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Child Poverty and Its Relation To Academic Achievement and Educational Outcomes

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Research Paper
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Introduction

Millions of children across the United States are living in poverty, and it has been an ongoing problem for decades. Eric Jensen defines poverty as a chronic and debilitating condition that results from multiple adverse synergetic risk factors and affects the mind, body, and soul (Jensen, 2009). Although millions live in poverty, it affects individuals and families in different ways. The federal poverty guideline for a family of four is \$23,050 and approximately 16 million or 1 in 5 children live below the official federal poverty level according to the US Census Bureau's official poverty measure in 2011(Breslow, 2012). UNICEF, the United Nations International Children's Emergency Fund defines a child as a person under the age of 18 unless the laws of a particular country set the legal age for adulthood younger(UNICEF, 2014). A report from the UNICEF states, 32.2% of children live below the poverty line, with the USA ranking 38th out of 41 wealthy countries in the report (Ingraham, 2014). Child poverty rates vary from year to year depending on the economic status of the United States.

There is an increased risk of adverse outcomes for children raised in poverty-stricken households. Observational studies have shown recent poverty to be strongly associated with lower achievement scores, greater likelihood of adolescents dropping out, and lower reading scores than children whose families were never poor(Moore et al., 2009). There is also a high risk of social and emotional problems such as disobedience, impulsiveness, difficulty getting along with peers, greater risk to teen childbearing, and lower self- esteem(Moore et al., 2009). Poor health outcomes are more significant in low-income children; they have a higher chance of food insecurity including not having enough food to eat, an inadequate diet, and a greater risk of accidents and injuries in comparison to children who are not living in poverty(Moore et al., 2009).

This paper will be studying child poverty and its relation to educational outcomes and academic achievement. Examining child poverty is important because children are vulnerable, defenseless, and are in need of someone to advocate for them. For new policy to be implemented and the old system to be updated there must be current research on the topic. My goal is to answer following questions:

1. Does child poverty have an effect on academic achievement?
2. Does child poverty threaten educational outcomes of US children?

This paper aims to add new insight on this topic that has been explored by so many others.

Literature Review

Health and Academic Achievement Educational Outcomes

Health, nutrition, and the environment are three areas of particular interest to academic achievement and educational outcomes in relation to child poverty. Children living in low income households often fare poorly in academic achievement beginning in early childhood and continuing into adulthood(Hair, Hanson, Wolfe, & Pollak, 2015). There are several negative health consequences for children born into poverty such as infant mortality, higher rates of low birth rate, subsequent health, and developmental problems, increased frequency of and severity of chronic diseases such as asthma, greater food insecurity with poorer nutrition growth, increased unintentional injury and mortality, poorer oral health, and increased rates of obesity and its complications(B., P., P., & S., 2016).

One of the first pieces of legislature that addresses child poverty was The Food Stamp Act passed in the Johnson administration, and the goal of it was to allow eligible recipients to purchase food stamps so they could have a nutritional and adequate diet. The Act is implemented today, but there have been many changes to it over the years. The name of the federal program has been modified to SNAP or Supplemental Nutrition and Assistance Program on October 1, 2008, and the Act is now called the Food and Nutrition Act of 2008 to fight stigmas(USDA, 2014). This program is the nation's largest child nutrition program, 47% of recipients are children and over 70% of SNAP benefits go to households with children(Keith-Jennings, 2012).

Programs such as SNAP are preventing thousands of children from being a victim of food insecurity, and it gives them the opportunity to have an optimal level of nutritional balance. According to the US House of Representatives, Committee on the Budget in the year 2012, there were 92 federal programs including cash aid, education and job training, housing, food aid, energy, social services, veterans, and health care designed to help the working class. The Federal Government spent \$799 billion on the programs in the fiscal year 2012(Budget, 2014).

