a significant difference between the two reports when the father has never experienced incarceration?
Hypothesis 15: It is hypothesized that mothers experience significantly greater parenting stress compared to fathers when the father has never experienced incarceration.

Research Question 16a: Among father and mothers who report that the father has been incarcerated, which parent reports greater parenting stress?
Research Question 16b: When comparing father and mother reports of parenting stress, is there a significant difference between the two reports when the father has experienced incarceration?
Hypothesis 16: It is hypothesized that there is no significant difference regarding parenting stress between fathers and mothers when the father has experienced incarceration.

Research Question 17a: Among a sample of fathers and mothers who report that the father has been incarcerated once, which parent reports greater parenting stress?
Research Question 17b: When comparing father and mother reports of parenting stress, is there a significant difference between the two reports when the father has experienced incarceration once?
Hypothesis 17: It is hypothesized that there is no significant difference regarding parenting stress between mothers and fathers when the father has experienced incarceration once.

Research Question 18a: Among father and mother reports who report that the father has been incarcerated two or more times, which parent reports greater parenting stress?
Research Question 18b: When comparing father and mother reports of parenting stress, is there a significant difference between the two reports when the father has experienced incarceration two or more times?
Hypothesis 18: It is hypothesized that there is no significant difference regarding parenting stress between mothers and fathers when the father has experienced incarceration two or more times.

Methods

Data Set. The data was drawn from The Fragile Families and Child Wellbeing (FFCW) Study. FFCW is a national longitudinal study, which follows a disadvantaged urban cohort of 4,898 parents and their children. This study takes place in twenty U.S. cities with populations exceeding 200,000. The baseline data in this study was collected between 1998 and 2000. Mothers and fathers were interviewed separately within 24 hours of their child's birth (1,186 marital births and 3,712 nonmarital births) and again at ages 1,3, and 5 years from the child's birth. For further information on sample and design of the study please see Reichman, Teitler, Garfinkel, and McLanahan (Reichman, Teitler, Garfinkel, & McLanahan, 2001).

The analysis sample was selected based on families who had complete data on father's incarceration at all four waves of data collection (1400 cases excluded). Of this subsample, we excluded fathers or mothers who did not have complete information on the independent variables (n=1152) and the covariates (n=338). The analyses sample consists of 2008 families.

Dependent Variables

Coparenting Support. Fathers and mothers responded individually to the extent in which they felt supported in the parenting role by the other parent using a 1= *always* to 3= *never scale* (e.g., "How often does [your partner] support you in the way you want to raise your child?"). Items were reverse coded and summed to create a composite score representing higher coparenting support at the fourth data collection point (i.e. Year 5 of the child) data collection point (α_F= .80, α=$_M$ .89).

Parenting Stress. Fathers and mothers reported individually on 4 items describing parenting stress on a 1= *strongly agree* to 4= *strongly disagree* scale (e.g., "I feel trapped by my responsibilities as a parent to the focal child"). Items were reverse coded and summed to create a composite score to represent greater parenting stress (α_F= .65, α_M= .66).

Independent Variable

Incarceration History. To offset the possibility of underreporting and under sampling father's incarceration status, I employed measures created by the FFCW project. At each wave of data collection, a father is coded as experiencing incarceration if either the father or mother reported that the father had spent time in jail. Based on this information, items were sum to create a composite measure indicating the number of times a father was incarcerated during the data collection. The use of both parents' reports of incarceration has been used by others (Swisher & Waller, 2008; Western, Lopoo, & McLanahan, 2004).

Covariates. Variables capturing father, mother, and household characteristics that relates to incarceration and coparenting support and parenting stress were included for descriptive purposes (Appendix Table 1). Father's and mother's reported their age (in years), education (1=High School degree or more; 0=Less than high school diploma), employment (number of weeks employed in the past year), and race (1=Non-Hispanic White; 2=Non-Hispanic Black; 3=Hispanic; 4=Other race). Household characteristics were reported by the mother and consisted of marital status at birth (1=Mother is married to biological father; 2=Mother is cohabitating with biological father; 3=Mother is not living with the biological father, but is in a relationship with the biological father; 4=Mother has no relationship with the biological father), family structure over the first 5 years of the child's life (1=Stable married to biological father; 2=Stable cohabitating with biological farther; 3=Stable single; 4=Union formation with biological father; 5=Union dissolve with biological father; 6=Unstable relationship with biological father), poverty status (1=less than 100% of Federal Poverty Line (FPL); 2=100-299% of FPL; 3=300% of FPL), number of children in the household, grandparent residing is in the household(1=*yes*; 0=*no*), father has nonresident children(1=*yes*; 0= *no*), and mother has nonresident children(1= *yes*; 0= *no*).

Analytic Strategy. STATA 11.0 was used to conduct (1) descriptive statistics and (2) mean differences. To estimate the answers to research questions 1a -18a means and standard deviations were calculated from a sample of fathers and mothers. A two-sample, mean comparison t-test was used to estimate the mean differences in research questions1b, 2b, 7b, 8b, 9b, 10b, 15b, 16b, 17b, and 18b (Aim 1, 2, and 3). A one-way ANOVA was used to estimate the mean differences in research questions 3b, 4b, 5b, 6b, 11b, 12b, 13b, and 14b (Aim 3).

Results

Table 1, 2, 3, and Appendix Table 1 presents means and standard deviations of independent and dependent variables, and covariaties. The independent variable included incarceration (Table 1). Fathers who have never experienced incarceration accounted for 93 percent of the full sample and fathers who have experienced incarceration accounted for 7 percent of the full sample.

The covariates included father, mothers, and household characteristics (Appendix Table 1). On average fathers' were 28 years of age (*sd*= 7.12) mothers were three years younger (mean= 25.96 with a *sd*= 6.07). Approximately three quarters of the fathers (73 percent) and mothers (72 percent) obtained a high school education or more. Fathers reported 43 weeks of employment in the past year. Forty-four percent of fathers are Non-Hispanic Black, 26 percent

Hispanic, 25 percent Non-Hispanic White, and 3 percent other race. Forty-two percent of mothers are Non-Hispanic Black, 27 percent Non-Hispanic White, 25 percent Hispanic, and 4 percent other race. At the time of the child's birth, 38 percent of mothers were cohabitating with the biological father, 35 percent were married to the biological father, 20 percent were in a relationship with the biological father but not living together, and 4 percent had no relationship with the biological father. Over the first five years of the child's life, 31 percent of mothers were in a stable marriage with the biological father, 18 percent formed a union with biological father (i.e. formed a marriage or cohabiting relationship with the biological father), 15 percent dissolved a union with biological father, 14 percent had an unstable relationship with the biological father, 10 percent were stably single, and 9 percent were stably cohabitating with the biological father. Twenty-eight percent of families were below the Federal Poverty Line (FPL), 40 percent ranged from 100-299 percent of the FPL, and 31 percent were at 300 percent FPL. On average there were 2.49 children in the household and 9 percent of mothers reported that a grandparent lived in the household. Thirty percent of fathers reported having nonresident children, while 31 percent of mothers reported having nonresident children.

To address aim one, a paired sample T-test was conducted to determine whether a mean difference exits in father and mother reports of coparenting support (Table 2). The mean of father reports is 2.68 (*sd*= .36) and the mean for mother's reports is 2.57 (*sd*=. 45). A significant difference was found in father reports of coparenting support when compared to mothers ($t(2007) = 10.8$, $p < .001$), indicating that fathers report higher levels of coparenting support.

To address aim two, a paired sample T-test was calculated to determine whether a mean difference in father and mother reports of parenting stress exists (Table 3). The mean of father reports is 2.01 (*sd*= .69) and the mean for mother reports is 2.15 *(sd*= .65). A significant difference was found in mother reports of parenting stress when compared to fathers ($t(2007) = -7.29$, $p < .001$). This indicates that mothers report higher levels of parenting stress.

To address aim three, a series of one-way ANOVAs were conducted to make comparisons among fathers (Tables 4a and 5a) and to make comparisons among mothers (Tables 4b and 5b). The first comparison consisted of comparing levels of coparenting support among fathers. In Table 4a, a significant mean difference was found between fathers who have never been incarcerated compared to those who have experienced incarceration ($F(1, 2006) = 8.43$, $p < .01$). Fathers who had never been incarcerated (*m*= 2.69, *sd*= .36) reported higher rates of coparenting support than fathers who had experienced incarceration (*m*= 2.61, *sd*= .36). When comparing coparenting support between fathers who experienced incarceration once to those who experienced incarceration two or more times, no significant difference was found ($F(1, 138) = 0.22$, $p > .05$) on the amount of coparenting support received.

Table 4b focuses on mother reports of coparenting support. A significant difference was found when comparing levels of coparenting support between mothers who have never had a spouse/partner incarcerated to those whose spouse/partner have been incarcerated ($F(1, 2006) = 8.70$, $p < .01$). Mothers whose spouse/partner have never been incarcerated (*m*= 2.59, *sd*= .44) reported higher rates of coparenting support than mothers whose spouse/partner experienced incarceration (*m*= 2.36, *sd*= .55). No significant difference was found on the amount of coparenting support between mothers whose spouse/partner have been incarcerated once compared to those mothers whose spouse/partner had been incarcerated two or more times ($F(1, 138) = 0.12$ $p > .05$).

In addition to conducting one-way ANOVAs to address aim three, paired sample T-tests were performed to compare subgroups of fathers and mothers on coparenting support (Table 4c)

and parenting stress (Table 5c). In Table 4c, among families where the father had never experienced incarceration, fathers reported greater levels of coparenting support (m = 2.69, sd= .36) compared to mothers (m = 2.59, sd= .44) (t(1867) = 9.66, p < .001). A significant difference in coparenting support was found among families where the father had never experienced incarceration. Results indicate that fathers reported greater levels of coparenting support (m= 2.61, sd= .36) compared to mothers (m= 2.36, sd= .55) (t(139) = 5.46, p < .001). Coparenting mean differences were conducted among fathers and mothers where fathers had experienced incarceration once. A significant difference was found in father reports of coparenting support (m = 2.61, sd= .35) compared to mothers (m = 2.41, sd= .55) (t(99) = 3.64, p < .001) . This suggests that fathers report higher levels of coparenting support compared to mothers. Last, among families where the father had experienced incarceration two or more times, mean differences were conducted between father and mother reports of coparenting support. Fathers reported significantly high levels of coparenting support (m= 2.62, sd= .39) compared to mothers (m= 2.23, sd= .54) (t(39) = 4.51, p <.001).

Table 5a focuses on comparing reports of parenting stress among fathers. A one-way ANOVA was used to compare levels of parenting stress between fathers who have never been incarcerated to those who have experienced incarceration. The analysis revealed that fathers who have experienced incarceration reported significant higher levels of parenting stress (m= 2.21, sd= .68) compared to fathers who have never been incarcerated (m= 2.0, sd= .68) (F(1, 2006)= 12.08, p< .001). No significant difference in reports of parenting stress was found between fathers who had experienced incarceration once to those who had experienced incarceration two or more times (F(1, 138) = 1.05, p > .05).

