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Societal Structure and Stability in Low-Income Families in Arkansas

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Abstract

Societal structure is not built to support a single-parent household positively. This can be shown by research measuring children's development in poverty, the median household income of single parents, and food insecurities and obesity of children in poverty. The first goal of this research is to investigate the patterns of struggle that single-parent families experience in low-income households. These patterns of struggle in low-income households will include poverty, race/ethnicity, and child development (e.g., education). The second goal is to investigate the policies in place to help single-parent families and why they are inefficient in assisting them. These goals helped narrow down previous research findings that brought to the surface the disadvantages single-parent families experience, why stability is critical for child development, and how poverty can impact upbringing (e.g., food insecurities).

SOCIETAL STRUCTURE AND STABILITY IN LOW-INCOME FAMILIES IN ARKANSAS

Throughout the state of Arkansas there are seventy-five counties that have variables targeted for this research study. We began with the idea that there was a positive correlation between children living in single-parent households to household demographics like food insecurity, low health literacy, childhood obseity, and poverty. The literature implies that single-parent households are more likely to live in poverty than dual-parented households. Firstly, we hypothesize that counties in Arkansas with higher percentages of children living in single-parent households will contain higher percentages of children living in poverty. Therefore, our hypothesis seeks to find if the counties in Arkansas that accommodate higher rates of children living in single-parent households have higher rates of children in poverty. The literature also implies a lack of policies pertaining to the family structure of single-parented families; in response, there is a lack of overall health and educational resources for children raised in single-parent households. Secondly, we hypothesize that counties in Arkansas with higher percentages of children living in single-parent households will result in higher percentages of food insecurity, obesity, and low health literacy. This hypothesis will seek to find if the counties in Arkansas that accommodate higher rates of children living in single-parent households have higher rates of food insecurity, obesity in their youth, and low health literacy.

Literature Reviews

Single Parenthood and Children's Educational Performance: Inequality Among Families and Schools

In this article Marloes de Lange and Jaap Dronkers (2018) discuss and examine the relationship between single parenthood and children's educational performances. They indicate that children growing up in single-parent households are disadvantaged compared to those growing up in coupled-parent families. They detail that children in single-parent households

commonly endure economic deprivation and a lack of parental support. They use three distinct theoretical frameworks to explain the relationship, financial resources, parental involvement, and social resources. Using this framework, they ask, "To what extent does inequality in educational performance exist between children from single-parent families and children from coupled-parent families due to a lack of resources in the family? To what extent is inequality in educational performance between children from single-parent families and children from coupled-parent families larger at schools with higher shares of children from single-parent families? To what extent can the inequality in educational performance be explained by the socioeconomic and social resources and by the educational quality of the school?" (Lange and Dronkers 2018) The scholars use data from Programme for International Student Assessment on twenty-five different industrialized countries, including the United States, and 641,194 students. They use students' educational performances scaled by mathematical literacy as a dependent variable, family form, parental level of education, parental occupation status, home possessions, percentage of single-parent families, shortage of qualified teachers, and student-staff ratio as their independent variables. Using these variables, Lange and Dronkers discover a significant inequality between children in single-parented households and couple-parent households. The data displays substantially lower educational performances in children from single-parented homes. They also call attention to finding a link between schools with higher percentages of single-parented children and insufficient educational resources. They end their conclusion with suggestions to eradicate or decrease this inequality. They propose encouraging children in single-parented households to become more involved in extracurricular activities and government-subsidized school materials.