Four important characteristics of a child's well-being include nutrition, health care, physical activity, and low birth weight. Nutrition is fundamental to life due to the energy and support it gives for an individual to maintain a healthy life. Infancy is one of the most significant nutritional periods in a child's life; Jensen emphasizes the importance of proper nutrition during early childhood years for optimal brain development(D.L., K., & K., 2006). According to the American Academy of Pediatrics, breast milk is the most favorable and nutritious for an infant. Research has shown many benefits for young children who are breastfed in their early childhood years(D.L. et al., 2006). A survey was conducted in Mississippi, and the results showed infants residing in poor and low-income families were the least likely to be breastfed, therefore from a young age thousands of children begin life with diets that are not nutritional(D.L. et al., 2006). It is important to educate parents on the significance of proper nutrition so children can obtain the essential minerals, vitamins, and nutrients to maintain a healthy lifestyle.

The Food and Agriculture Organization (FAO) defines food insecurity as "not having adequate physical, social or economic access to food for an active and healthy lifestyle(M., M., & B., 2007)." The first three years of a child's life involves rapid physical and neurological development and requires proper nutrition for a child to reach their full potential in the quality of life as well as educational and earning potential(M. et al., 2007). Nutritional deprivation can result in stunting which is height for age below two standard deviations of mean reference values for healthy growth(M. et al., 2007). An adverse effect of food insecurity is a growth failure labeled "stunting." Stunting by the age of two or three has been shown to be associated with cognitive deficits later in life, poor school achievement, and high rates of school dropout(M. et al., 2007).

In 2013, an estimated 20% of households with children experienced food insecurity, and the rate of food insecurity for children living in poverty is nearly 40%(Pascoe et al., 2016). For African-American and Latino families the rates are three times higher than children in White households, immigrants also exhibit higher rates in comparison to US citizens, and female-headed household suffers more than any other group(M. et al., 2007). Food insecurity has a major effect on physical and cognitive development, the lack of nutritious food increases the likelihood of iron-deficiency anemia, lower academic achievement, and behavior problems(Pascoe et al., 2016).

High infant mortality rate and low birth weight have been an ongoing problem in the United States for years. Children in the poorest 20% of urban populations are twice as likely to

die before their first birthday compared with children in the richest 20% of the population(Pascoe et al., 2016). Low birth weight has often been used as a leading predictor of first-year mortality risk in infants(Pascoe et al., 2016). Poor child development can begin in utero; a mother may be undernourished leading to low birth weight which is defined as infants weighing less than 2,500 g at birth(M. et al., 2007). As the risk of low birth weight in poor neighborhoods increases, there is an association with high teen pregnancy and inadequate prenatal care(Pascoe et al., 2016).

Children in the US from poor communities have the highest rates of obesity, with being seven times as likely to be obese as they are to be underweight(Pascoe et al., 2016). The alarming rates stem from high calorie foods such as fast food, junk food, and candy. Poor children and adolescents are more likely to be exposed to tobacco which may increase the risk of cardiovascular and pulmonary disease as adults(Pascoe et al., 2016). Increase frequency of asthma attacks, and poor health status is also a factor of chronic poverty, it has been estimated that asthma accounts for 10 million days of school missed each year, which three times the amount of missed school for children with a chronic health condition(Pascoe et al., 2016).

Environment and Academic Achievement/Educational Outcomes

The environment where a child grows up can have a major effect on their life. Children who grow up in poverty are more exposed to violence, instability, maternal depression, chaotic households, and environmental contaminants. These stressors can set back child development and later educational outcomes. Poverty affects family housing options because they are limited to urban areas with crowding, violence, and lack of safety; to the countryside that is isolated and lacks social support, or to suburban neighborhoods that are affected by foreclosures and deteriorating housing stock(Pascoe et al., 2016). Poor neighborhoods face increased levels of crime, violence, and toxic exposure; there may also be a lack of quality schools, sustainable jobs, health care facilities, safe recreation spaces, and other resources that support healthy communities(Pascoe et al., 2016).