Table 5b focuses on mother reports of parenting stress. A one-way ANOVA was used to compare levels of parenting stress between mothers whose spouse/partner have never been incarcerated compared to those mothers whose spouse/partner have experienced incarceration. No significant difference was found (F(1, 2006) = 3.15, p > .05) on the amount of parenting stress experienced between the two subgroup of mothers. Further, no significant difference was found (F(1, 138) = 0.81, p > .05) on the amount of parenting stress received between mothers whose spouse/partner have been incarcerated once compared to those mothers whose spouse/partner had been incarcerated two or more times.

A series of paired sample T-test were calculated to compare subgroups of fathers and mothers on parenting stress (Table 5c). Among families where the father has not experienced incarceration, fathers reported significantly less parenting stress (m= 1.99, sd= .68) compared to mothers (m=2.15, sd= .65) (t(1867) = -7.48, p <.05). Among families where the father has experienced incarceration, no significant difference was found in father reports of parenting stress (m=2.20, sd= .68) compared to mothers (m=2.25, sd= .67) (t(139) = -0.52, p >.05). Among families where the father has been incarcerated, once, no significant difference was found in father reports of parenting stress (m=2.17, sd= .68) compared to mothers (m=2.28, sd= .71) (t(99) = -1.10, p >.05). Last, no significant difference was found in father reports of parenting stress (m=2.30, sd= .66) compared to mothers (m=2.16, sd= .57) (t (39) = 1.00, p >.05) among families where the father has been incarcerated two or more times.

Conclusion

The results from this study illustrated how father incarceration is associated with how fathers and mothers rate the coparenting support they receive and the amount of parenting stress they experience. Overall, fathers reported higher levels of coparenting support and lower levels of parenting stress compared to mothers. Among the four subsamples of parents, fathers reported greater coparenting support compared to mothers regardless of incarceration status. Among parents where the father has not experienced incarceration, mothers reported greater parenting stress compared to fathers. However, incarceration status influenced the amount of coparenting support received and parental stress experienced when comparing reports among a sample of fathers and reports among a sample of mothers. Among fathers, fathers who had experienced incarceration reported less coparenting support and more parenting stress compared to fathers who never experienced incarceration. Among mothers, mothers whose spouse/partner had experienced incarceration reported less coparenting support compared to mothers whose spouse/partner had never experienced incarceration.

Parenting programs are offered in many prisons with the goal of enhancing the relationship between the parent and child during and after incarceration. Current interventions focus on providing the incarcerated parent with education programs to assist them in gaining healthy interactions with their children. Although education programs differ among institutions many include parenting classes, programs allowing the inmate and child to live together, relationship-building activities, parent counseling, and post-release assistance (Loper & Tuerk, 2006). Future interventions should continue to focus on assisting fathers to assume parenting roles thereby increasing the mother's levels of coparenting support and decreasing their levels of stress. In order for future interventions to be proficient, trained professionals should assist fathers in parenting skills and role-playing to gain hands on experience in child-rearing through weekly sessions throughout their sentence. After the father is released, weekly sessions should continue with both parents.

There were several limitations to this study. The first limitation was the location from which the sample was selected. Being that the majority of the sample is urban, there was a lack of information on those who live in rural areas. Individuals who live in rural areas also need assistance; however, they may be unable to receive adequate assistance as a result of limited (or a lack of) parenting support programs in rural areas. Second, participants in the survey self-reported the father's incarceration history. Thus, self-reporting bias may be present as participants in surveys have a tendency to present themselves as favorable as possible, and therefore, are less likely to state that they have experienced incarceration. The use of administrative data may present more accurate reports of incarceration history. The third limitation to this study was self-selection into the study. Because the data is taken from a longitudinal study, attrition is present. Thus, families who have faced significant hardships, such as fathers experiencing multiple incidents of incarceration, probably have dropped out of the study. The results are more biased towards families who have not experienced incarceration and it is likely that the results are also biased towards families who have more financial and emotional resources.

Future research should explore how mother's incarceration influences coparenting support and parenting stress among both parents and grandparents. This is important to observe since grandparents are usually the caretakers of children when the mother is incarcerated. Future research should also focus on other families that experience separation from a family member,

such as military families. Being separated is the biggest dissatisfaction spouse/partners have with military life. Separation can cause coparenting conflict because the deployed parent is forced to place their military career ahead of quality family time. This also results in the civilian partner being responsible for all parental duties, which can result in experiencing parenting stress. Thus, research focused on military families could influence the research on families who experience incarceration and vice versa.

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Table 1: Percentage of Fathers With and Without Incarceration History (N = 2008)

Never In Incarcerated	93%
Incarcerated during the lifetime of the focal child in the study	7%
Incarcerated during 1 Data Collection Point	5.00%
Incarcerated during 2 Data Collection Point	1.50%
Incarcerated during 3 Data Collection Point	0.50%
Incarcerated during 4 Data Collection Point	0.00%

Table 2: Means and (Standard Deviations) of Father and Mother Reports of Coparenting Support for the Full Sample (N= 2008)

	Father Report[a]	Mother Report[b]	Range
" When M/F is with the child, she/he acts like the M/F you want"	2.70 (.52)	2.55 *** (.62)	1-3
"You can trust M/F to take care of the child"	2.90 (.35)	2.80 *** (.48)	1-3
"She/He respects the rules and schedules you make"	2.70 (.55)	2.58 *** (.63)	1-3
"She/He supports way you want to raise child"	2.68 (.57)	2.59 *** (.61)	1-3
"You can talk with M/F about problems with raising child"	2.75 (.54)	2.63 *** (.63)	1-3
"You can count on M/F to look after child for a few hours"	2.84 (.47)	2.58 *** (.70)	1-3
"You respect M's/ F's wishes about how child should be raised"	2.76 (.49)	2.55 *** (.64)	1-3
"You are critical of the things M/F does"	2.13 (.84)	2.27 *** (.78)	1-3
TOTAL Items	2.68 (.36)	2.57 *** (.45)	1-3
All 8 Items (Cronbach's alpha)	0.80	0.89	---

[a] Father report= Father reports on mother's supportive role (i.e. M) as a parent
[b] Mother report= Mother reports on father's supportive role (i.e. F) as a parent
*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 3: Means and (Standard Deviations) of Father and Mother Reports of Parenting Stress for the Full Sample (N=2008)

	Father Report[a]	Mother Report[b]	Range
"Being a parent is harder than I thought it would be."	2.69 (1.04)	2.86 *** (.98)	1-4
"I feel trapped by my responsibilities as a parent."	1.50 (.82)	1.54 *** (.82)	1-4
"I find that taking care of my child(ren) is much more work than pleasure."	1.75 (1.00)	1.67 *** (.92)	1-4
"I often feel tired, worn out, or exhausted from raising a family."	2.09 (1.03)	2.54 *** (1.00)	1-4
TOTAL Items	2.01 (.69)	2.15 *** (.65)	1-4
All 4 Items (Cronbach's alpha)	0.64	0.65	---

[a] Father report= Father reports on his own behavior
[b] Mother report= Mother reports on her own behavior
*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 4a: Means and (Standard Deviations) of Father's Report of Coparenting Support in Relation to his Experience with Incarceration

Mean of Coparenting Support				
	Father Report[a]			
	Father Never Incarcerated (n = 1868)	Father has Incarceration History (n = 140)	Father Incarcerated Once (n=100)	Father Incarcerated Two or More Times (n = 40)
When M is with the child, she acts like the M you want for your child	2.71 (.52)	2.58** (.57)	2.60 (.57)	2.55 (.55)
"You can trust M to take care of the child"	2.90 (.35)	2.87 (.40)	2.87 (.40)	2.90 (.44)
"M respects the rules and schedules you make"	2.70 (.55)	2.63 (.62)	2.64 (.63)	2.62 (.63)
"M supports way you want to raise child"	2.68 (.57)	2.59 (.64)	2.62 (.63)	2.52 (.68)
"You can talk with M about problems with raising child"	2.75 (.54)	2.71 (.52)	2.70 (.50)	2.75 (.59)
"You can count on M to look after child for a few hours"	2.84 (.47)	2.85 (.44)	2.87 (.42)	2.80 (.52)
"Respect M's wishes about how child should be raised"	2.76 (.49)	2.69 (.50)	2.69 (.51)	2.70 (.52)
"You are critical of the things M does"	2.14 (.84)	1.95* (.86)	1.88 (.88)	2.15 (.80)
All 8 Items (Composite Score)	2.69 (.36)	2.61* (.36)	2.60 (.35)	2.62 (.40)

[a] Father report= Father reports on mother's supportive role (i.e. M) as a parent
*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 4b: Means and (Standard Deviations) of Mother's Report of Coparenting Support in Relation to Father's Experience with Incarceration

Mean of Coparenting Support				
	Mother Report			
	Father Never Incarcerated (n = 1868)	Father has Incarceration History (n = 140)	Father Incarcerated Once (n=100)	Father Incarcerated Two or More times (n = 40)
When F is with the child, he acts like the F you want for your child	2.56 (.62)	2.40** (.69)	2.42 (.70)	2.37 (.67)
"You can trust F to take care of the child"	2.82 (.46)	2.66*** (.65)	2.69 (.63)	2.60 (.71)
"F respects the rules and schedules you make"	2.60 (.63)	2.41** (.74)	2.48 (.73)	2.25 (.74)
"F supports way you want to raise child"	2.61 (.60)	2.35*** (.75)	2.40 (.74)	2.22 (.77)
"You can talk with F about problems with raising child"	2.65 (.62)	2.38*** (.80)	2.44 (.78)	2.25 (.81)
"You can count on F to look after child for a few hours"	2.60 (.69)	2.30*** (.84)	2.45 (.78)	1.95** (.87)
"Respect F's wishes about how child should be raised"	2.57 (.63)	2.30*** (.81)	2.36 (.80)	2.15 (.83)
"You are critical of the things F does"	2.29 (.77)	2.07** (.83)	2.08 (.84)	2.07 (.83)
All 8 Items (Composite Score)	2.59 (.44)	2.36*** (.55)	2.41 (.55)	2.23 (.54)

[a] Mother report= Mother reports on father's supportive role (i.e. F) as a parent
*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 4c: Means and (Standard Deviations) of Father and Mother's Report of Coparenting Support in Relation to Father's Experience with Incarceration

	Mean of Coparenting Support							
	Father Never Incarcerated (n=1868)		Father has Incarceration History (n=140)		Father Incarcerated Once (n=100)		Father Incarcerated 2 or More Time (n=40)	
	Father Report[a]	Mother Report[b]	Father Report[a]	Mother Report[b]	Father Report[a]	Mother Report[b]	Father Report[a]	Mother Report[b]
When M/F is with the child, she/he acts like the M/F you want for your child	2.71 (.52)	2.56*** (.62)	2.58 (.56)	2.40* (.69)	2.60 (.57)	2.42* (.70)	2.55 (.55)	2.37 (.67)
"You can trust M/F to take care of the child"	2.90 (.35)	2.82*** (.46)	2.87 (.41)	2.66*** (.65)	2.87 (.39)	2.69** (.63)	2.90 (.44)	2.60 * (.71)
"M/F respects the rules and schedules you make"	2.70 (.55)	2.60*** (.63)	2.63 (.62)	2.41** (.74)	2.64 (.63)	2.48 (.73)	2.62 (.63)	2.25** (.74)
"M/F supports way you want to raise child"	2.68 (.56)	2.61*** (.60)	2.59 (.64)	2.35 *** (.75)	2.62 (.63)	2.40* (.74)	2.52 (.68)	2.22 * (.77)
"You can talk with M/F about problems with raising child"	2.75 (.54)	2.65*** (.62)	2.71 (.53)	2.38*** (.79)	2.70 (.50)	2.44** (.78)	2.75 (.59)	2.25 *** (.81)
"You can count on M/F to look after child for a few hours"	2.84 (.47)	2.60*** (.69)	2.85 (.45)	2.30*** (.84)	2.87 (.42)	2.45*** (.78)	2.80 (.52)	1.95*** (.87)
"Respect M's/F's wishes about how child should be raised"	2.76 (.48)	2.57*** (.63)	2.69 (.51)	2.30*** (.81)	2.69 (.51)	2.36*** (.80)	2.70 (.52)	2.15*** (.83)