Economic Instability and Household Chaos Relate to Cortisol for Children in Poverty

This research article sought a relationship between cortisol levels and family income. material hardship, financial strain, economic instability, and household chaos. The researchers included in the study were Eleanor D. Brown, Kate E. Anderson, Mallory L. Garnett, and Erin M. Hill (2019). The researchers wanted to know if having these environmental characteristics affected the high or low cortisol levels in that child. The researchers hypothesized that economic instability would show direct statistical effects on child cortisol and indirect effects via household chaos (Brown et al. 2019). The sample size of this project was 374 children between the ages of 3 and 5 years old. The independent variable was the demographics of the children; this would include age, sex, race/ethnicity, and family income. The dependent variable was cortisol levels. Other variables included material hardship, financial strain, economic instability, and household chaos. The findings of this research project were as follows: Economic adversity relates to child cortisol indirectly through economic instability and chaos. Economic instability relates to child cortisol directly by way of household chaos. Results support that instability holds great importance for a developing child (organism) because of the impact instability can have on the developmental stage (Brown et al. 2019). Research has found a solid and predictive relationship between poverty and adverse child outcomes; this article details that in order to break this relationship, stability is critical and needs to be maintained. This article helps to build the connection between children in poverty and how it affects them as they grow up. The researchers used children between ages 3 and 5, which builds character to the evolution of a child through those listed conditions. This supports our outcome of children growing up in

poverty with a single parent; this research adds the specific chemical, cortisol, they search for to understand the children's development over time.

Multiracial Children and Poverty: Evidence From the Early Childhood Longitudinal Study of Kindergartners

This research article sought to question if poverty rates depend upon racial combinations by testing multiracial children (Bratter and Kimbro, 2013) Their first hypothesis stated: Multiracial child poverty will be either between two racial groups or be toward the least advantaged minority group. Their second hypothesis stated: Multiracial children of partial Black backgrounds will be closer to their Black monoracial peers in terms of poverty, whereas non-Black multiracial will exhibit lower rates of poverty. Their final hypothesis stated: Poverty rates of multiracial children will lower for those with fathers of the racial group with a more advantaged poverty profile (i.e., whites) compared to children of the same racial combination whose mother is from the more advantaged poverty profile group. The sample size used in this research was 17,706 kindergarteners. The independent variable was multiracial and monoracial kindergarteners, while the dependent variable was the poverty rate. Other variables included: racial background, demographic/family composition, family structure, maternal education, and family labor force participation. The research results were as follows: According to the first hypothesis, multiracial groups (including black whites, Hispanic whites, and American Indian whites) have lower poverty and near-poverty rates than their minority monoracial but still have high poverty or near poverty than whites. There was no support for the second hypothesis, but it did find that children with dual minority backgrounds are more disadvantaged than children with partial white backgrounds. Evidence was found to support hypothesis 3, but the occurrence only happened with Hispanic Whites and was explained as non-significant. This research article helps

form our current research by implementing another variable, ethnicity, that could explain why these children, more specifically, are indicators of food insecurity, obesity, and low health literacy.

Child Obesity Moderates the Association Between Poverty and Academic Achievement

In the research article, Child Obesity Moderates the Association Between Poverty and Academic Achievement; the researchers sought to find out if there was a relationship between children growing up in poverty, whether they were overweight or obese, and academic success within the home. Before continuing with the data, the researchers found a link between child poverty and academic success, following the linkage between childhood poverty and obesity—finally, the linkage between childhood obesity and academic achievement. The authors examine their essential findings on childhood obesity and poverty. "Children who experience poverty are 1.5 times more likely to suffer from being overweight and 1.6 times more likely to have obesity" (Kranjac and Kranjac, 2021). Looking further into this data, they hypothesized that this has a negative influence not only socioeconomically but also on academic performance. From there found that obesity is more common in those with lower socioeconomic backgrounds in reading and mathematics. This study's measures were noted as academic achievement, overweight and obesity status, and poverty status. The researchers did a longitudinal study. They selected participants from a multi-stage sampling design and examined a representative sample of 21,260 U.S. children from kindergarten to the eighth grade. The final results show that children overweight have a moderate pathway to childhood poverty and low academic success.