Southern states have higher percentages of poverty because majority of the states in the south exhibit moderate to high levels of child poverty compared to those in northern states 22% of children living in Georgia experience poverty in the year 2009(Pascoe et al., 2016). Community poverty exists among vast and small cities and in neighborhoods poverty can be more concentrated in particular areas(Pascoe et al., 2016). Rural child poverty rates have increased in recent years to 26.7% in comparison to 20.9% for metropolitan areas(Pascoe et al., 2016). Black, Hispanic, and American Indian/Alaska Native children are more likely to live in neighborhoods of concentrated poverty than Asian or white non-Hispanic children(Pascoe et al., 2016). Poor and minority children are in double jeopardy because of the lack of resources within their family and exposure to pernicious influences or lack of social support in urban, suburban, and rural areas with concentrated poverty(Pascoe et al., 2016).

Household chaos has been defined as “systems of frenetic activity, lack of structure, unpredictability in everyday activities, and high levels of ambient stimulation(Garrett-Peters et al., 2016).” Studies have shown that household chaos, such as noise, crowding, and lack of family resources can act as statistically mediating variable in associations between poverty and socioemotional and cognitive competencies among school-age and adolescent children(Garrett-Peters et al., 2016). Low-income families who reside in rural areas are more subject to experiencing chaos in their home due to lack of resources in rural areas such as longer distance to work. Childcare, school, limited public transportation, and fewer jobs with standard work

hours(Garrett-Peters et al., 2016).

Chaotic home environments are hypothesized to interfere with children's abilities to follow the rules of discourse and social exchanges, as well as the development of attention and regulatory process which are vital for academic success(Pascoe et al., 2016). Household chaos can create stressful situations that diminish opportunities for active and sustained interactions between children and adults that support learning(Garrett-Peters et al., 2016). Several studies have been conducted to understand the effects of parent-child interactions on child outcomes; some evidence has linked poverty to lower-quality parent-child interaction(Brooks-Gunn & G., 1997). An National Longitudinal Survey of Youth found that poor mothers spanked their children more often than non-poor mothers and the harsh behavior is an important component of the effect of poverty on children's mental health(Brooks-Gunn & G., 1997). Research shows, children from low-income families hear fewer words in the first three years and the context of the language they are exposed to is more negative and punitive compared with higher-income households(Pascoe et al., 2016).

Parents in chaos households often exhibit uninvolved or authoritative parenting due to irregular work hours, fatigue, or stress. In uninvolved parenting styles, children are subject to grow up faster than their peers because of lack of parental attention. For example, a single mother works overnights; therefore, the eldest child may be responsible for making dinner, doing the dishes, folding laundry, helping with homework, and watching over the siblings, tasks that an adult would normally do if present. The children are raising themselves in a sense, and it can be seen as a form of child neglect. In authoritative parenting styles, the parents make all the decisions and the children have little to no input. Parents may yell, cuss, or scream at the child to get their point across.