"You are critical of the things M/F does"	2.14 (.84)	2.29*** (.77)	1.95 (.86)	2.07 (.83)	1.88 (.88)	2.08 (.84)	2.15 (.80)	2.07 (.83)
All 8 Items (Composite Score)	2.69 (.36)	2.59*** (.44)	2.61 (.36)	2.36*** (.55)	2.61 (.35)	2.41*** (.55)	2.62 (.39)	2.23*** (.54)

[a] Father report= Father reports on mother's supportive role (i.e. M) as a parent
[b] Mother report= Mother reports on father's supportive role (i.e. F) as a parent
*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 5a: Means and (Standard Deviations) of Father's Report of Parenting Stress in Relation to his Experience with Incarceration

	Mean of Parenting Stress			
	Father Report[a]			
	Father Never Incarcerated (n = 1868)	Father has Incarceration History (n = 140)	Father Incarcerated Once (n=100)	Father Incarcerated Two or More Times (n = 40)
"Being a parent is harder than I thought it would be."	2.67 (1.05)	3.00*** (.96)	2.98 (.94)	3.07 (1.02)
"I feel trapped by my responsibilities as a parent."	1.49 (.82)	1.68** (.93)	1.68 (.95)	1.70 (.88)
"I find that taking care of my child(ren) is much more work than pleasure."	1.74 (1.00)	1.96* (1.09)	1.87 (1.05)	2.17 (1.17)
"I often feel tired, worn out, or exhausted from raising a family."	2.08 (1.03)	2.18 (1.05)	2.15 (1.04)	2.25 (1.08)
All 4 Items (Composite Score)	2.00 (.68)	2.21** (.68)	2.17 (.68)	2.30 (.66)

[a] Father report= Father reports on his own behavior

*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 5b: Means and (Standard Deviations) of Mother's Report of Parenting Stress in Relation to Father's Experience with Incarceration

	Mean of Parenting Stress			
	Mother Report[a]			
	Father Never Incarcerated (n = 1868)	Father has Incarceration History (n = 140)	Father Incarcerated Once (n=100)	Father Incarcerated Two or More Times (n = 40)
"Being a parent is harder than I thought it would be."	2.85 (.97)	2.95 (1.02)	2.93 (1.03)	3.02 (1.02)
"I feel trapped by my responsibilities as a parent."	1.54 (.83)	1.52 (.77)	1.59 (.80)	1.37 (.67)
"I find that taking care of my child(ren) is much more work than pleasure."	1.66 (.92)	1.80 (1.06)	1.87 (1.11)	1.65 (.95)
"I often feel tired, worn out, or exhausted from raising a family."	2.52 (1.00)	2.70* (1.06)	2.74 (1.08)	2.62 (1.03)
All 4 Items (Composite Score)	2.14 (.65)	2.25 (.67)	2.28 (.71)	2.16 (.57)

[a] Mother report= Mother reports on her own behavior

*** $p < .001$, ** $p < .01$, * $p < .05$.

Table 5c: Means and (Standard Deviations) of Father and Mother's Report of Parenting Stress in Relation to Father's Experience with Incarceration

	Mean of Parenting Stress							
	Father Never Incarcerated (n=1868)		Father has Incarceration History (n = 140)		Father Incarcerated Once (n=100)		Father Incarcerated 2 or More Time (n=40)	
	Father Report[a]	Mother Report[b]	Father Report[a]	Mother Report[b]	Father Report[a]	Mother Report[b]	Father Report[a]	Mother Report[b]
"Being a parent is harder than I thought it would be."	2.67 (1.05)	2.85*** (.97)	3.00 (.96)	2.95 (1.02)	2.98 (.94)	2.93 (1.03)	3.07 (1.02)	3.02 (1.02)
"I feel trapped by my responsibilities as a parent."	1.49 (.82)	1.54 (.83)	1.68 (.93)	1.52 (.77)	1.68 (.95)	1.59 (.80)	1.70 (.88)	1.37* (.67)
"I find that taking care of my child(ren) is much more work than pleasure."	1.74 (1.00)	1.66** (.92)	1.95 (1.09)	1.80 (1.06)	1.87 (1.05)	1.87 (1.11)	2.17 (1.17)	1.65 (.95)
"I often feel tired, worn out, or exhausted from raising a family."	2.08 (1.03)	2.52*** (1.00)	2.17 (1.05)	2.70*** (1.06)	2.15 (1.04)	2.74*** (1.08)	2.25 (1.08)	2.62 (1.03)
All 4 Items (Composite Score)	1.99 (.68)	2.15*** (.68)	2.20 (.68)	2.25 (.67)	2.17 (.68)	2.28 (.71)	2.30 (.66)	2.16 (.57)

[a] Father report= Father reports on his own behavior
[b] Mother report= Mother reports on her own behavior
*** $p < .001$, ** $p < .01$, * $p < .05$.

Appendix Table 1 Percentage or Mean and (Standard Deviation) of the Characteristics of the Study Sample (n = 2008)

Father Characteristics	
Age	28.46 (7.12)
High School Education	73 %
Employment (weeks)	42.73 (14.78)
Race	
Non-Hispanic White	26%
Non-Hispanic Black	45%
Hispanic	26%
Other Race	4%
Mother and Household Characteristics	
Age	25.96 (6.07)
High School Education	72%
Employment	25.46 (21.70)
Race	
Non-Hispanic White	27%
Non-Hispanic Black	43%
Hispanic	26%
Other Race	4%
Marital Status at Birth	
Married to Biological Father	36%
Cohabiting with Biological Father	38%
Mother in a Relationship with Biological Father (not cohab)	21%
No Relationship with Biological Father	5%
Family Structure -first 5 years of the child's life	
Stable Married to Biological Father	32%
Stable Cohabition with Biological Father	9%
Stable single	11%
Union Formation with Biological Father	19%
Union Dissolve with Biological Father	15%
Unstable Relationship with Biological Father	14%
Poverty Status	
< 100% of FPL	29%
100 – 299% of FPL	40%
300% of FPL	31%
# of Children in the Household	2.49 (1.27)
Grandparents in the Household	10%
Father has Nonresident Children	30%
Mother has Nonresident Children	31%

Language Difference, Not Language Disorder

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Abstract

When evaluating speech and language skills in children with SLI, children who speak African American English (AAE) are often evaluated by clinicians who speak Standard American English (SAE). Since AAE is a dialect that is different from SAE, there is a chance of inaccurate estimates of language in children who speak AAE. The results showed that children's performance on a phonological working memory task was an unbiased indicator of language disorder, but performance on a lexical access task was mainly influenced by dialect use. Clinicians should use a phonological working memory task when evaluating in children who speak AAE.

Introduction

The purpose of this study is to examine the difference in language difference and disorder. Language can be defined as the words, their pronunciation, and the methods of combining them used and understood by a community. One is surrounded by language even prior to birth. Language is universal, and is vital to communication. Language can define ones personal style, and also a variation of one's culture. There are numerous languages, and within each language there are numerous dialects as well.

A language disorder is a significant discrepancy in language skills compared to the normative standards for a client's age or developmental level (Paul, 2004). "A language difference is a rule governed language style that deviates in some way from the standard usage of the main stream culture" (Paul, 2004, p. 166). A dialect refers to a variation in language that is characteristic of a particular group of the language's speakers. According to Washington and Craig (2004) "misclassification based upon inappropriate interpretation of cultural interaction and communication styles may contribute to difficulty with detection of true language problems" (p. 330). The misdiagnosis of these language differences can have lasting effects on a child. Craig and Washington (2004) suggest clinicians use language screening to distinguish language difference or language disorder. These authors state that African American children compose 30.5% of children served for developmental delay (Craig & Washington, 2004, p.330). This

overrepresentation of African Americans diagnosed with language disorders is an indicator that there needs to be an efficient method of identifying these disabilities.

The true origin of African American English is not known (Green, 2000). Some researchers believe AAE originated from African slaves, Caribbean creoles, or Standard English forms. African American English has also been called Ebonics, African American Vernacular English, and Negro Dialect. For the purpose of this study the terminology will be African American English (AAE). Also Standard American English (SAE) is the variety of the English language that is generally used in professional writing in the United States and taught in American schools. Despite its ambiguous origin, AAE is a unique non-standard dialect.

African American English is a dialect that has unique phonological, morphological, syntactic, semantic, and lexical patterns. AAE phonology, which is the sound system associated the phonological representations of language in AAE, differs from SAE. Some differences include: final consonant deletion of sounds, devoicing stops, prosody, and liquid vocalizations. Examples of final consonant deletion are fast to [fas], band to [baen], bold to [bol] (Green, 2000).

One of the distinguishing components between AAE and SAE is the difference in use of morphological features. Morphological features are the smallest unit of language that can affect the meaning of a word. Some morphological features include: marking past tense, verbal s, and generative and habitual markings. In AAE, the past tense marking is not a significant difference in the simple past and past participles (Green, 2000). Dependent upon the verb, the past tense ends in either the /en/ or /ed/ form. The verbal s structure refers to the use of /s/ in both the singular and plural contexts, and a third person singular object. An example of the singular object structure is as follows: "Well, that's the way it bes" (Green, 2002, p. 101).

According to Green (2004), "Many of the well known features of AAE are from the syntactic component of the language system, the system defines the way words are put together to form sentences" (p. 34). The general public sometimes interprets AAE syntax as ungrammatical and ignorant. Syntactical structures such as the verbal marker are, auxiliary be verbal markers, past bin, and negation is often expressed differently in AAE as compared to SAE. An example of auxiliary be used in AAE is "Jonny be good" (Green, 2000, p. 35). In SAE the syntactical structure would be as follows, "Johnny is a good person (Green, 2000, p. 35). Negation is often expressed differently in AAE as compared to SAE. An example of negation "Don't no game last all night long" (Green, 2000, p. 78)." "No game last all night" in SAE (Green, 2000, p.78).

The lexicon of AAE contributes to its diversity and is a unique quality of the dialect. Some lexicons may be found in both AAE and SAE. The difference would be in the semantics or meaning of the lexicon. Those who speak AAE may refer to a female as honey (Green, 2000, p. 28). In SAE, the word honey only refers to a type of sweetener. Also one word can have myriad definitions, in different contexts based upon class or demographics. The AAE lexicon structures are a key component of this language. It is often easier for speakers of AAE to be identified by their use of vocabulary not other language components.

