

# Effects of poverty on physical health outcomes of infants: Findings from Puerto Rico in 1994-1995

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## ABSTRACT

In general, a plentiful amount of research has demonstrated a relationship between poverty and the physical health outcomes of human beings. However, Puerto Rico is an understudied United States territory in which almost half its' population is living below the federal poverty line. The current study aims to find determinants of poor health outcomes of the Puerto Rican population by comparing the health status of Puerto Rican infants born into familial poverty versus non-familial poverty. The current study examined the relationship between 1) Household income level and the prevalence of asthma in Puerto Rican infants, and 2) the utilization of the Special Supplemental Nutrition Program for Infants, Women, and Children (WIC) and the prevalence of recurring anemia in Puerto Rican infants. Results of the study demonstrate that a significant relationship was found between household income level and the prevalence of asthma in Puerto Rican infants. However, results analyzing the relationship between the utilization of WIC and recurring anemia demonstrates that there was no significant relationship amongst the variables. The results of the study support the current study's hypothesis which inferred that poverty does affect the physical health outcomes of Puerto Rican infants.

## INTRODUCTION

### Background

APA reports that infants who live impoverished are at greater risk in experiencing negative outcomes such as; "poor academic achievement, school dropout, abuse and neglect, behavioral and societal problems, physical health problems, and developmental delays" (2020).

### Significance of the Study

Puerto Rico is an understudied United States territory in which almost half its' population is living below the federal poverty line. According to the U.S. census, Puerto Rico had a poverty rate level of 44.4% as compared to the United States who had a poverty rate level of 13.1% in the year of 2017 (Glassman, 2019).

### Research Question

What is the association between poverty and the physical health outcomes of Puerto Rican infants?

### Hypothesis

It was hypothesized that an infant born into a familial poverty will experience more negative physical outcomes as compared to an infant who is not born into familial poverty.

## LITERATURE REVIEW

- Research has repeatedly proven to show that a person with a low socio-economic status (SES) is more susceptible to experiencing higher rates of infant mortality, a shorter life expectancy, and having "higher death rates for the 14 leading causes of death" (APA, 2020).
- It is reported that 31.5% of youths suffer from asthma whereas only 17.1% youths in the mainland are diagnosed with asthma (Langellier et al., 2012).
- A study conducted by researchers; Pop, Van Ingen, & Van Oorschot (2013) found that the life expectancy of a human living in low-income country was 59.67 years of age whereas a human living in a middle-class country was 73.67 years of age. In addition, the life expectancy of a human living in an upper-class country raised to 80.03 years of age, studied in the year of 2008.
- There is a gap in current research as existing research highlights the health differences found amongst the White and Black communities. However, Puerto Rico is a U.S. territory with higher rates of individuals living below the federal poverty level than either the Black or White community has.
- The ecological systems theory by Bronfenbrenner explains that individuals are affected by their surrounding environment. Therefore, if an infant is born into familial poverty, the theory indicates that the infant will become negatively affected by poverty.

## METHODOLOGY

### Research Design

- The study utilizes secondary analysis obtained from the Puerto Rican Maternal and Infant Health Study (PRMIHS), collected in 1994-1995.
- PRMIHS is a cross-sectional study that was conducted to gather information regarding the health status of infants born to Puerto Rican women. Mothers were contacted to participate in a Computer Assisted Personal Interview (CAPI) utilizing the address provided on the birth and death certificates of the infants.

### Sample

- The PRMIHS study used purposive sampling. The study recruited its' participants from the following States, Connecticut, Florida, Massachusetts, New Jersey, New York City, Pennsylvania and the Commonwealth of Puerto Rico.
- Original sample was N= 2,763. After implementing income brackets and only utilizing selected cases who indicated a household income level of \$12,000-\$14,999 or below OR \$40,000+, the sample for the current study resulted in N= 1,945.