Patterns of Income Instability Among Low- and Middle-Income Households with Children

In the article, *Patterns of Income Instability Among Low- and Middle-Income Households* with children by Sharon Wolf, Lisa A. Gennetian, Pamela A. Morris, and Heather D. Hill

discusses the relationship between a monthly income over a low-level period in correlation to children, and if there is a variation within this data. The authors discussed that with political policies, this is the biggest group affected by changing laws and status fluctuation. In doing this research, they hoped to expand on the effect of income instability on the family and the child's psychological and physical development. This study was done over three years, considering demographics, household income, and households with a child ages 0-18. Using this criterion, they looked into their three-part hypothesis: "Is there a statistically detectable variation in monthly income level over nearly three years in a sample of low- and middle-income households with children, and do trajectories of income differ across households? If so, how can households be categorized concerning measures of income level and income instability, recognizing the interdependent nature of measures? Moreover, what characterizes households with differing income profiles in terms of demographic characteristics, potential events that precipitate instability, and parental and child outcomes." (Wolf et al. 2014). The finds showed that households with higher-income children were more likely to carry on to get a college degree. more likely to get married, less likely to receive public assistance, and more likely to own their own homes than those in the lower-income cluster. 52.2% of low-income households were likely to experience a decline in employment compared to 19.3% of stable middle-income families. Finally, lower-income children had higher explosion/ suspension rates in school compared to middle to higher-income children. This concerns higher levels of instability within the home of lower-income households. They conclude that houses with higher income instability tend to see higher rates of employment loss, children struggling in schools, and policies that prevent low-income households from excelling. Although these anti-policies are put into place to assist in employment rates, they are one of the main contributing factors to income instability due to

the abrupt loss of benefits that happen often. These programs only offer employment status, work hours, and wages. Instead, they say, "This reality argues for policies that not only help households increase their income but also assist them in smoothing consumption during periods of income disruption and building financial cushions through savings and asset building" (Wolf et al. 2014).

Single-Parent Families: Are Their Economic Problems Transitory or Persistent?

Duncan and Rodgers (1987) attempt to create a link between family structure and the persistence of economic troubles. The two scholars provide a secondary data analysis of data collected by the Panel Study of Income Dynamics to analyze the relationship between economic status and household structure. What they find is a clear correlation between family structure and economic success. They describe it as "An impressive body of evidence linking the economic well-being of children to their living arrangements." (Duncan and Rogers, 1987) They articulate there are three reasons why we should expect single-parent families to be less economically successful. The first is that dual-parented households can have two incomes. This also implies more freedom for work schedules and childcare balancing. The second reason is that women are more likely to head single-parent households, and they are more likely to experience gender-based pay disparities. The third reason is that there is little aid offered to financially help single-parent families. What aid is offered, is very insignificant.

Theoretical Review

A theory that has been used to explain the social design of single-parent families is the dynamic systems theory. This has also been mentioned as the 'family systems theory.' Dynamic systems theory operates under the assumption that family structure is constantly changing, never

obtaining a definitive definition of the family. This theory suggests that behaviors, roles, and norms for single-parent families are constantly changing over time.

Methods

Data Collection Method

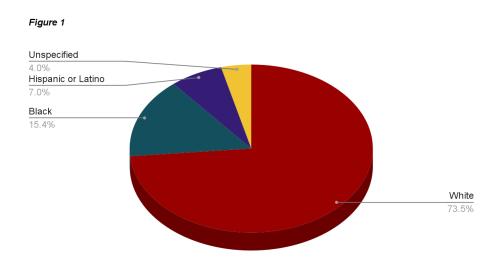
Data collection was made by using the country health fact sheets for Arkansas on the Arkansas Department of Health website. This data was collected by the state of Arkansas between the years 2017 and 2018. This data was collected by the department by the use of customer relationship management (CRM) systems, electronic health records (EHR) systems, and other built software that provides the health department with access to many records. Using secondary data analysis, we will analyze data collected by the Arkansas Department of Health in 2017. We will examine all seventy-five counties listed on the 2017 Arkansas County Health Fact Sheets. The fact sheets provide statistics based on demographics, economic indicators, injury, health indicators, and major health risk factors. The reports use the 2010 Census Bureau for population ratios. The Census Bureau is the premier data collection agency in the United States. The importance of the reports on Arkansas counties is to create healthier and safer communities in Arkansas. (Arkansas Department of Health, n.d.)