There is a significant difference between a language disorder and a language difference (Paul, 2007). `A language difference does not equal a language disorder. There are numerous

language differences, including those that can be dependent on class, location, or ethnicity. The American culture is constantly changing, and SAE is not always the first language learned. Different environments and cultures have their own specific language. Many children are entering schools with a primary language that is not English. Some teachers and Speech Language Pathologists often misdiagnose their language difference as a disorder. According to Taylor (1986), "language disorders exist in a culturally or linguistically different environment (CLD) when the client language abilities are not equivalent to the norms in their environment and or community" (Paul, p. 177).

The task of determining a language difference or a language disorder can be difficult. According to Laing and Kamahi (2003) "The more diverse the population, the more likely it is that clinicians will encounter families from cultural, ethnic, and linguistic backgrounds different their own" (p. 44). Clinicians need to be aware of culturally and linguistically differences in the population. Laing and Kamahi (2004) argue that standard norm referenced tests should not be the only method evaluating children from diverse backgrounds. Standardized tests are known to be content and linguistically biased and have misappropriated representation in normative samples. Criterion based measures compare performance on a specific skill of the participants. Examples include measures of language samples, processing dependent measures, and dynamic assessment (Laing, Kamahi, 2003). Language samples present clear evidence of language skills of the participants. Processing dependent measures, which are not biased to prior knowledge, include nonword repetition (NWR;, Dollaghan & Campbell, 1998), Competing Language Processing Task (CLPT;, Gaulin & Campbel, 1994), and the Revised Token Task (RRT; Laing& Kamahi, McNeil & Prescott, 1978). According to Haynes and Rodekohr (2000), "the CLPT adequately differentiate between language disorders and typical developing participants without biasing again AAE speakers assessment" (pg. 267).

According to Weismer (2000), studies have shown that children with language impairment continue to perform significantly worse than normal language controls even when lexical feature of nonword stimuli have been adjusted to reduce word likeness (Dollaghan & Campbell, 1988; Edward & Lahney, 1998). They found no differences in responses children with or without language impairments. Minority children did not have differences in their performance on the processing measures such as nonword repetition. Dollaghan (1998) suggested that the nonword repetition processing task is a nonbiased language test (Weismer, p. 886). With nonword repetition task being suggested an unbiased test it can be a valuable assent for clinical use.

The purpose of this study was to investigate children's performance on four tasks, (1) a verbal working memory task, (2) a phonological working memory task, (3) a lexical access task, (4) word definition task; to evaluate the extent to which performance on these tasks reflects language difference or disorder.

Methods

The current study will consist of six eleven year old female participants. There were four African American participants and two Caucasian participants. Three of those participants were AAE speakers and three were SAE speakers. These children were students within the Madison, Wisconsin, metropolitan area schools. All participants qualified as having normal oral and motor speech functions and normal hearing. The participants included three AAE dialect users with a

language disorder, one AAE dialect user without a language disorder. Other participants included one SAE speaker with a language disorder, and one SAE typically developing. With this representative data set I systematically analyzed the effects of language disorder and dialect use on children's performance on the experimental tasks. This data was collected and stored onto audio files. The children with language disorders all received speech-language services in their schools. Clinical Evaluation of Language Fundamentals, Third Edition (CELF-3; Semel, Wiig & Secord, 1995) was used to assess the receptive and expressive language abilities. This standard language test was given to ensure that children with language impairments did in fact exhibit difficulties in language. The CELF-3 instructions for scoring AAE dialect features were followed in scoring dialect users performance.

Table 1. Participants Characteristics

Participants	Sex	Race	Age in Months	Language Status	Dialect	IQ SS	ELS	RLS
AAE-LI	Female	African American	11; 7	SLI	AAE	89	72	50
AAE-TY	Female	African American	11; 7	Typical	AAE	87	86	
AAE-L2	Female	African American	11; 2	Language Disorder	AEE	91	69	50
SAE-LI	Female	African American	11; 10	Language Disorder	SAE	87	53	53
SAE-L2	Female	Caucasian	11; 4	Language Disorder	SAE	98	65	80
SAE-TY	Female	Caucasian	11; 5	Typical	SAE	109	131	

Note: Participant characteristics: children's ages, race, dialect status, performance Intelligence Quotient (IQ) as measured by the Leiter International Performance Scale (Roid & Miller, 1997), Expressive Language Scale (ELS) and Receptive Language Scale (RLS) as measured by the Evaluation of Language Fundamentals, Third Edition (CELF-3;Semel, Wiig,& Secord, 1995).

Identification of the dialect users was essential to the study. The identification of the AAE speakers was determined by the data provided using the definition task. On the definition task, children were asked to explain meanings of words. Children's responses were audio recorded. The audio files were listened to two times each for each participant -to look for features of AAE or SAE dialect use. Appendix A lists the features of the three AAE dialect users produced. Appendix A also presents examples of the AAE features used by the participants.

Experimental Tasks

A gating task was used to access' children's lexical abilities. In the gating task, children listened to stimuli word in successive gates. There were 48 monosyllabic targets. The

participants were required to guess the stimulus based on the acoustical signals. The stimuli gates were presented at: 120s, 180s, 240s, 300s, 360s, 420s, 540s, 600s, 660s (Mainela-Arnold, Coady, Evans, 2008). Children's responses were audio recorded and transcribed orthographically; three variables were coded for each child. The variables were: (A) point of target first sound, the gate at which the child clearly produced a word with the target phoneme; (B) point of isolation where the child first correctly produced the target word; (C) point of acceptance, the gate after which the child did not change their guess of the correct word (Mainela-Arnold, Coady, Evans, 2008).

The Competing Language Processing Task (CLPT; Gaulin & Campbel, 1994) was used to assess children's verbal working memory. In the CLPT, participants listened to lists of sentences varying from one to six sentences per list. After each sentence, children answer yes or no to indicate if the sentence is false or correct. At the completion of each list, they are asked to repeat the last word of each sentence. The sentence consisted of three words, subject- verb - object, subject -auxiliary- main verb, and subject verb- modifier sentences. One's level of the working memory is based upon the maximum number of target words recall.

The word definition task was used to assess children's semantic skills (Mainela-Arnold, in press). In this task a word was presented to the participants, for example "What is a bath?" The children were told to explain the word as they would to a person who did not know what the word meant (Mainela- Arnold, in press). A practice trial was presented and the children responded appropriately. The words were in four clusters with 12 words in each. The four clusters were composed of three randomly chosen words. The stimuli were presented through head phones, and children were given as long as they needed to define the words. The responses were recorded on audio files, and orthographically transcribed (Mainela-Arnold, in press). The children's responses were coded using a system developed by Astell and Harley (2002) (Mainela-Arnold, in press). This system evaluates children's understanding of the meaning of the words (semantics), despite its language form.

Nonword Repetition was used as a measure of phonological memory. The task presented 16 nonword stimuli, one to four syllables in length. The phonemes were early acquired phonemes in infrequently occurring positions. Children were informed that they would hear made up words, and they had to repeat them as efficiently and quickly as possible. The task lasted for approximately one minute, and the repetitions were recorded for transcription (Mainela-Arnold, in press). The data was phonetically transcribed from the recordings of the experimental session and scored using a consensus method. The children's performance was assessed by two listeners and completed first –pass transcription then their results were compared to a third listener. The percent of phonemes correct was calculated as the number of targeted phonemes guessed correctly divided by total number or target phonemes (Mainela-Arnold, in press).

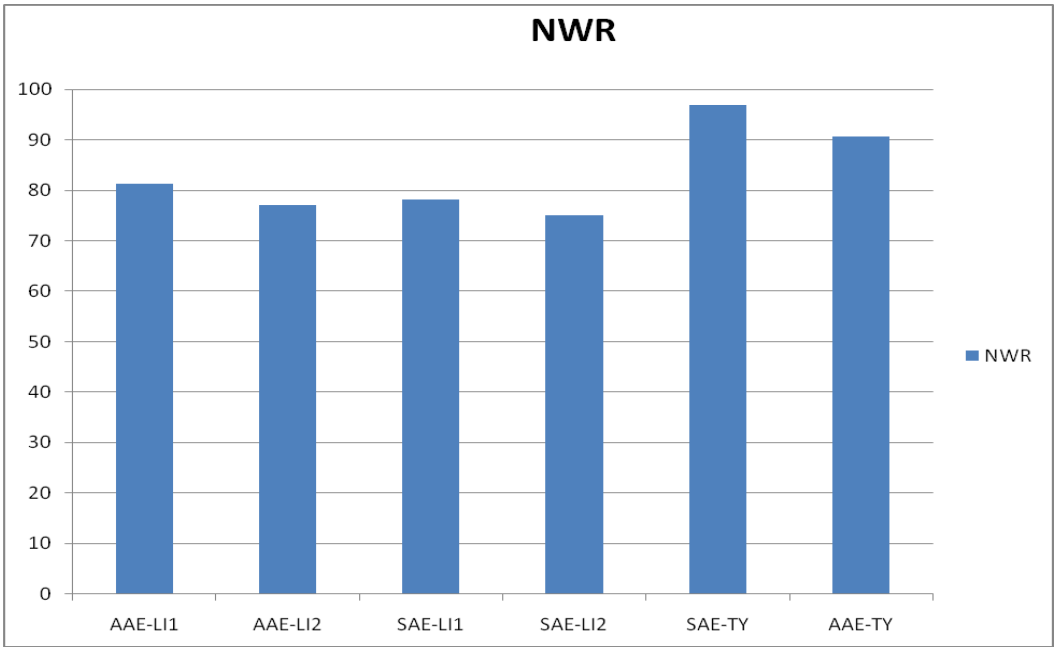
Results

In the current study, four experimental tasks – definition task, gating task, NWR, and CLPT – were given to examine what extent performance on them reflect language disorder and language difference.

The results of nonword repetition are displayed in Figure 1. Language impairment status had an impact on how many phonemes children were able to recall on the nonword repetition

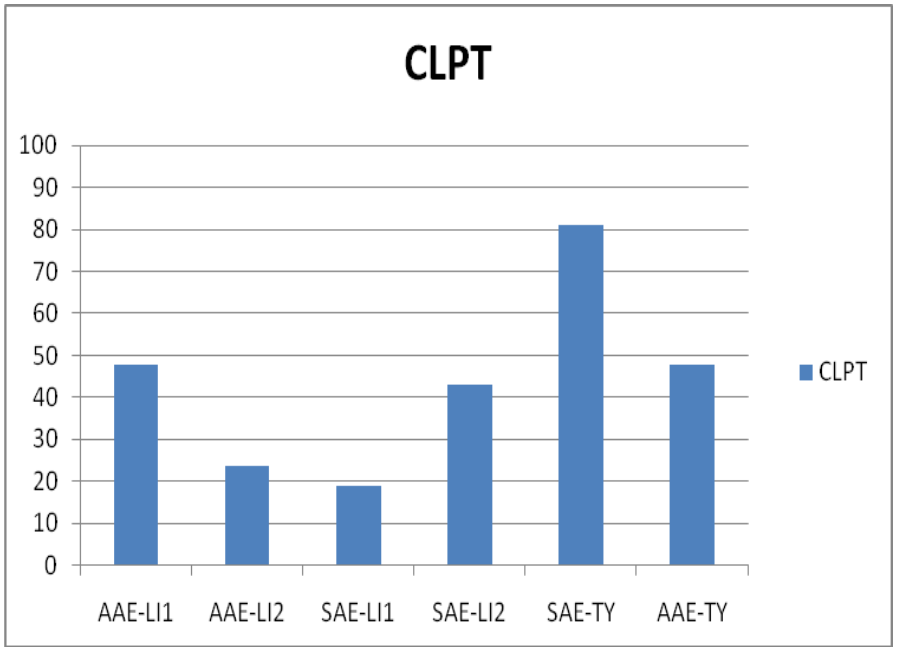
task. Children with typical development produced more phonemes correctly than children with language impairments. Dialect status did not affect the percent phonemes produced correctly. The AAE user with typical development produced as many phonemes correctly as the SAE user with typical development, and AAE users with language impairments produced as many phonemes correctly as the SAE users with language disorders.

