



## Impact of Income Support Programs on Health Equity among the African American Population in Buffalo, New York

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**Abstract:** - This study investigates the impact of income and poverty on access to healthcare services among the Buffalo, New York, African American population. The study is motivated by the persistent healthcare disparities experienced by this population, despite efforts to improve health equity. A comprehensive literature review was conducted to establish the context of the study and identify gaps in the existing literature. The study employed a survey design, with a sample size of 280 African American respondents in Buffalo, New York. The data collected was analyzed using Excel as it was suited to the study. The study's findings reveal that income support programs are crucial in ensuring access to healthcare for all, regardless of income or poverty status. Poverty levels were also found to significantly impact access to healthcare among African Americans in Buffalo, New York, with low-income individuals and families facing numerous financial, social, and structural barriers to accessing essential healthcare services. In addition, income levels were found to have an impact on access to prescription drugs, which could limit the ability of African Americans to manage their health conditions effectively. The study recommends that policymakers develop and implement interventions that address income inequality and reduce poverty among vulnerable populations, such as African Americans. Healthcare providers should also develop programs to improve access to healthcare services and prescription drugs for low-income individuals and families. Future research should explore the impact of other factors, such as health literacy, cultural beliefs, and healthcare system structures, on healthcare access among African Americans in Buffalo, New York.

**Keywords:** Healthcare disparities; income support programs; poverty levels; access to healthcare.

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## PART I INTRODUCTION

US healthcare access has become more complex since the Patient Protection and Affordable Care Act (PPACA) was passed in 2010. Healthcare now requires a more integrated approach beyond the single visits to doctors' offices for simple problems. Government stakeholders intended to reduce healthcare disparities through these adjustments in place. An example of this was the implementation of Accountable care organizations (ACOs); these are groups of integrated service providers improving care while reducing costs within specific patient populations (Rosenbaum, 2011). The other role of the PPACA is to increase healthcare quality by reducing healthcare disparities under section 9007 (a); this requires local health departments to conduct community health needs assessments every three years to maintain the populations' tax-exempt status. Despite these efforts, disparities persist in the US healthcare system, suggesting the need for additional measures to meet the demands of every population. The Centers for Disease Control and Prevention (CDC) reports that health disparities continue to affect minority populations. The effect comes from environmental and social factors, inadequate healthcare coverage, lack of access to healthcare, and economics (Centers for Disease Control and Prevention, 2022).

Racial inequalities mar the American healthcare system; this affects healthcare access among different populations disproportionately. People of color and other marginalized groups have difficulty accessing healthcare services. These inequalities have increased the gaps in health insurance coverage, poor health outcomes, and uneven access to healthcare services (Taylor, 2022). The Black population in America has been the most affected by these healthcare challenges. African Americans form a significant component of the US population (13.4%); many initiatives have been taken to right the wrongs of the US healthcare system, including the Civil Rights Acts of 1964 and 1968. While these measures have contributed significantly to civil rights improvements, American society has continued to fail the minority populations. African Americans have a longer lifespan, and most have health insurance coverage (Taylor, 2022). Despite this change, African Americans continue to experience illnesses at higher rates, leading to a lower life expectancy compared to other racial groups in America; it also remains behind different demographics in economic performance.

For example, in the US, significant improvements in health among African American women recently; however, this does not mean disparities have disappeared. This population

continues to experience higher mortality compared to other female populations in the US. Despite overall health improvements, these women have shorter life expectancies and higher maternal mortality rates. Additionally, the population continues to suffer a disproportionate burden of chronic conditions such as cardiovascular disease, anemia, and obesity (Chinn et al., 2021). There is a close connection between people's social conditions and their health outcomes, creating a burden as reflected by the chronic diseases affecting them; these also contribute to the current maternal mortality and morbidity crisis. This paper examines the critical factors of racial inequality and health affecting the African American population and the role of income support programs in resolving the situation.

## Background

Coverage expansions under the Affordable Care Act (ACA) have increased the pace of progress toward universal coverage. However, the high costs of coverage options limit access to affordable health for many African American populations (Rosenbaum, 2011). The average American family spends 11% (\$8,200) on healthcare premiums annually and other out-of-pocket costs on prescription drugs, office visit copays, and surprise medical bills; these factors significantly strain families' financial security. These factors worsen for the African American population as the average annual healthcare premiums costs take up approximately 20% of the average household income (Taylor, 2022). This cost is significant for this population, considering the income inequality and economic challenges already rock it. High coverage costs mean the number of underinsured and uninsured populations has remained high. The US has over 27 million people without health insurance coverage, of which 45% cite cost as the reason. Additionally, according to the Commonwealth Fund, 87 million adults aged 19 to 64 remain underinsured; these people have insurance coverage, which often leads to high out-of-pocket costs compared to income (Taylor, 2022). This causes significant strain on personal finances and, in some cases, leads to debts. At least 18% of the underinsured population is African American.