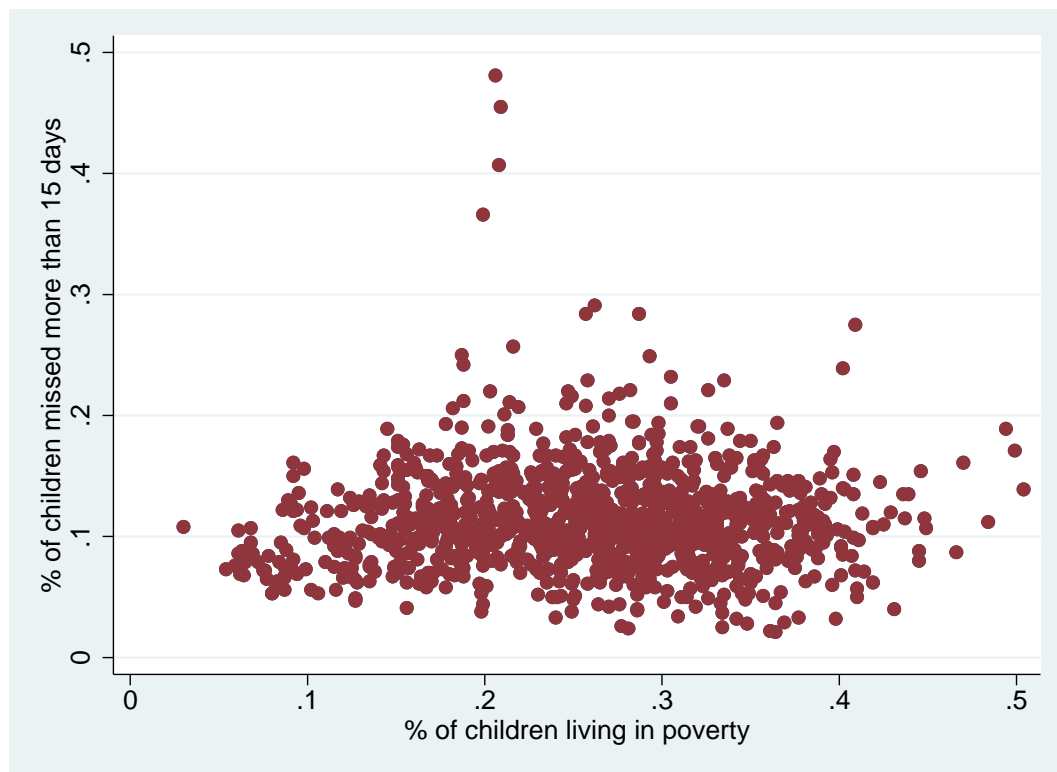
Children living in chaotic homes may adapt to the environment by blocking out and withdrawing from the overstimulation in the home; research has shown that children may extend the withdrawal to the school and classroom settings(Garrett-Peters et al., 2016). Chaotic homes have been found to have a direct negative impact on academic success in school-age children, elementary school children whose mothers reported low household order and routine demonstrated poorer reading skills, and 12-year old children scored lower on school achievement test in comparison to peers who perceived less home chaos(Garrett-Peters et al., 2016).

Parental mental health is an important factor in child development. Parental irritability and depressive symptoms are associated with more conflicting interactions with adolescents, leading to little emotional, social, and cognitive development(Brooks-Gunn & G., 1997). Children of depressed parents are more likely to have social and academic difficulties as well as internalizing and externalizing behavioral problems(Sektan, McClelland, Acock, & Morrison, 2010). A study was conducted and the results showed children of mothers who experienced depressive symptoms chronically exhibited lower verbal comprehension and school readiness skills at 36 months, less cognitive and motor functioning from 28 to 50 months, and more academic problems at the end of 1st grade in comparison to children of mothers who did not report experiencing depressive symptoms(Sektan et al., 2010).

Panel Analysis was used to test the question; does child poverty have an effect on academic achievement, with use of the high school dropout rate trends. Linear Regression was used to test the question; does child poverty threaten educational outcomes of US children with use of the excessive absenteeism trends.