Figure 1. Percent phonemes children repeated correctly on the nonword repetion task



The CLPT was given to measure participant's performance word memory task. The results of the CLPT are displayed in Figure. 2. Neither language impairment status, nor dialect status seemed to systematically account for how many words children recalled on the CLPT. An AAE user with typical language development recalled as many words as an AAE user and a SAE user with language impairments. The child who recalled most words and the child who recalled the fewest words were both SAE users.

Figure 2. Percent words children called on the CLPT Task.



The definition task findings are presented in Figure 3. In addition to the using the transcripts from the definition task for defining children's dialect use, children's word definitions were examined for the content that they conveyed. The content of children's word definitions did not systematically separate language disorder or language difference and the children with the highest and the lowest word definition scores were both SAE users. An AAE typical language participant is almost equal to the performance of an SAE language impaired participant. The SAE and AAE language impaired have similar results". The data shows no clear direction between the highs and lows.

Figure 3. Children's average semantic scores on the word defintion task.

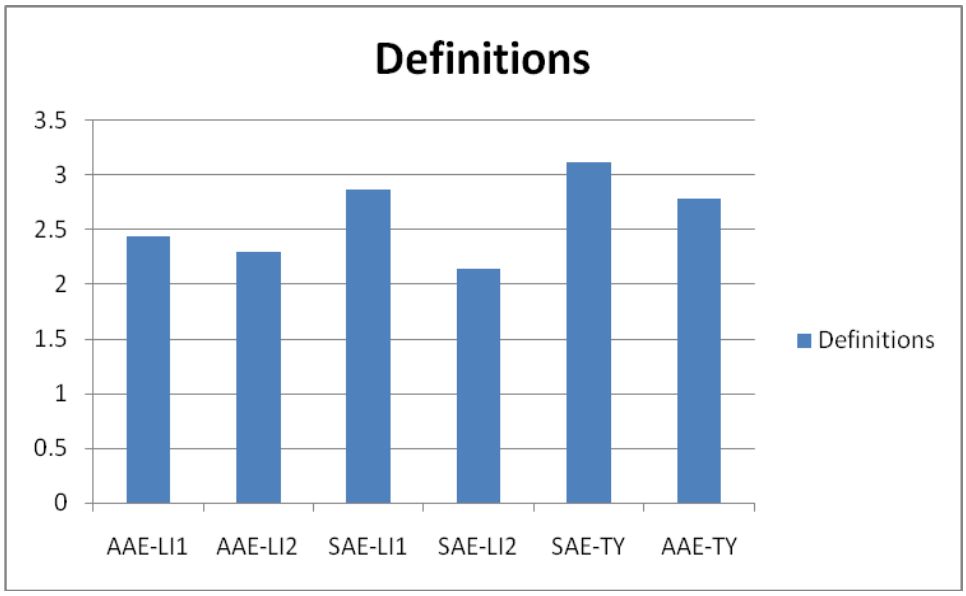


Figure 4 presents the points of first sound, i.e. the average gates at which children first produced a word beginning with the target sound during the gating task. "All children were quite proficient at perceiving the initial sounds. There is no difference between AAE and SAE users. It does no sepearate language impairemen from typically developing either. An AAE typical developing particpant is similar to a language. Figure 5 presents the point of isolation, i.e. the average gate at which children first produced the target word during the gating task. Figure 5 presents the point of isolation, i.e. the average gate at which children first produced the target word during the gating task. There appears to be only a slight difference between the particpants. There is no seperation between language diorder and typical language developing children. It does not display a difference betweeen of AAE or SAE. The results are similar for all participants. Children, regardless of langauge impairment and dialect status, identified the target words at equal time frames.

The point of acceptance, i.e. the average gates at which the children did not change their word guesses during subsequent longer gate durations during the gating task are displayed on Figure 6. In this gating task of acceptance dialect use does affect perfomance. The users of AAE seem to keep changing their word guesses at later gates when compared to the SAE users.

The language disorder stauts does not have an effect on this gating acceptance task. The SAE users with and without language impairments had similar points of acceptance and AAE users with and without language impairments had similar points of acceptance.

Figure 4. Children's average points of correct first sound on the gating task.

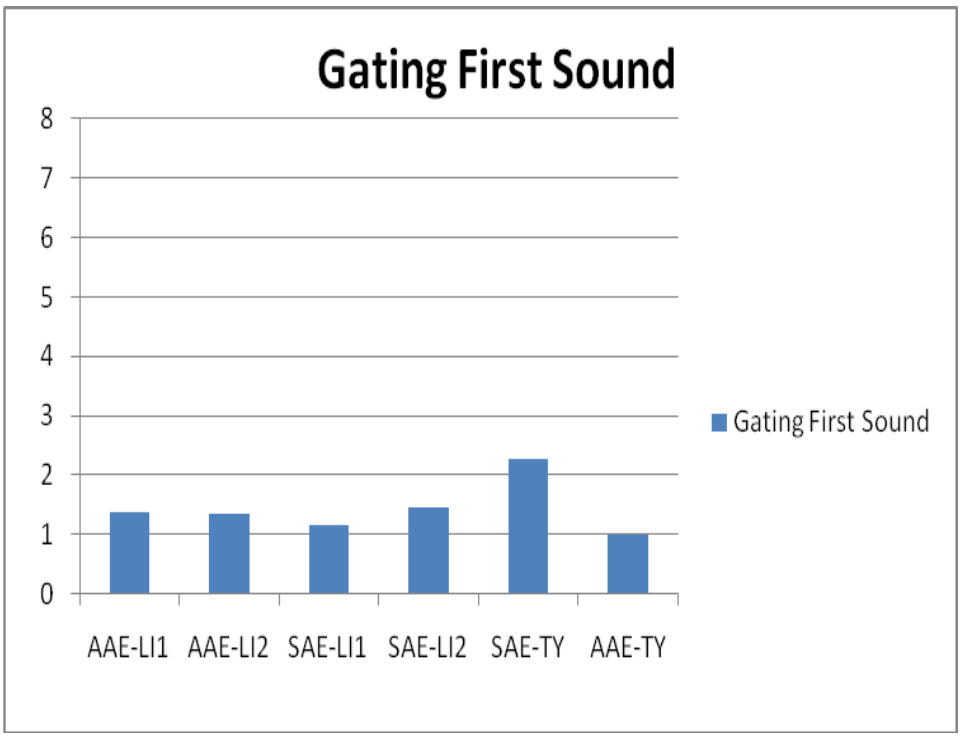


Figure 5. Children's average points of isolation on the gating task.

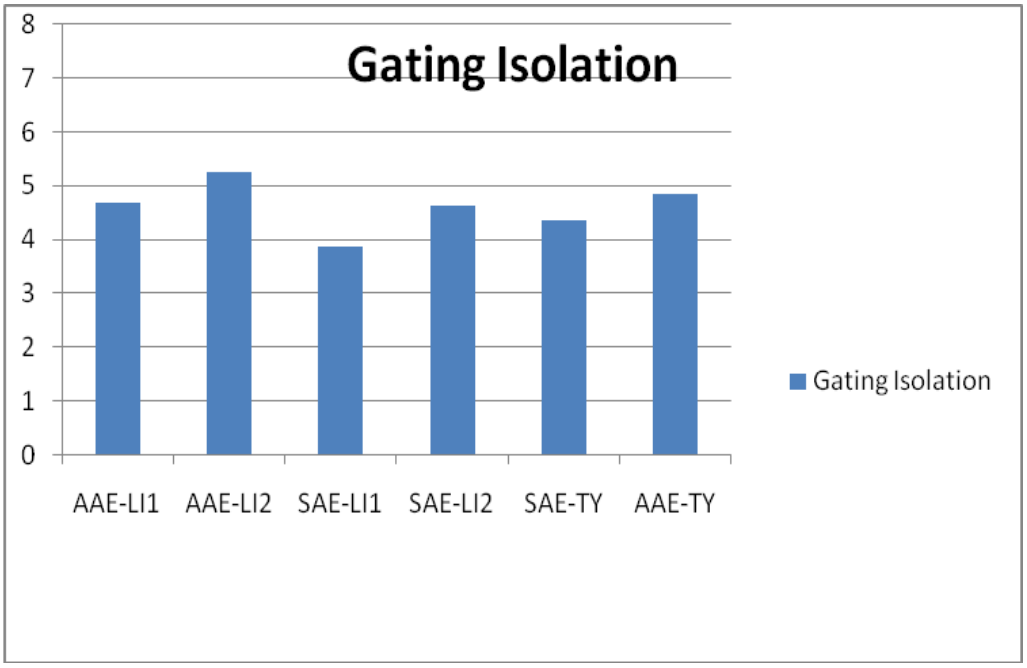
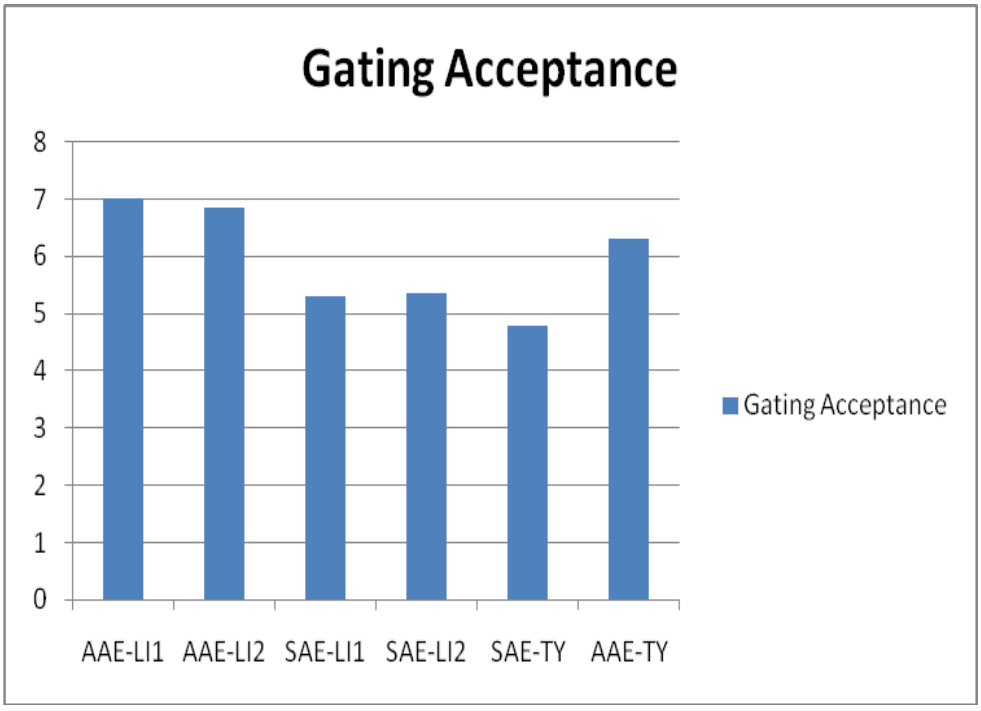


Figure 6. The children's average points of acceptance on the gating task.



