Socioeconomic Status and Diagnosed Disability Relationship in a Disadvantaged Rural Junior-Senior High School

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ABSTRACT

This study employed a quantitative experimental correlational (action research) design utilizing Pearson's r correlation coefficient to determine whether or not there was a statistically significant relationship between students' socioeconomic status and having a diagnosed disability at one economically disadvantaged public, rural, co-educational middle school in the northeast region of the United States. Data from students in grades 6-8 who were considered economically disadvantaged were analyzed. It was determined that there is little to no correlation between students' socioeconomic status and having a diagnosed disability at the school utilized in this study. However, additional analyses indicated that almost 70% of students with a diagnosed disability were also economically disadvantaged, which suggested that a causation analysis is recommended for future study.

It is estimated that over 56 million people in the United States have some kind of disability (Brault, 2012). Disability is one of the largest public health problems facing the United States, and poverty is one of the variables that increases the risk of disability (Seelman & Sweeney, 1995). This relationship between disability and poverty may partially explain research which reveals the fact that a disproportionate number of poor students are also served by school special education programs (Tornquist, 2005).

The purpose of this study was to determine whether or not there was a relationship between students' socioeconomic status and having a diagnosed disability at one economically disadvantaged public, rural, co-educational middle school in the northeast region of the United States. Aikens and Barbarin (2008) found that school systems in low socioeconomic status (SES) communities are often under-resourced, negatively affecting students' academic progress. If also found to be true in this study, the results would enable school district personnel to consider providing specific and appropriate resources for both its affected students and the educational staff by whom they are served. Identifying a relationship between SES and having a diagnosed disability would also support findings by Holzer III et al. (1996) that individuals below the poverty line have much higher prevalence rates of disability than those above it.

EDUCATION

People with disabilities remain overrepresented among America's poor and undereducated (American Psychological Association, 2014). During the last half of the 20th, the number of students receiving special education services grew by 30% while the total school enrollment grew by only 14% (U.S. Department of Education, 2000). Specifically in the early 1990s,

poorer students had higher rates of absenteeism and were less likely to enroll in college or post high school vocational programs (Wagner et al., 1993), suggesting poorer post-school outcomes even continued poverty into adulthood. According to Morgan, Farkas, Hillemeier and Maczuga (2009), children from low-SES households and communities develop academic skills more slowly compared to children from higher SES groups.

As education increases, disability rates decrease. A person with a bachelor's degree or higher is much less likely (about half so) to have a disability than is a person who has secondary or lower educational qualifications (Bradbury, Norris, & Abello, 2001). The cross-sectional results show that the strength of the negative association between impairment and income diminishes at higher levels of education (Mirowsky & Hu, 1996).

EMPLOYMENT AND ECONOMIC FACTORS OF DISABILITY

Persons with disabilities are more likely to be unemployed and live in poverty (American Psychological Association, 2014). The 2004 Harris Poll reported that only 35% of people with disabilities were employed full or part time, compared to 78% of adults without a disability (National Organization on Disability, 2004). Disabled adults earn less. Income for adults with disabilities is substantially lower than that of non-disabled people and people below the poverty line had a 21.3 %

rate of disability as compared to 13.3 % for those above (Seeleman & Sweeney, 1995).

In 1988 the average income for the general population was $34,017 and the median family income for people with disabilities was roughly $18,000 (Seelman & Sweeney). Adults aged 21 to 64 with disabilities typically earned less than those without disabilities. The median monthly earnings for people with any kind of disability was $1,961 compared with $2,724 for those with no disability ((National Organization on Disability, 2004).

This secondary analysis of the SEELS database found that when combining the four poverty categories used in this research, 40.3% of all elementary aged children in special education were in poverty. Young people with a disability were more likely to come from a lower social class, with household heads that were at the lower skill end of manual occupations. (Hirst & Baldwin, 1994).

POVERTY

In the general school population about four in ten students live in households with incomes under $25,000 as compared to 68% of secondary special education students (Wagner et al., 1993). Disabled adults were more likely to be poor, and poor families

are more likely to have children with disabilities. Three times as many adults with disabilities live in poverty with annual household incomes below $15,000, 26% as compared to 9% of nondisabled adults (National Organization on Disability, 2004). Nearly one half of single mothers receiving Temporary Aide for Needy Families (TANF) have a disability or a child with a disability and low income families with incomes below twice the poverty line are 50% more likely to have a disabled child (Lee et al., 2002).