Data

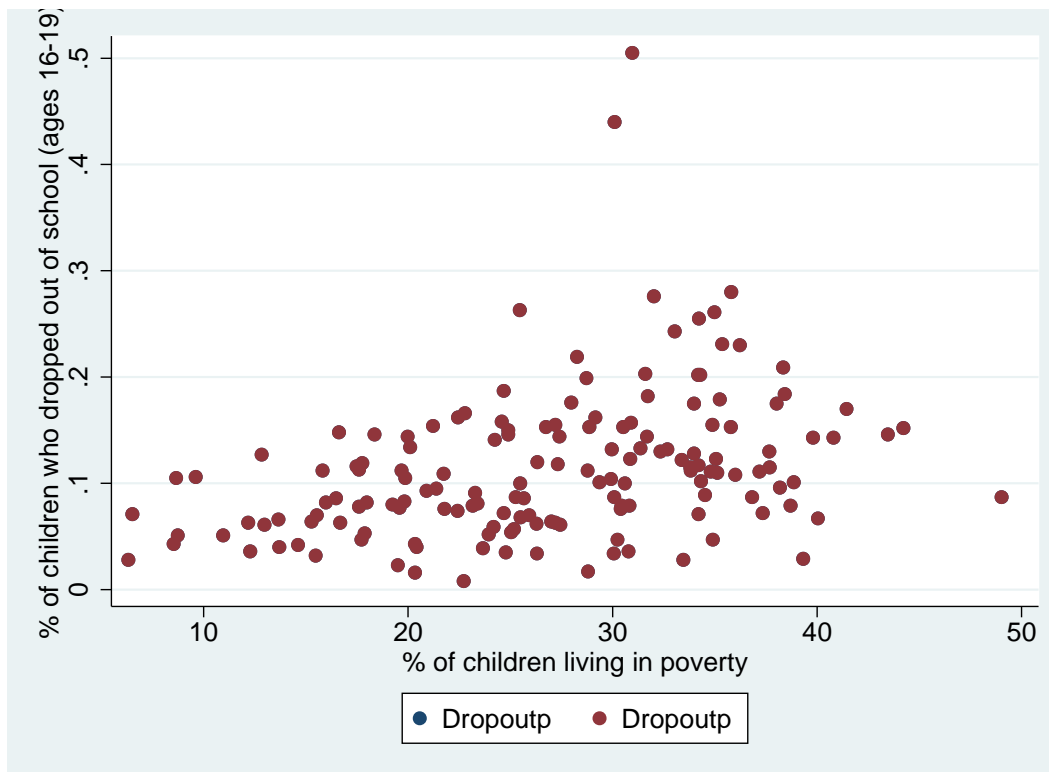
Overall data sources were drawn from the KIDS COUNT Data Center an online resource used to obtain data on the economic well-being of all 50 states from a variety of sources. The data specifically came from Georgia Family Connection Partnership, Inc. (GFCP), focusing on the 159 counties in the state of Georgia. No longitudinal studies were conducted throughout the research process. Data includes child poverty, excessive absenteeism, and high school dropout rates. Child poverty has been defined as the number and percentage of children age under 18 who are living in families with income below the federal poverty level. Excessive absenteeism is defined as the number of students who are absent more than 15 days from school. High school dropout rates are defined as the number of youth ages 16 to 19 who are not enrolled in school and not high school graduates.



(Table 1) Excessive Absenteeism and Child Poverty rates

Table 1 shows little correlation between excessive absenteeism and child poverty. correlation is defined as the relationship between two variables. The scatterplot shows data each year between 2003-2009 in all 159 counties in GA. Majority of the data falls between 10%-40% of children living in poverty and less than 30% of children missed more than 15 days of school. The outlier is Towns County with four points above 36.6%. In 2003, 19.9% of children lived in poverty and 36.6% missed more than 15 days of school and in 2005 20.8% of children lived in poverty and 40.7% of them were excessively absent from school. In 2006, 20.9% of children lived in poverty and 45.5% were excessively absent. In 2007, 20.6% of children lived in poverty and 48.1% were excessively absent.

Towns County is a small county with a population of 11,042, there are only two cities in the county and the total area is 166.5 square miles (Cities and Counties 2015). This county is located in the Blue Ridge Mountains and Georgia's highest mountain is located within this county, making it a rural area (Cities and Counties 2015). There is only one school district in Towns County. Towns County High School has a total of 366 students (Georgia School Districts 2014). 51% of students are economically disadvantaged which is a measure of student poverty, 42% of student receive Free Lunch, and 9% of students receive Reduced-Priced Lunch (Georgia School Districts 2014). The location of the county being a rural area and the fact that 51% of students receive free or reduced price lunch explains the oddity of a very high excessive absenteeism rate.



(Table 2) Children who are high school dropouts and Child Poverty rates

Table 2 shows a weak correlation between child poverty rates and high school dropouts between the ages of 16-19. Majority of the data falls between 0%-40%, of children living in poverty and 0%-30% of children who dropped out of school. This data tested to see if the high school dropout rate and child poverty rates would capture academic achievement. The scatterplot shows data from an average of the years 2005-2009. The outliers are Dodge and Irwin county. Dodge county had a child poverty rate of 30.1% and 44% of children dropped out of school, it has a population of 20,116, occupies 500.6 square miles, and there are only four cities in the county (Cities and Counties 2015). It is an agricultural county and there is only one school district within the county. Dodge County High School has a total of 872 students (Georgia School Districts 2014). 67% are economically disadvantaged, a measure of student poverty.