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Conclusion

The current study examined to what extent language processing tasks reflects language difference or disorder. Nonword repetition task was a consistent indicator of language disorder. All children with language disorder produced fewer target phonemes than typically developing children. Dialect use did not seem to affect performance on the nonword repetition task. These results are in line with Dollaghan's (1998) study. Dolloghan (1998) posits, "A nonword repetition task that is carefully constructed not to have words that resemble words known to children seems to be a linguistically and culturally unbiased indicator of language disorder" (pg.1144). Rodekohr and Haynes (2001) also found in their studies of NWR that there was a difference between the normal language group and the language impaired group. The difference between language status participants and typically developing participants has various predictors. Language acquisition can be a factor since a characteristic of SLI is delayed language development. Their language development is begins normally, but then makes little progression and does not meet the developmental norms.

The NWR task is an unbiased assessment of language disorder. It accurately measured the phonology of SAE and AAE typically developing participants, and dialect was not a factor. The typically developing speakers had a similar performance on this task. The results agree with Dollaghan's (1998) argument that "processing dependent measures are better suited to identifying fundamental language processing deficits than typical language test, because they are less dependent on prior knowledge" (pg.1141). Dolloghan suggested cultural knowledge was not a factor, once the results from different ethnic groups were compared. The NWR is an unbiased tool that can be a good indicator of language disorder. Clinicians should use this measure when accessing culturally linguistically diverse children.

The CLPT was found to not be a reliable source of determining language disorder of language difference. In contrast, Arnold and Evans (2005) found that the SLI and the typically developing did not differ systematically. In the current study, there was one language-impaired participant who performed similar to typically developing participants. The data was not consistent, and no conclusion could be made. It was ambiguous, and neither language status nor dialect seemed to fully account for children's performance. The definition task was also found to not be accurately distinguished language difference or language disorder. The definition task did not present accurate results of separation from dialect. It displayed no clear separation between language impairment or dialect status. This show there is no clear separation from the language status or dialect.

Children's performance on the gating task seemed to be affected by dialect status, but not by language disorder status. All children, regardless of language disorder and dialect status, were quite proficient at initially activating target words in their lexicons. However, compared to SAE users, AAE dialect users seemed to vacillate between multiple word candidates when activating target words. One possible explanation is that it may be a lack of confidence, which makes the AAE users, vacillate between multiple word candidates. Alternatively, AAE users may be more distracted by competing lexical activations when compared to SAE users. AAE users may hinder their performance on this gating task due to their working memory when distracted. The children may have to rethink their initial guess because during the task. It is unclear at this point why this should be the case. However, the gating task had a clear testing bias towards AAE speakers. This task is not recommended to use in a clinical setting with

culturally and linguistically diverse. Future research on lexical access and activation should carefully consider what the linguistic and cognitive factors are contributing to cultural and dialectical differences in lexical access.

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Appendix A: Features of African American Dialect from the AAE Speakers

Features of African American English – AAE-LI	Standard American English Comparison
“teik a fork and /id/id/”	“Take a fork and eat it”
’’when /s^mbodi/tell on you , you didn’t do it”	“When someone tells on you and you did not do it”
“washing tv”	“watching tv”
“when you cuts some food up”	“When you cut food up”
/los/	/lost/
/wor/	/work/
/baf/	/bath/
/sumfin/	/something/
“/fIfin/ pole to get a /fif/”	“fishing pole to get a fish”
/sto/	/stove/
/animo/	/Animal/

Features of African American English AAE-L2	Standard American English
"/bein/ like a object"	"Being like an object"
/vike/	/Bike/
/kina/	"kind of"
"to get /klien/	"To get clean"
/putIn/	/Putting/
/helpIn/	/Helping/
/coutIn/	/Counting/
"/comin/ through your hair if it needs to be done.	Combing through your hair when it needs to get done.

Features of African American English AAE-TY	Standard American English
“blame /sumbdi/of doing something”	“To blame someone of doing something”
“do nothing stupid”	“Do not do anything stupid”
“ count how many stuff you have”	“Count how much stuff you have”
/baf/	/Bath/
/”fesh a fish/	“Fetch a fish”
/pickin/	/picking/
/playin/	/Playing/
“/comIn/ nappy”	“Combing nappy hair”

An Examination of Differences in Assessment Center Leadership Competency Rating Based on Gender and Academic Major

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Abstract

The study investigates whether there are differences in leadership competencies between gender and academic major. Fifty-two Penn State Schreyer Honors College students (46% Female, 54% Male) participated in a one day assessment center that included three interactive exercises and two written exercises. Assessors rated participants on several of Bartram's (2005) Great 8 competencies that were demonstrated during simulations of situations in which leaders often engage such as group discussion, a one-on-one meeting and a presentation to their boss. This study will focus on whether there are differences between male and female participants' ratings on the Leading & Deciding, Supporting & Cooperating, Organizing & Executing, Creating & Conceptualizing and Analyzing & Investigating competencies. In addition, ratings will be analyzed to determine if participants from various academic majors performed differently in terms of several of the Great 8 competencies. The results of this study will add to the understanding of how groups of students differ in terms of their leadership performance.

Introduction

Leadership has been one of the most researched topics in the field of I/O psychology. Researchers have looked at styles of leadership for as long as the past 60 years; there have been nearly as many as 65 different classification systems for styles of leadership (Northouse, 2010). Differences in workplace styles between genders has been another study of interest in this field for as long as women and men were allowed to work with each other. Literature has been observed to help develop the argument of overall gender and academic differences in assessment center performance.

Assessment Centers

Managerial assessment centers (ACs) continue to be a popular assessment method in both administrative and developmental contexts (Howard, 1997; Woehr, 2006). Assessment centers are known for their abilities to evaluate and predict certain aspects of worker behavior. Various techniques are used to allow for this procedure to evaluate an employee's ability to be promoted, selected or placed in management (Byham & Thornton III, 1982).The first assessment centers were used by AT&T to be considered for promotional purposes (Byham & Thornton III, 1982). Currently, assessment centers are acknowledged to be predictors of performance and they are considered to be one of the best research methodologies in industrial psychology (Woodruffe,

1990; Kriek, 1991; Cascio, 1991). Years later, the assessment center has become widely used in organizations as a tool to select and develop leadership talent (Spychalsky, Quinones, Gaugler, & Pohley, 1997). Assessment centers have been used for identifying and developing managerial talent (Moses & Boehm, 1975). Management development is attained most effectively in assessment centers to enhance effectiveness, specifically the job performance of the manager and the performance of the organization as a whole (Berry, 1990).

Some exercises that are used in the assessment center include paper and pencil intelligence and personality instruments, execution of job tasks, and structured interviews (Mueller-Hanson & Thornton III, 2004). Some techniques require participants to perform in simulations of work performance. Among these behavior based exercises are role-plays, leaderless group discussions, and in-basket exercises. Skills that are tested in an assessment center include communication skills, leadership, interpersonal skills, professionalism, and how participants are able to present themselves in managerial contexts (Mintzberg & Gosling, 2002; Pfeffer & Fong, 2002; Porter & Mckibbin, 1998; Waldman & Korbar; 2004). These exercises can help develop as well as assess leadership behaviors. Exercises such as role-plays may have teaching implications in helping students with Supporting & Cooperating competencies (Costigan & Donahue, 2009).

Assessment centers have developmental advantages for students as well. There is also some precedence for the use of assessment centers for developmental purposes in academic settings. The American Assembly of Collegiate Schools of Business (AACSB, 1989; Waldman & Korbar, 2004) has developed an assessment center to examine how well students operate in a business (Boyatzis, Stubbs, & Taylor, 2002). Assessment centers are normally used in industry and it is found that they have a high degree of success in terms of their predictability for success and developing talent in the workplace for managerial promotion and are used for the development of students (Gaugler, Rosenthal, Thornton, & Bentson, 1987). Three major factors influence the effect of feedback on performance, namely the source of the feedback, the characteristics of the feedback, and the characteristics of the recipient (Camp, Blanchard, & Huszczo, 1986).

Leadership Competencies

The oldest form of leadership behavior taxonomy dates back to 1951 and the U.S. Air Force, Flanagan identified six primary managerial behaviors for U.S. Air Officers (Flanagan, 1951; Borman & Brush, 1993). Traits in leadership have generated much interest among researches for its explanation of how traits influence leadership (Bryman, 1992). Traditionally known as personality variables, competencies are used for a more accurate analysis of predicted worker behavior (McClelland, 1973). Prior to the use of assessment centers, many businesses would use intelligence testing to find predictability of performance. It is better to test based on certain criteria and there is ample evidence that tests that sample job skills predict higher levels of proficiency on the job (McClelland, 1973). Stogdill, surveyed and analyzed over 124 trait studies from 1907 to 1947 and another 163 from 1948 to 1970 and found that there were a number of leadership traits that provide an understanding for what personality characteristics are typical in leaders (Northouse, 2010).

One of the most well known leadership behavior based research is the Ohio State University studies (Northouse, 2010). Like the developmental assessment centers used by the American Assembly of Collegiate Schools of Business, the Ohio State Studies studied students using the Leadership Behavior Description Questionnaire-XII (LBDQ) to assess leadership

behavior (Northouse, 2010). Studies show that initiating structure behaviors and consideration behaviors are fairly evident in these studies. Borman and Brush (1993) have used factor analysis with I/O Psychologists to find taxonomy of managerial behavior. At this time they felt that there was a lack of information on managerial behavior. As such Borman and Brush (1993) found an 18 factor solution for managerial behavior known as mega-dimensions. This taxonomy contributed to the overall understanding of finding common behaviors in managerial behavior; however it failed to agree with other taxonomies that have been made in the past. It has however broadened the overall performance domain than previous taxonomies (Borman & Brush, 1993).

Other than Borman and Brush's taxonomies on managerial behavior, there are certain characteristics that are observed in an assessment center. Commonly researchers use the Big Five personality traits (Anderson, 2010). Considering past research has suggested that these personality characteristics have relationships with being a leader (Judge, Bono, Illies, & Gerhardt 2002; Northouse, 2010). Extraversion, conscientiousness, and openness to experience were considered to be the highest forms of important traits for effective leaders (Judge, Bono, Illies, & Gerhardt 2002; Northouse, 2010). Extraversion has been found to have the highest relations and to be the highest predictor of success (Waldman & Korbar, 2004).

In the late 20th century leadership research began to shift its focus to competencies which are associated with characteristics related to management skills and interpersonal communication (Boyatzis, Stubbs, & Taylor, 2002). Work competencies also include other traits, knowledge, skills and abilities (Boyatzis, Stubbs, & Taylor, 2002). This research shift has lead to the common use of Bartram's Great 8 Competencies.

While organizations develop their competency models that reflect its values and missions, Bartram sought to develop taxonomy of leadership competencies commonly included in organizations competency models. The Great 8 emerged from factor analyses and multidimensional scaling analyses of self and manager ratings of workplace performance. Definitions of Bartram's Great 8 are seen here as cited from his research on Figure 1.