When a family has a child with a disability they are more likely than those without to become poor. As a result of direct out of pocket expenses that families with a child with a disability often face; 4% to 12% of families in California between 1992 and 1996 were pushed in to extreme poverty (Meyers, Brady & Seto, 2000). Just as earnings and income were lower for people with disabilities, poverty rates were higher. Approximately 46.5% of people aged 15 to 64 with disabilities were in poverty, compared to 14.3 percent of people with no disability were in poverty (National Organization on Disability, 2004).

METHODOLOGY

A quantitative experimental correlational study was conducted as part of action research to examine whether or not there was a statistically significant relationship between

students' socioeconomic status and having a diagnosed disability at the middle school in this study. The threats to validity in correlational research include subject characteristics, mortality, location, instrument decay, testing, history, data collector characteristics, and data collector bias (Marley, 2007). Subject characteristics were not a factor because they were a measured component in this study. Mortality was controlled because the data represented results examined as a snapshot from a one-time test, meaning that only students who took the test were counted in the results. Location was controlled because all testing occurred at the school where the students were enrolled. Data collector characteristics and data collector bias were not an issue because the information was static and extracted from a preexisting database intended for reporting purposes, and not subject to interpretation. Instrument decay and testing history were not factors because the extrapolated data did not involve new testing.

Data were analyzed utilizing an electronic spreadsheet that calculated Pearson's *r* correlation coefficient. The reliability of the instrument depended upon the ability of the program to accurately calculate the correlation coefficient (*r*) statistic under the same conditions over a period of time.

PARTICIPANTS

The participants in this study were students enrolled in grades 6, 7, and 8 in the 2012-2013 school year at one economically disadvantaged public, rural, co-educational middle school in the northeast region of the United States. These students were selected because the database from which their information was gathered (the eMetric Data Interaction for Pennsylvania Student Assessments website) provided the relevant data for students who completed the Pennsylvania State System of Assessments (PSSA) test.

PROCEDURES

Individual demographic data from students in grades 6, 7, and 8 who attended the middle school in this study and completed the 2013 PSSA were utilized. Data from the *economically disadvantaged* category were analyzed for each student. According to the Pennsylvania Information Management System (as cited in Pennsylvania Department of Education, 2014), school districts use their own discretion to determine whether or not a student is economically disadvantaged. School districts utilize poverty data sources such as Temporary Assistance for Needy Families cases, census poor, Medicaid, children living in neglected or delinquent institutions or

foster homes, or eligible for free/reduced price lunch (Pennsylvania Department of Education).

Data were extracted from The Data Interaction for Pennsylvania Student Assessments website. This website was utilized because it was readily available and downloadable into a spreadsheet that could be sorted by category. The Data Interaction for Pennsylvania Student Assessments website is "designed to provide quick, easy and secured access to student performance results on the Keystone Exams, the Pennsylvania System of School Assessment (PSSA), the Pennsylvania System of School Assessment Modified (PSSA-M), and the Pennsylvania Alternate System of Assessment (PASA)" (Data Interaction for Pennsylvania Student Assessments, 2014, ¶1). The remaining data, which included a list of names of students with disabilities, were provided by the school district special education office secretary. The secretary compiled the list from existing district records and files. This information was added to the spreadsheet, which allowed for the correlational analysis.

RESULTS

Table 1 is a breakdown of students at the school district by grade level for the characteristics of disability status (whether or not they have a diagnosed disability) and economic

status (whether or not they are considered economically disadvantaged).

Table 1

Disability Status and Economic Statistics for IEP and non-IEP Students

		Disability Status				Economic Status			
		non-IEP		IEP		non-Disadvantaged		Disadvantaged	
	n by grade	*n*	% pop	*n*	% pop	*n*	% pop	*n*	% pop
Grade 8	156	133	85.3%	23	14.7%	94	60.3%	62	39.7%
Grade 7	130	115	88.5%	15	11.5%	68	52.3%	62	47.7%
Grade 6	153	128	83.7%	25	16.3%	80	52.3%	73	47.7%
Total	439	376	85.6%	63	14.4%	242	55.1%	197	44.9%

Note. IEP designates “Individualized Education Plan”. Students who have an IEP have a diagnosed disability.