### Measures

#### Independent Variables: Poverty

##### Household income level

Mothers had to indicate if they had a household income level at or below the federal poverty line (\$12,000-\$14,999 or below) OR above the federal poverty line (\$40,000+). (At or below/ above)

##### The utilization of public assistance program, W.I.C.

Mothers had to indicate if they received aid from the public assistance program, W.I.C., at the time of their pregnancy or if they did not receive the assistance. (Y/N).

#### Dependent Variables: An infant's health status

##### The prevalence of Asthma

Mothers had to indicate if their infant was diagnosed with Asthma. (Y/N).

##### The prevalence of recurring Anemia

Mothers had to indicate if their infant had/has recurring Anemia. (Y/N)

- Descriptive Statistics was utilized to analyze the study's demographic and study variables. Additionally, the chi-square test was utilized to help determine if a significant relationship is found between poverty and the physical health outcomes of Puerto Rican infants.

## RESULTS

### Summary:

- Does household income level effect the the prevalence of Asthma in Puerto Rican infants?
  - A chi-square test examined the relationship between household income level and the pervasiveness of Asthma in Puerto Rican infants.
  - Results demonstrate a **significant relationship** between household income level and the prevalence of asthma in Puerto Rican infants, ( $\chi^2 (1) = 9.39, p < .05$ ) while a Phi statistic suggests a weak relationship (.083).
  - Mothers with a household income level at or below the federal poverty line were more likely to indicate the prevalence of asthma in their infant (30.0%) when compared to individuals above the federal line that also indicated yes (19.9%).

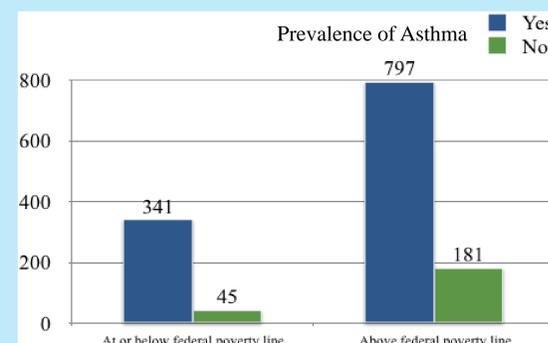


Figure 1. Household income level

## RESULTS (con't)

### Does the utilization of W.I.C. effect the prevalence of recurring Anemia in Puerto Rican infants?

- A chi-square test examined the relationship between the utilization of W.I.C. during pregnancy and recurring Anemia in Puerto Rican infants.
- Results demonstrate that there was **no significant relationship** found between W.I.C. during pregnancy and recurring anemia, ( $\chi^2 (1) = 2.69, p = .101$ ).

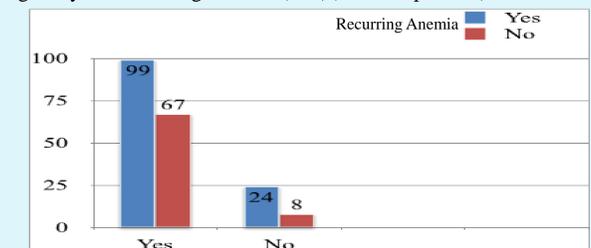


Figure 2. W.I.C. during pregnancy

## DISCUSSION

### Importance of Findings

- Although the study's findings were mixed, results demonstrate that a relationship does exist amongst poverty and the health status of a Puerto Rican infant. Additionally, the results are consistent with the study's hypothesis which inferred a significant relationship amongst poverty and the health status of Puerto Rican infants.

### Implications for future research and practice

- The study provides insight by indicating that poverty does act as a determinant for the health outcomes of Puerto Rican infants.
- Acknowledging the results would help social workers become much more culturally competent when working with low-income individuals and/or families.
- It is important for social workers to be culturally competent and have education and knowledge about the factors that may affect certain populations.

### Strengths and limitations

- The current study's population of interest is an understudied population, Puerto Ricans.
- However, the current study analyzes an outdated secondary data set that is about 26 years old.

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