Arkansas Demographics and Economic Statistics

The total population of the state of Arkansas is approximately 2,968,483. The data set is 73.4% white, 15.4% black, 7.0% Hispanic or Latino origin, and 4.2% unspecified (Figure 1). The median household income is \$42,336. The average life expectancy from birth is 76 years. The percentage of children living in poverty is 26.8%. The percentage of children living in poverty ranges from 10.7% in Saline County to 52.7% in Phillips County (Figure 2). The percentage of children living in single-parent homes is 35.4%. The county with the highest percentage of

children living in single-parent homes is Phillips County at 58.6%. The county with the lowest percentage of children living in single-parent homes is Searcy County at 14.8%. The percentage of adults with basic or below health literacy skills is 37.1%. The percentage of obesity in youth is 22.0%. The percentage of the population who do not have a reliable food source is 18.4%.

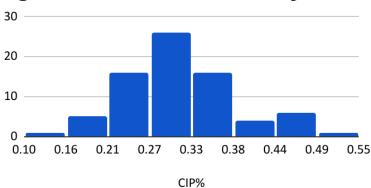
Ethnic Demographics in Arkansas



This pie chart represents the total population within the seventy-five and the ethnic demographics within that population.

Distribution of Children in Poverty in Arkansas

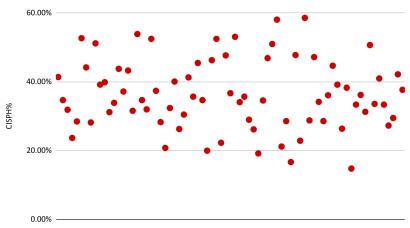
Figure 2 - Children In Poverty %



At least twenty-five counties, out of the seventy-five measured, have between 27% and 33% children in poverty. About fifty-five of the counties have between 21% and 38% children in poverty, while about eight counties have between 44% and 55% children in poverty.

Distribution of Children Living in Single-Parent Homes in Arkasnas

Figure 3 - Children Living in Single Parent Homes



This scatter plot represents the seventy-five counties with children living in single parent homes. There are three counties that are below the 20% line, while majority are on or over the 20% line describing that 96% of counties in Arkansas have children living in poverty.

Measures

Independent variable used in this research was children living in single-parent households: A single-parent or one-parent family implies that one mother or father provides for the children/child. It is comprised of one parent and their children/child. Dependent variables used were children living in poverty, defined as children who are living in households whose income does not exceed the Federal Poverty Line. The Federal Poverty Line varies depending on the size of the family. Food insecurity is defined as the condition of not having access to sufficient food or adequate quality to meet someone's basic needs. Obesity in youth is the state or condition of being very fat or overweight. Health literacy is defined as the degree to which individuals can find, understand, and use information and services to inform health-related decisions and actions for themselves and others.

Descriptives for Variables

	Children in Single Parent Households	Children in Poverty	Food Insecurity	Childhood Obesity	Low Health Literacy
Mean	36.36%	31.01%	19.13%	23.52%	38.61%
	(3324.55)	(2515.45)	(7138)	(1506.75)	(10632.35)
Median	34.7% (1624)	30.40% (1419)	18.10% (3710)	23.50% (778)	37.30% (5769)
Mode	34.7%	32.30%	20.5%	21.90%	41.80%
	(n/a)	(1199)	(6470)	(n/a)	(2902)
Standard	10.10%	7.98%	4.01%	3.27%	5.74%
Dev.	(5479.45)	(3577.75)	(10659.6)	(2141.2)	(14807.6)

This chart displays the categories of interest, like children in single-parent households, and then displays the mean, median, mode, and standard deviation of the 2.9 million people included within the 75 counties measured.