Table 2 is a breakdown of correlation between student disability and family economic status by grade.

Table 2

Pearson's r Correlation Between Student Disability and Family Economic Status by Grade

		IEP		Disadvantaged		
	n	*n*	% pop	*n*	% pop	*r*
Grade 8	156	23	14.7%	62	39.7%	0.29
Grade 7	130	15	11.5%	62	47.7%	0.04
Grade 6	153	25	16.3%	73	47.7%	0.22
Total	439	63	14.4%	197	44.9%	0.19

Note. IEP designates "Individualized Education Plan". Students who have an IEP have a diagnosed disability.

For students in grade 6 in the 2012-2013 school year, Pearson's *r* correlation was 0.29 when considering student disability and economic status. This means that there was a weak correlation between student disability and economic status for students in grade 6 during the 2012-2013 school year.

For students in grade 7 in the 2012-2013 school year, Pearson's *r* correlation was of 0.04 when considering student disability and economic status. This means that there was

almost no correlation between student disability and economic status for students in grade 7 during the 2012-2013 school year.

For students in grade 8 in the 2012-2013 school year, Pearson's *r* correlation was 0.22 when considering student disability and economic status. This means that there was a weak correlation between student disability and economic status for students in grade 8 during the 2012-2013 school year.

For all students combined in grades 6, 7, and 8 in the 2012-2013 school year, Pearson's *r* correlation was 0.19 when considering student disability and economic status. This means that there was a weak correlation between student disability and economic status for all students combined in grade 6, 7, and 8 during the 2012-2013 school year.

DISCUSSION

The purpose of this study was to determine whether or not a statistically significant relationship existed between students' socioeconomic status and having a diagnosed disability at one public, rural, co-educational middle school in the northeast region of the United States.

Utilizing a Pearson's *r* correlation in both separate grade-level and combined grade-level analyses, it was determined that there is little to no relationship between student disability and economic status.

However, one interesting point was discovered that was not part of the initial research.

When determining correlation between student disability and economic status using only students that have a disability, (which constituted 63 students and 14.4% of the population) it was discovered that 68.3% of the students with a disability were also economically disadvantaged. In comparison, when calculating only students that do not have a disability (153 students and 85.6% of the population), it was discovered that 40.7% of the students who do not have a disability were also economically disadvantaged. This information is also found in Table 3 below.

Table 3

Intra-Comparisons of Students With Disabilities Only and Their Economic Status and Students Without Disabilities Only and Their Economic Status

	IEP Students	IEP Students with Economic Disadvantage		non-IEP Students	non-IEP Students with Economic Disadvantage	
	n	*n*	% pop	*n*	*n*	% pop
Grade 8	23	15	65.2%	128	52	40.6%
Grade 7	15	8	53.3%	115	54	47.0%
Grade 6	25	20	80.0%	133	47	35.3%
Total	63	43	68.3%	376	153	40.7%

Note. IEP designates "Individualized Education Plan". Students who have an IEP have a diagnosed disability.

SUMMARY

When this study was proposed, it was believed that there was a correlation between students' socioeconomic status and having a diagnosed disability at the school district utilized in this study. The results of this study indicated otherwise. There is little to no correlation between students' socioeconomic status and having a diagnosed disability. However, the fact that additional analyses indicated that almost 70% of students with a diagnosed disability were also

economically disadvantaged means that a causation analysis is recommended for future study. The results of a future study would assist this school district (and other similar school districts) in determining ways to assist both its students with special needs population and its educational staff so that they can provide appropriate resources that would allow for comparable academic progress with the regular education population (such as an adjusted time schedule, hiring of more teachers/staff, or the purchase of assistive technology).

CONCLUSION

Poverty and disability are similar to the chicken and the egg; one can ask what comes first and either answer works (Seeleman & Sweeney, 1995). Research supports the fact that relationships exist between the two factors. Both disability and economic disadvantage have a negative impact upon students in special education which becomes manifested in their eventual postsecondary conditions. Identification and support of these students, and making attempts to combat them should reduce the lifetime impact and/or resultant conclusion of poverty.

The expected benefit/impact upon student achievement would be to further examine causation (reasons for the correlation), provided that a correlation exists between student socioeconomic status and having a diagnosed disability.

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