60% of student receive Free Lunch and 7% receive Reduced Lunch (Georgia School Districts 2014). I

Irwin County has a child poverty rate of 30.96% and 50.5% of children dropped out of school. There is a total population of 10,231, covers an area of 356.8 square miles, and there is only 1 city within the county (Cities and Counties 2015). The county is rural and is located in south central Georgia. There is one school district within the county and a total of 443 students at Irwin County High School (Georgia School Districts 2014). 63% of the students are economically disadvantaged, a measure of student poverty (Georgia School Districts 2014). 53% of students receive Free Lunch and 10% receive Reduced Lunch (Georgia School Districts 2014). These two counties are relatively small in total population as well as having a majority of students apart of the Free Lunch or Reduced Lunch program, a significant variable in the high rates of high school dropouts.

In the bottom right hand corner is an outlier county. Clay County has a child poverty rate of 49% and a high school dropout rate of 8.7%. There is a total population of 3,231, the total area is 195.2 square miles, and there are two cities in this county (Cities and Counties 2015). There is one school system in this county that serves elementary and middle school students and high school students attend in Cuthbert, GA which is located in Randolph County. Randolph County has a poverty rate of 37.68% and 11.5 children dropped out of high school. Randolph County has a total of 345 students, 81% receive Free Lunch and 8% receive Reduced Lunch (Georgia School Districts 2014). One factor that permits the high school dropout rate for Clay County to be relatively low is the fact that there is no high school directly in the county.

Methodology

To determine if child poverty threatens the educational outcomes of US children linear regression was used to test the relationship between child poverty and the high school dropout rates in all 159 counties in Georgia. The study population included an average of data from the years 2005-2009. The dependent variable is dropout rates, and the independent variable is child poverty of the Georgia state level in a particular county.

$$Dropouts_i = \beta_0 + \beta_1 \times Poverty_i + \varepsilon_i, (1)$$

i = 159 counties in Georgia.

Panel analysis was used to determine the relationship between excessive absenteeism, children missing more than 15 days of school and children living in poverty in all 159 counties in Georgia. This method was chosen to observe absenteeism and child poverty trends over a period of seven years to test the research question; does child poverty have an effect on academic achievement. The study population included data from the years 2003-2009. The dependent variable is the percentage of children who missed school excessively, and the independent variable is the number of children in poverty in the particular county.

$$Absenteeism_{i,t} = \beta_0 + \beta_1 \times Poverty_{i,t} + \varepsilon_{i,t}, (2)$$

for i = 159 counties in Georgia, from year t from 2003 to 2009.

Findings

Panel data was used to see trends in the data, and the results show the relationship between absences and poverty to be relatively weak. The coefficient of the interest is .17 therefore when child poverty increases by 100, 17 children will be subject to excessive absenteeism. P value of the coefficient of poverty is less than 5%; therefore, the coefficient is statistically significant.

absencesn	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
povertyn	.1792033	.0117163	15.30	0.000	.1562398	.2021668
_cons	564.5811	92.60297	6.10	0.000	383.0826	746.0796
sigma_u	911.14076					
sigma_e	515.62033					
rho	.75743231	(fraction of variance due to u_i)				

STATA output data (1)

Linear regression was used to test the hypothesis and results showed the relationship between child poverty and dropout rates to be nonexistent. The estimated coefficient on poverty in equation 2 is -15.008 therefore for every 1% increase in child poverty there is a 15.08% decrease in the dropout rate. P value of the coefficient of poverty is less than 5%; therefore, the coefficient is statistically significant. There are shortcomings such as family structure and academic achievement which are difficult to measure such as household structure and academic achievement.