Bartram's (2005) Great 8 Competencies, Figure 1.

Analyzing &Interpreting	Shows evidence of clear analytical thinking. Gets to the heart of complex problems and issues. Applies own expertise effectively. Quickly learns new technology. Communicates well in writing.
Interacting & Presenting	Communicates and networks effectively. Successfully persuades and influences others. Relates to others in a confident and relaxed manner.
Supporting & Cooperating	Supports others and shows respect and positive regard. Puts people first, working effectively with individuals and teams, clients and staff. Behaves consistently with clear personal values that complement those of the organisation.
Organizing & Executing	Plans ahead and works in a systematic and organised way. Follows directions and procedures. Focused on customer satisfaction and delivers a quality service or product to the agreed standards,
Creating & Conceptualizing	Open to new ideas and experiences, Seeks out learning opportunities. Handles situations and problems with innovation and creativity. Thinks broadly and strategically. Supports and drives organisational change.
Leading & Deciding	Takes control and exercises leadership. Initiates action, gives direction and takes responsibility.
Adapting & Coping	Adapts and responds well to change. Manages pressure effectively and copes well with setbacks.
Enterprising & Performing	Focuses on results and achieving personal objectives. Works best when work is related to results and the impact of personal efforts is obvious. Shows an understanding of business, commerce and finance. Seeks opportunities for self-development and career advancement.

His findings indicate that the competencies did have significant relations with ability and not so much personality. Other relations competencies have are general intelligence or "g" as well as mental ability in relations to Analyzing & Interpreting and Presenting and Interacting competencies. Competencies may be applied in various manners to test leadership assessment styles, and cultural frame works, most recently Bartram has currently been studying how competencies match transactional and transformational competencies to European leadership and gender styles.

Gender

The differences in work styles between genders has been examined for a long period of time. As more women are occupying positions of leadership, questions as to whether they lead in a different manner from men are on the rise (Northouse, 2010). Research on gender differences and differences in the assessment center has existed for as long as the early 1960s.It has been found that using assessment centers are considered to be a logical means for providing equal opportunity to women for promotion into managerial positions and advancement within managerial levels (Moses & Boehm, 1975). Questions have risen whether women are skillful enough to perform well as a leader as well as in the workplace. Leadership role differences between men and women has increased as more women are entering leader like positions in industrialized nations (Eagly, Johannesen-Schmidt, & Engen, 2003). Moses and Boehm (1983) found that overall assessment rating was significantly related to progress in management and that the success rate for women was comparable to men (Moses & Boehm, 1983).

Studies have also used women to provide for the validity of assessment centers for leadership potential as well as eliminating workplace discrimination (Ritchie & Moses 1983). Gender roles have even taken place in gender leadership perceptions that men's roles are more congruent with leadership roles than women has created prejudice against women leaders (Eagly & Karau, 2002; Ayman & Korabik; 2010).

Other differences that have been found in literature relate to gender differences in assessment centers related to leadership style behaviors and competencies. It has been thought that men may have life style advantages over women relative to their leadership behaviors due to conflicting social roles (Eagly & Karau, 1991). Gender role theory takes place in much of gender related leader research according to Eagly (1992). Gender role theory emphasizes society gender roles and the gender typing of the task oriented and socially oriented behaviors that follow from those roles (Eagly, 1987). Men are believed to have agentic task oriented qualities where as females are expected to have high levels of communal attributes which involve relationship orientations (Eagly & Karau, 1991). Literature has also found that in leaderless groups task and social leaders are often separately present (Bales & Slater, 1955; Eagly & Karau, 1991) Gender role theory would predict that men would emerge more than females and findings based on Eagly and Karau's (1991) meta analysis on the emergence of leaders finds that men do emerge more frequently on measures of leadership as well as task oriented leadership. On the other hand women do emerge more frequently than men on measures of social leadership (Eagly & Karau, 1991).

Another observation of differences in behavioral style of women involves their performance in 360 degree feedback and their leadership styles in relation to transformational and transactional leadership styles. "Academic writers have presented a range of views concerning sex differences and similarities in leadership styles (Eagly & Johnson, 1990: Eagly, Johannesen-Schmidt & Engen, 2003)." Some have asserted that female leaders are more

transformational than male leaders (Eagly, Johannesen-Schmidt & Engen, 2003). These assertions are typically moderated by social role theory, which suggests that people model their leadership and workplace based on gender expectations (Eagly & Johannesen-Schmidt, 2001; Eagly & Johnson, 1990, Eagly & Karau, 2002; Eagly, Wood & Diekman, 2000; Eagly, Johannesen-Schmidt, & Van Engen, 2003). Their ability to score higher on the MLQ study as examined by Eagly, et al. (2003) that finds that women score higher on the transformational and contingent reward aspect of transactional leadership where as men are higher on transactional aspects of leadership in management by exception active and passive. The findings from Eagly et al. (2003) meta-analysis study implies that they may also have higher levels of transformational competencies related to Bartram's Great 8.

Bartram however founded the contrast in his (2009) study on differences in performance based on gender and managerial experience. Bartram used an OPQ32i methodology of self reports in contrast to Eagly, et al.'s (2003) meta-analysis. The OPQ32i is an Observational Personality Questionnaire that assessed male and female workers in Europe based on their assessment of their work style. Findings show that across eleven European countries transformational competencies in leadership are higher in males contrasted to females, contrasted to Eagly et al. (2003) Meta –analysis findings. The current study may have a more contrasted opinion in relation to Bartram's Great 8 (2005) competencies.

Major

Major and overall interests have an effect on how we relate to other people. "The conventional wisdom of industrial and organizational (I/O) psychology is that interests and values reflect affective responses to specific people, events, and activities (Hogan & Blake, 1996)." Interests may also have a predictive expectation on how one chooses their own major, activity and or occupation (Hogan & Blake, 1990).There is congruence between career and overall interests and behavior type (Niles & Bowlsbey, 2009). As a result of this understanding we are to use the Holland (1973) codes RIASEC (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) to predict how one may choose a major. The Holland hexagonal model has shown that there are themes that are reflective of the Five –Factor Model which shows that there is a framework for organizing and relationships between personality and interest domains (Hogan & Blake, 1996). Holland theory also assumes that there are person-environment assumptions related to work skills. Holland states that "People search for environments that will let them exercise their skills and abilities and that a person's behavior is determined by an interaction between their personality and characteristics of their environment (Holland, 1973; Niles & Bowlsbey, 2009)." Assessment center performance may be moderated by these assumptions as we are to investigate in our examination of differences by major.

Hypotheses

The present study involves understanding differences in measures of competency potential. The data to find these differences are provided using an assessment center from the Pennsylvania State University Schreyer Honors College Program. Based on literature it may be possible that there are differences in the leadership competencies based on major and gender.

Literature may imply that there may be differences in performance related to interests and personality. Presently the second hypothesis wishes to predict differences in interest in this

developmental assessment center. “Female leaders compared with male leaders sometimes are considered to be less hierarchical, more cooperative and collaborative and more oriented to enhancing others self –worth (Eagly, Johannesen-Schmidt, & Engen, 2003).” This observation by Eagly, et al. (2003) may also have relations with the Supporting & Cooperating competency as found by David Bartram’s (2005) Great 8 Competencies. Explanations for comparisons of gender differences in overall competency performance, and relations to the Great 8 may be found in Table 1.

These findings lead to our first hypothesis which deals with student based assessment center performance ratings and differences in gender:

Hypothesis 1: Based on are differences in overall assessment center performance in the assessment center due to gender.

Hypothesis 1: Predicted Differences in Gender based Performance in the Assessment Center (Figure 2)

Competencies	Male	Female
Leading & Deciding	+	-
Supporting & Cooperating	-	+
Interacting & Presenting	=	=
Analyzing & Interpreting	+	-
Creating & Conceptualizing	=	=
Organizing & Executing	=	=

- *Note* Leading& Deciding and Adapting & Coping were not observed in the Schreyer Honors College Assessment Center.

Rationale for Hypothesis 1

I expect the differences for the Leading & Deciding and the Analyzing & Interpreting Domain find that males will outperform females in assessment center performance. I was able to predict this due to Eagly’s (1987) gender role theory which emphasizes that there are gender roles and gender typing of social and task oriented behaviors that follow from certain characteristics.

Bartram did studies in 2009 and found gender differences in transformational and transactional competencies. The Supporting & Cooperating, Interacting & Presenting, Analyzing & Interpreting competencies are considered to be transactional competencies. Where as Creating & Conceptualizing, Leading & Deciding, as well as Analyzing & Interpreting are considered to be Transformational competencies. His findings show that amongst the Transformational competencies that females outperform males and amongst the transactional competencies that

males outperform females. As previously stated in literature, Eagly et al. (2003)'s literature stated otherwise.

I believe that there should not be any competency differences between the Interacting & Presenting, Creating & Conceptualizing and Organizing & Executing. Contrary to the Gender Roles Theory and Research done by Eagly et al. and Bartram I predict differences may not exist due to lack of experience. However on the Analyzing & Interpreting as well as the Supporting & Cooperating competencies I believe that differences will exist based on gender role theory as founded by Eagly (1987). Men are typically more analytical and task oriented than females where as females are more relationship oriented which has been guided by Eagly's (1987) theory.

While understanding the relationships between the Five Factor Model and relationships between interests as founded by Hogan and Blake (1990), as well as the person-environment interactions as found by Holland (1973) the current study should find that the relations between the Five Factor Model and the Great 8 Bartram (2005) would create findings of differences in OAR in assessment center performance.

Hypothesis 2: There are differences in overall assessment center performance in the assessment center due to developmental interests and major.

Hypothesis 2: Predicted Differences in Academic Major based performance Assessment Center Performance. (Figure 3)

Competencies	Smeal College of Business (E)	Eberly College of Sciences (IR)	College of Engineering (IR)	College of Liberal Arts(S&E)
Leading & Deciding	+	=	-	-
Supporting & Cooperating	+	-	-	+
Interacting & Presenting	+	-	-	+
Analyzing & Interpreting	=	+	=	-
Creating & Conceptualizing	+	=	+	-
Organizing & Executing	+	-	+	=

Rationale for Hypothesis 2

According to the Holland Occupations Finder I found that Enterprising was present in the majors from the Smeal College of Business as well as the College of Liberal Arts. In relation to the Holland codes Enterprising is the ability to have a managerial outlook towards work life as cited by Hogan and Blake (1990). With that in mind, I believed that the Smeal College of Business would outperform the other colleges in the Leading & Deciding, Supporting & Cooperating, Interacting & Presenting, Creating & Conceptualizing as well as the Organizing & Executing competencies. I predict that the College of Liberal Arts was the second strongest due to their strengths in Social as well as the enterprising domain. In regards to the Analyzing & Interpreting domain I predict that the Eberly College of Science would have the highest level of performance in regards to this competency. I believed this to be true considering that most students in this college were rated as Investigative and Realistic (IR). As far as the College of Engineering, I did not find them to be high performers of most of these competencies except for the Creating & Conceptualizing and Organizing & Executing competencies because of their course work as well as their Holland code ratings which were also Investigative and Realistic. The current study provides an investigation of how these differences exist amongst these four colleges at The Pennsylvania State University.