Analysis

Using SPSS, we will be testing the correlation between single-parent households and children in poverty, obesity in youth, food insecurity, and low health literacy. Using an analysis of the correlation between the variables we will be able to make implications for the relationships between them. We will be running a bivariate correlation analysis. The test will be run for the percentages, as well as the raw numbers for each variable. The test will examine if there is a correlation between our independent variable and our dependent variables, as well as exhibit the strength of the correlation. The test uses Pearson's correlation coefficient which ranges from negative one to one. The negative one being the weakest correlation, and the positive one being the strongest correlation. A correlation coefficient of one would be considered a perfect correlation. We will also be testing for significance to determine if the correlation is a chance occurrence. We believe there is a statistically significant relationship between children in single-parent households and childhood obesity, food insecurity, children in poverty, and low health literacy. We will run SPSS to maintain our findings and use Excel for our basic statistics. We will use SPSS to check our Excel findings as well.

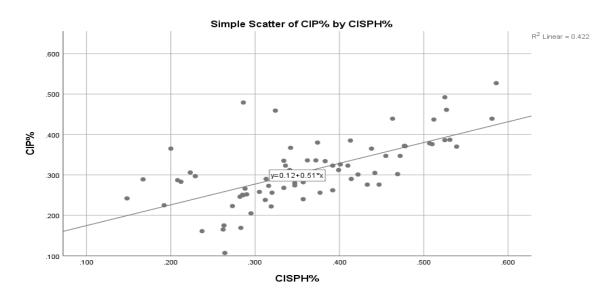
Results

The Pearson correlation coefficient for testing the correlation between the number of children living in single-parent households and the number of children in poverty is 0.985 with a p-value of 0.000. The Pearson correlation coefficient for testing the correlation between the percentage of children living in single-parent households and the percentage of children in poverty is 0.650 with a p-value of 0.000. This suggests that there is a statistically significant moderate to high correlation between children living in single-parent households and children in poverty. These findings provide evidence for our first hypothesis. Counties that have higher

percentages of children living in single-parent households, will likely have higher percentages of children in poverty. Figure 4 is a scatter plot of children in single-parent households (x-axis) and children in poverty (y-axis).

Children in Poverty (CIP) in Correlation to Children in Single-Parent Households (CISPH)

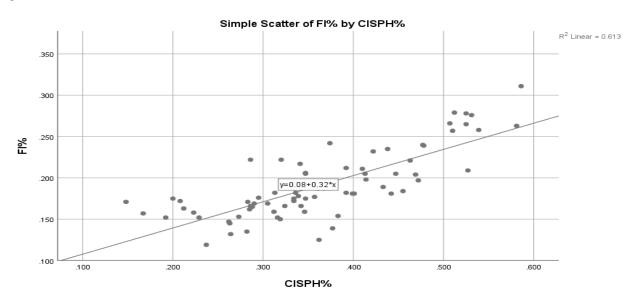




The Pearson correlation coefficient for testing the correlation between the number of children living in single-parent households and the number of households experiencing *food insecurity* is 0.994 with a p-value of 0.000. The Pearson correlation coefficient for testing the correlation between the percentage of children living in single-parent households and the percentage of food insecurity is 0.783 with a p-value of 0.000. This suggests that there is a statistically significant high correlation between children living in single-parent households and food insecurity. These findings provide evidence for our second hypothesis. Counties that have higher percentages of children living in single-parent households, will likely have higher percentages of food insecurity. Figure 5 is a scatter plot of children in single-parent households (x-axis) and food insecurity (y-axis).

Food Insecurity (FI) in Correlation to Children in Single-Parent Households (CISPH)