Age, gender, race, and residence in influence are the primary factors influencing healthcare access in the US. Additional factors that affect access to healthcare insurance coverage include personal beliefs and illiteracy; the severity of the condition also influences immediate access to healthcare, which might increase the cost of medical resources and healthcare professionals. The African American community in the US has a disproportionate population of people with disabilities; this population has also been identified as the least likely minority group to access quality healthcare coverage. The CDC has recently collaborated with Racial and Ethnic Approaches to Community Health (REACH) to eliminate cultural barriers limiting healthcare access (Centers for Disease Control and Prevention, 2022). These barriers include race, socioeconomic status, discrimination, education, and inadequate resources.

Andersen (1968) stated that researchers can examine healthcare disparities by analyzing several factors: predisposing, enabling, and need elements. The predisposing factors increase an individual's vulnerabilities to healthcare issues, including age, race, gender, and environment. Enabling factors increase an individual's possibilities of receiving healthcare coverage, transportation access, and finances. On the other hand, need factors increase or decrease health needs, such as environmental issues and

community health measures. The model clarifies many indices revolving around the potential variables of healthcare disparities. The focus on healthcare disparity components is like the emphasis on community health needs assessments and ACOs as provided in the PPACA and CDC recommendations for the involvement of additional stakeholders in improving healthcare access.

## Problem Statement

Alternative mechanisms at community and government policy levels can effectively eliminate the existing inequalities to influence future healthcare demands. While the focus has been on the ACA, the modalities of ensuring everyone can pay have mainly been ignored as part of the PPACA interventions to reduce inequalities (Rosenbaum, 2011). Financial empowerment is an effective tool for ensuring everyone can access healthcare. However, income support programs have barely been explored to improve healthcare outcomes for the African American population. Financial assistance empowers people to access healthcare services that their finances would not allow. Therefore, trusting income support systems may provide an effective alternative for eliminating obstacles affecting the target population. The PPACA significantly removes healthcare disparities, but the role of income support programs remains unknown. Therefore, this study seeks to explore the role of these programs in eliminating healthcare inequalities for the African American population with a focus on Buffalo, New York.

## Research Question

This study will be guided by the research question: What is the impact of income support programs on health equity among the African American population in Buffalo, New York?

## PART II LITERATURE REVIEW

The primary idea behind policymakers' actions in designing the PPACA was to eliminate healthcare disparities affecting minority populations. This policy seeks to help underserved populations using measures such as CHNA and ACOs. Despite a few studies that have speculated on the potential role of income support programs in eliminating healthcare inequalities, little evidence confirms this. Nonetheless, research has shown that financial empowerment can significantly influence an individual's healthcare decision. Social and economic factors have continuously been considered critical for healthcare, broadening the topics, analysis levels, and interventions to cure medicine and public health. The stakeholders in these settings act as information sources regarding healthcare disparities, and more research would increase their knowledge and awareness for better outcomes. This study seeks to explore the potential role of income support programs in eliminating healthcare disparities. The literature review covers the theoretical framework and reviews past studies.

## Theoretical Framework

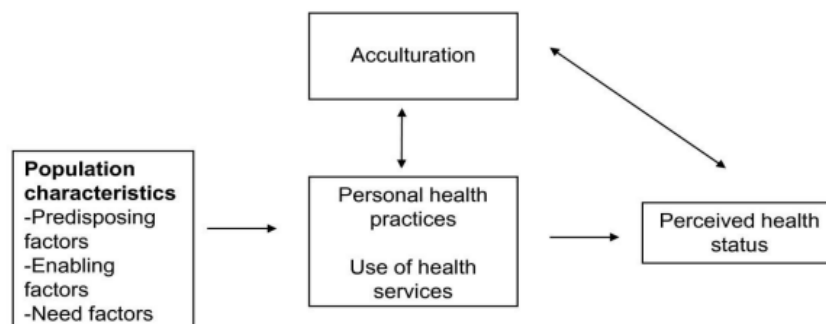
### Andersen Behavioral Model

This model operates on the idea that healthcare disparities arise from conditional and human factors. The conditional factors are external factors creating social disparities to hand some groups an advantage over others. On the other hand, human factors revolve around demographic elements such as age, gender, and race. The guiding principle of this model is that an individual's beliefs on health can influence the type of services they receive and their health. The model has undergone significant