Source	SS	df	MS	Number of obs	=	159
Model	2652813.57	1	2652813.57	F(1, 157)	=	10.21
Residual	40808920.7	157	259929.431	Prob > F	=	0.0017
Total	43461734.2	158	275074.267	R-squared	=	0.0610
				Adj R-squared	=	0.0551
				Root MSE	=	509.83

dropoutn	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
povertyp	-15.08844	4.723008	-3.19	0.002	-24.41727	-5.759605
_cons	717.4684	133.5239	5.37	0.000	453.7335	981.2034

STATA output data (2)

Discussion

The purpose of this research is to determine if there is a correlation between child poverty and academic success as well as child poverty and educational outcomes. Based on the data results, I found that child poverty has a little effect on academic achievement, out of 100 children less than ¼ of them will miss more than 15 days of school. This result does not agree with my hypothesis, but some limitations cannot be measured such as family structure, parenting styles, and household chaos which could have an effect on the results. Overall, the study's data did not associate child poverty and educational outcomes and academic achievement as a negative correlation as hypothesized. Poverty is associated with other dimensions such as educational backgrounds of parents, low income neighborhoods, household and parental structure which influence the behavior and development of a child.

Poverty reduction requires a life-cycle approach that must be implemented during a child's early years to ensure school readiness, involving family and other proximal contexts, and focuses on the indirect process linking poverty to child development and educational outcomes, but there is no magic bullet that can be applied across all settings to ensure the escape from poverty(Engle & Black, 2008). In the future to test the hypothesis I would add median household income as a variable, because income determines if a family is living in poverty or not. For example, an area with high median income such as Forsyth County would have lower levels of child poverty versus Decatur County with a low median income would have higher rates of child poverty. This is an important factor to include in future studies because of the strong effect household income has on poverty levels. Literature shows, as family income increases the measures of child well-being and student achievement increases as well(D.L. et al., 2006).

Instead of fixing the person we should correct the problem by looking at the issues, situations, and circumstances that caused poverty so for future generations the problem can be lessened. According to The Social Learning Theory, people behave the way they do based on their social environment both indirectly and directly. Children learn based on observation and their environment therefore they need the right mentors, support, and programs training and leading them in the way that they should go.

Intervention methods include early child learning experience starting at the preschool level and parental involvement in early intervention programs. The Child-Parent Center Program was implemented in Chicago, enrolling 1500 low-income children and provided comprehensive services from kindergarten through 3rd grade, longitudinal follow up from the study has shown child to more likely graduate from high school, attend college, be enrolled in health insurance, and less likely to have felony arrests, convictions, or depressive symptoms(Engle & Black, 2008).

The Perry School Preschool Program and the Abecedarian trials are effective, high quality studies(Engle & Black, 2008). The Perry School Preschool Program began when children were three and four years old and provided intensive preschool education and home visits for children in poverty(Engle & Black, 2008). The Abecedarian Project began during the 1st year of life and provided intensive services to poor and African-American mothers and children for five years(Engle & Black, 2008). It is essential to invest in a child when they are young. Many children born into low-income families are subject to teen pregnancy, dropping out of school, and committing violent crimes based on the circumstance they were born into. If evidence-based intervention programs can be implemented in communities, productivity of society can be boosted and reserve the adverse environmental effects of disadvantaged environments.

Conclusion

There is a culture of poverty in America with many assumptions and beliefs that poor people have weak motivation to work. Many Americans believe that poor people are impulsive, make bad money decisions, and are not good at long range planning. Few understand that if you are born into the cycle it will continue for generations. Social dislocation is a factor that sustains poverty because children are placed in a social isolation therefore they do not have the skills and opportunities to grow and advance in life.

In conclusion, the purpose of this paper was to answer the questions “Does child poverty have an effect on academic achievement?” and “Does child poverty threaten educational outcomes of US children?” The answer to both of these questions is yes. Poverty affects how a child grows up because they are exposed to a variety of adverse factors such as limited access to health/food resources and living in low income areas. If these issues are not addressed in the early stages of childhood development a child can be subject to a life of despair. Frederick Douglass stated, “It is easier to build strong children than to repair broken men.”

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