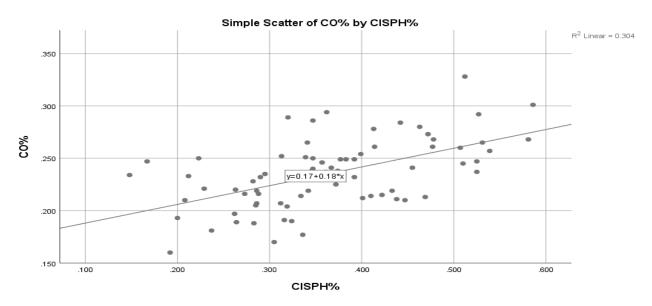
Figure 5



The Pearson correlation coefficient for testing the correlation between the number of children living in single-parent households and the number of obese youth is 0.966 with a p-value of 0.000. The Pearson correlation coefficient for testing the correlation between the percentage of children living in single-parent households and the percentage of obese youth is 0.551 with a p-value of 0.000. This suggests that there is a statistically significant moderate correlation between children living in single-parent households and obesity in youth. These findings provide evidence for our second hypothesis. Counties that have higher percentages of children living in single-parent households, will likely have higher percentages of obesity in their youth. Figure 6 is a scatter plot of children in single-parent households (x-axis) and obesity in youth (y-axis).

Childhood Obesity (CO) in Correlation to Children in Single-Parent Households (CISPH)

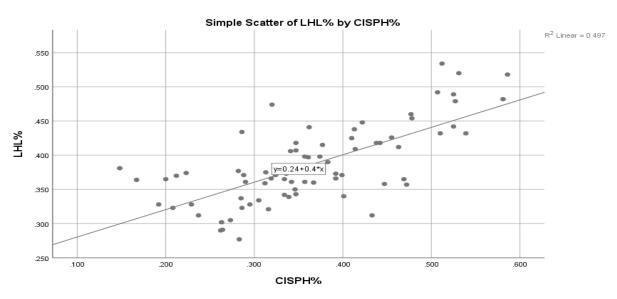
Figure 6



The Pearson correlation coefficient for testing the correlation between the number of children living in single-parent households and the number of households reporting low health literacy is 0.986 with a p-value of 0.000. The Pearson correlation coefficient for testing the correlation between the percentage of children living in single-parent households and the percentage of low health is 0.705 with a p-value of 0.000. This suggests that there is a statistically significant moderate to high correlation between children living in single-parent households and low health literacy. These findings provide evidence for our second hypothesis. Counties that have higher percentages of children living in single-parent households, will likely have higher percentages of low health literacy. Figure 7 is a scatter plot of children in single-parent households (x-axis) and low health literacy (y-axis).

Low Health Literacy (LHL) in Correlation to Children in Single-Parent Households (CISPH)





Discussion

Our findings for this research study suggest that in-depth studies can be made on a specific variable subject, like food insecurity and low health literacy. These variables can broaden the understanding of why children in poverty have a higher rate of fitting demographics like obesity, poverty, low health literacy, and food insecurity. Our findings also suggest that because there is a positive correlation between the variables, it shows there are multiple factors that affect the raising of children in poverty, who live in single-parent households. Factors like financial resources and social resources, which affect the educational performances children have, coming from a single-parent household (Lange and Dronkers, 2018). Other research that supports our hypothesis that children who do live in poverty will have higher rates of varying factors. One factor that relates to children living in poverty is their cortisol levels. This research was relevant to the extent a health toll can take on a child living in a single-parent household in poverty (Brown et al. 2019). With as many factors that were presented throughout our research

and the literature review research, this could mean a creative solution to the uphill battle children must face in gaining a better understanding of their health, like what it means to feel and be healthy, through their education and within their homes.

Limitations and Future research

The limitations of this project could be the data collected. Updated data could give a better visual on where to begin creating a solution for the problem, but because we had data from 2017 to 2018 the solutions we create for them may not work now. The solution to this limitation or problem would be to collect that raw data or find more recently collected data. Another limitation would be the variables uncommonly used, like ethnicity as a measure on severity of food insecurity, obesity, and low health literacy. Bratter and Kimbro (2013) used multiracial children as a measure of how poverty varies across racial groups. This could broaden how poverty affects children who live with a single-parent, have food insecurity, have experienced obesity, and don't understand how to improve their healthy. In addition, we suggest future research should examine more direct measures of childrens' health. To look specifically at children who are obese or even underweight, would contribute well to new research on the perspective of not having the information to be healthy because of low health literacy and the lack of educational resources.

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