Methods

Participants

The sample for the current study consisted of 52 Schreyer Honors College students; most students were in the Colleges of Liberal Arts (25%), College of Engineering (17%), Smeal College of Business (23%) and Eberly College of Science (7%). The gender of the sample of students were 46% Female and 54% Male. The class standing of the participants were sophomores (14%), juniors (28%), and seniors (58%). Self-reported SAT scores were an average of 690 on Math and 660 on Verbal (SD- 80+/-). According to the self- report measures the mean GPA was 3.68 on a 4.0 scale (SD-.10+/-).

Procedure

The Schreyer Honors College Leadership Assessment Center (SHCLAC) has been conducted eight times between October 2008 and March 2010. The overall purpose of this procedure is to prepare students for career goals and to create opportunities for development and research. Prior to their assessment day, students were prompted by email and course instructors to participate in the SHCLAC. Then, students are to meet administrators two weeks prior to being assessed for orientation, to receive their WAVE self report survey. After applying, students met with a member of the assessment center team to learn about the process, and receive instruction for completing pre-assessment center work, this work included completion of a personality assessment, demographic survey, and a written response to a case study. The demographic included Grade Point Average, Gender, Major, SAT scores, and class standing.

Fifty four students volunteered to participate from the Schreyer Honors College at Pennsylvania State University. Assessments took place twice per semester in the 2008-2009 and 2009-2010 academic years. Approximately, five and twelve students appeared at the Bank of America Career Services Center (located on the University Park campus of Pennsylvania State University) to be assessed. Each center was held Saturday morning; students spent six hours participating in various exercises.

On the day of assessment participants find that they are given three exercises and two written exercises were given to participants to test for participants' competency behaviors. In the beginning of their day, students are given thirty minutes to be assessed for a role play exercise that lasts approximately fifteen minutes. The role play exercise analyzes Great 8 Competency abilities that find competencies in the communication and person domain (Leading & Deciding, Interacting & Presenting, Supporting & Cooperating, and Organizing & Executing). Secondly, they are given a chance to be simulated in a presentation where they must create a fundraising and advertisement program; these skills are used to find strength in the developing and success domain (Analyzing & Interpreting & Leading & Deciding). The final and last exercise is a leaderless group discussion (LGD) which is a meeting with other participants involving a development of ideas to develop a plan to advertise for a campaign. The LGD is used to assess the following competency behaviors; Interacting and Presenting, Leading & Deciding, Supporting & Cooperating, & Organizing & Executing). The two written exercises were used to assess analyzing and interpreting, Leading & Deciding and Supporting & Cooperating. Written exercises were used to assess how well students would be able to solve workplace problems. Overall, the exercises and competencies were used on a 7 point scale to create an Exercise x Competency matrix that was used for grading the participants in the study.

Measures

Assessors in the assessment center are a diversified group of graduate students, professors, and professional alumni of Pennsylvania State University who are skilled in the Human Resources, Labor Employment Relations and Industrial Organizational Psychology fields. Training for their assessment was performed by Dr. Greg Loviscky, professor of Industrial/Organizational Psychology. Assessors received a training manual to explain the assessors' procedure during the developmental assessment center. They are to provide feedback and ratings using a 7-point scale, for each of Bartram's (2005) Great 8 Competencies. Afterwards, they were provided with an overall background of the goal of the SHCLAC , then they are provided with information involving logistics, how to evaluate performance of students relative to the Great 8 competencies and understanding what procedures are necessary for the SHCLAC. Then after getting an understanding of the exercises and overall program the assessors were directed to participate in a mock session so that they would have a better understanding of the process of the SHCLAC.

The three teams were split to assess the participants and were trained to use tools to properly analyze and critique students on their leadership behaviors relative to Bartram's Great 8 using a competency exercise matrix. After independently rating each participant based on the matrix they speak in pairs to make a discussion upon their scores, then every pair of assessors meets together to discuss overall ratings on each participant. Lastly, feedback is provided to each participant for approximately 60 to 90 minutes based on the participant's performance.

Results

The first examination of data was on the demographic differences based on self reports of the Schreyer Honors College students. Demographic data was examined were based on GPA and SAT scores (Math) and (Verbal). Using PASW statistics program and ANOVA was performed using the data. Findings show that there was a significant difference in Math SAT scores between males and females. ANOVA findings indicated no significant differences between males and females in terms of Verbal SAT scores and GPA, as can be seen in Figure 4.

ANOVA based Differences in Self Report Data on Schreyer Honors Students in Assessment Centers, (Figure 4)

Gender	SAT(MATH) M	SAT(VERBAL)M	GPA	F	Significance
Male Female	729.57 644.78	659.09 664.35	3.78 3.80	20.132(Math .052(Verbal .141(GPA)	.000(Math) .821(Verbal) .709(GPA)

Note Data on Significant differences based on ANOVA findings state that the highest level of differences are in SAT Math scores in male.

After finding differences on self-reported information, we started to use ANOVA for differences in Gender based performance in regards to the Great 8 Competencies. A significant difference between men and women was found for Organizing & Executing. However, there were no significant differences between men and women for Supporting & Cooperating, Leading & Deciding, Interacting & Presenting, Creating & Conceptualizing, and Analyzing & Interpreting. This fails to support Hypothesis 2 in regards to gender. Although the differences were not significant, female participants had higher average competency ratings, as can be seen in Figure 5.

Differences in Assessment Center Performance According to Major (Figure 5)

Variable	Gender	N	M	F	Significance
Analyzing & Interpreting	Male Female	28 23	4.79 5.04	.764	.370
Creating & Conceptualizing	Male Female	28 24	5.14 5.50	1.672	.203
Interacting & Presenting	Male Female	27 24	4.72 4.77	.041	.843
Leading & Deciding	Male Female	28 24	4.48 4.71	1.034	.320
Supporting & Cooperating	Male Female	28 23	4.64 4.89	.970	.324
Organizing & Executing	Male Female	28 23	4.02 4.67	5.886	.018

Note Significant differences are seen in Organizing & Executing, over all differences in performance find that females outperform males in the competencies.

To test for our second hypothesis we examined data on overall differences in assessment center performance in regards to academic major. ANOVA findings show that there was a significant difference among the Majors in Creating & Conceptualizing. Post hoc analyses indicated that the difference between the Creating & Conceptualizing ratings for Business majors

and Engineering majors was statistically significant. Overall, students in the Smeal College of Business had higher average competency ratings than the other students in other Colleges, with the exception of Interacting & Presenting, although the differences were not significant. The ANOVA results are summarized in Figure 6.

Differences in Assessment Center Performance according to Major (Figure 6)

Variable	**College**	**N**	**Mean Scores**	**F**	**Significance**
Analyzing & Interpreting	Liberal Arts Eberly College of Science College of Engineering Smeal College of Business	12 4 9 11	4.58 5.13 4.89 4.99	.493	.141
Creating & Conceptualizing	Liberal Arts Eberly College of Science College of Engineering Smeal College of Business	12 4 9 11	5.42 5.25 4.44 5.50	2.945	.057
Interacting & Presenting	Liberal Arts Eberly College of Science College of Engineering Smeal College of Business	12 4 9 11	4.50 4.25 5.06 5.00	2.945	.160
Leading & Deciding	Liberal Arts Eberly College of Science College of Engineering Smeal College of Business	12 4 9 11	4.25 4.75 4.67 4.71	.730	.352
Supporting & Cooperating	Liberal Arts Eberly College of Science College of Engineering Smeal College of Business	12 4 9 11	4.63 4.50 4.56 5.27	1.572	.196
Organizing & Executing	Liberal Arts Eberly College of Science College of Engineering Smeal College of Business	12 4 9 11	4.38 4.38 4.00 4.46	.320	.771
Total		**36**			

Note: Overall significant difference is seen amongst the Creating & Conceptualizing Domain the highest level of strength is found by the Smeal College of Business students.

Discussion

The results of the current study did not support our hypotheses. Hypothesis 1 predicted that we would find many differences in leadership competencies based on gender. However, the findings indicate that there was a difference between males' and females' Organizing & Executing assessment center ratings, with females earning higher ratings. We did not find any significant differences across the other competencies, although female participants were consistently rated higher than male participants. These results support neither Eagly et al.'s (2003) findings nor Bartram's (2009) results.

One possibility is that there were little to no differences whatsoever in males' and females' assessment center performance. Moreover, it may be possible that men and women are not so different at all when it comes to competencies as well as abilities. The Gender Similarities hypothesis as investigated by Hyde (2005) states that "males and females are similar on most, but not all psychological variables" (p. 581). Hyde's meta-analysis results indicated that there are very few large differences between genders, and those differences were limited to variables such as throwing velocity, whereas differences between males and females in terms of verbal and mathematical abilities are relatively small. These results may explain why there was only one significant difference between males and females in the current study. Of course, the differences in the other competency ratings may have been non-significant due to the small sample size. Another possible reason for the lack of support for our hypotheses is a lack of participants' workplace experience. The socialization process at work might contribute to significant differences between genders. Not having the experience and corresponding socialization towards gender roles, could have also contributed to the lack of support for our hypotheses.

The second set of hypotheses, concerning differences in leadership competencies among participants from different Majors, was also not supported. While none of the differences were statistically significant, Smeal College of Business students had higher competency ratings, on average, than students from other majors with the exception of Interacting & Presenting. This trend may be explained by research conducted by Holland (1970). He used the Holland codes to develop the Occupations Finder which assigns behavioral interests to academic majors and professional occupations. According to this finder, we are to observe that Enterprising is most related to Business related careers as well as academic majors. Enterprising is also related to two of the Big Five personality factors, Extraversion and Conscientiousness. This may account for why the Smeal College of Business students outperformed students from the other colleges.

Limitations/Conclusion

The lack of support for the hypotheses may be due to some methodological issues. The lack of a large sample size may be a reason why we were only able to find significant differences in only Interacting and Presenting. Also, our sample may have been unrepresentative of majors in general considering that we only observed four of the thirteen colleges at The Pennsylvania State University. If we were able to have a larger sample size we would have higher variance in majors which may produce different results.

In addition to sampling issues, our measures of leadership competencies were different than those studies on which our hypotheses were based. Bartram assessed his participants based on self-report using the OPQ32 (Occupational Personality Questionnaire) and Eagly et al.'s (2003) study was a meta–analysis. Our measures of leadership competencies were competency

ratings provided by assessors during an assessment center. These different methodologies may be reasons why the results of each study have varied.

Factors associated with assessment center ratings may have also contributed to our non-significant findings. For instance, the duration of training that our assessors received was shorter than what is generally received in industry. Also, the majority of our assessors were female. It is possible that gender bias may have been an attributed to the results of our current study in regards to our gender hypotheses. In addition, some assessor teams may also have been more harsh or more lenient than others, which may have produced less reliable measures of the competencies.

Despite the various possible explanations for the lack of support for our hypotheses, there are reasons for optimism for testing these hypotheses in the future. For instance, analyses can be conducted to determine the reliability of the assessment center ratings. Furthermore, the assessment center will continue to be held for the next several years, greatly increasing the sample sizes for future analyses. The current research provided a crucial first step in examining the SHC developmental assessment center ratings, but subsequent data collection and analyses may be able to provide more conclusive evidence regarding whether differences exist between genders and students from various majors.

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