development and has become more specific on the factors influencing a population's health. The development has created three critical components: predisposing factors, enabling factors, and need elements guided by Andersen's (1995) model. Predisposing factors refer to the innate qualities that might influence an individual's actions and create factors limiting healthcare access. These factors include the availability and

affordability of healthcare insurance coverage and income levels. According to Babitsch et al. (2012), a need factor can be a perception of an individual's needs perception for healthcare. Their effects depend on the population context. For example, catastrophic situations can push beliefs that might return them to previous conditions. The model has been used to understand healthcare disparities in the US.

**Figure 1: Andersen's Behavioral Model**



Source: (Researcher, 2023)

Several studies have applied the model to understand healthcare disparities in various cases. Stein et al. (2007) used the Gelberg-Andersen Behavioral Model for Vulnerable Populations to predict health services utilization among homeless women in the US. Homelessness is one of the most prominent causes of health concerns that can be explained through Andersen's behavioral model as it deals with a structural health condition. The researchers tested the hypothesized expanded form of the behavioral model using a stratified sample of homeless women in the productive age; this was used as a predictive tool for assessing their use of health services and determining the types of services (Stein et al., 2007). Homeless women's health is a critical health concern. Information on women in the productive age who may be involved in parenting is essential for healthcare policymakers. In the study, the researchers targeted 875 women. They used structural models to assess the influence of predisposing factors such as psychological distress, the severity of homelessness, demographics, and alcohol and drug problems. They also considered enabling factors such as care sources, barriers, and health insurance coverage and need elements such as illness on health service utilization such as hospitalizations and outpatient visits.

The study determined that illnesses, barriers, and inadequate insurance were significant effects of the severity of homelessness. On the other hand, distress contributed to illnesses, barriers, and less outpatient service utilization. Additionally, drug problems contributed to hospitalizations, while barriers caused more illnesses and less outpatient service access. The researchers also determined the indicators for homelessness were more prevalent among white women. The study concluded that better housing, increased insurance coverage, and access to care would encourage more people to seek health services. This study would be critical for validating the need for better financial empowerment in increasing insurance coverage and encouraging the target population to access healthcare. It would also foster a better understanding of the factors promoting healthcare inequalities among the target population.

Zhang et al. (2019) studied the key determinants of healthcare utilization in China. Past studies have analyzed and discussed the factors influencing healthcare utilization in the

country, but the researchers sought to correlate them to Andersen's model. They conducted systematic empirical studies using data from the China Health and Nutrition Survey (CHNS) involving a longitudinal survey covering three decades of data. According to the study results, the researchers discovered many consistent and robust predictors of healthcare utilization; these included predisposing factors such as marriage and education, enabling factors such as wealth and income, and need elements such as health status and illness severity. Population and employment factors have not been examined but could play significant roles (Zhang et al., 2019). The researchers showed that some elements could differ from normal expectations but would influence healthcare. These include health insurance coverage and employment, influencing how populations access health services in inpatient and outpatient settings. According to the study, individual-level factors were more significant than contextual-level factors in the studies. These factors are critical in assessing the potential policies that might influence positive health outcomes. The study is crucial to this research for providing more information on the factors to target when promoting population health among the target audience.

Another application of Andersen's Behavioral Model is seen in the study by Kabir (2021), conducted to identify the factors influencing maternal healthcare service access by women in Bangladesh. The provision of equitable maternal care service and its optimum access and utilization has remained challenging for developing countries. The researcher identified enabling, predisposing, and need factors affecting maternal care. According to Kabir (2021), women in the country have a poor utilization of maternal health services, creating disparities in healthcare and maternal health outcomes. The researcher used the 2017–18 Bangladesh Demographic Health Survey to give a national outlook due to its comprehensive nature. The methodology involved a two-stage stratified sampling and the data collection through face-to-face interviews. They researched different components of maternal health service (MHS) packages based on desirability aligned to antenatal services before and during childbirth. According to the results, only 31.2% of women utilized the desirable MHS levels. The most critical predictors of these behaviors were education levels and wealth standards, which had the most significant impact.

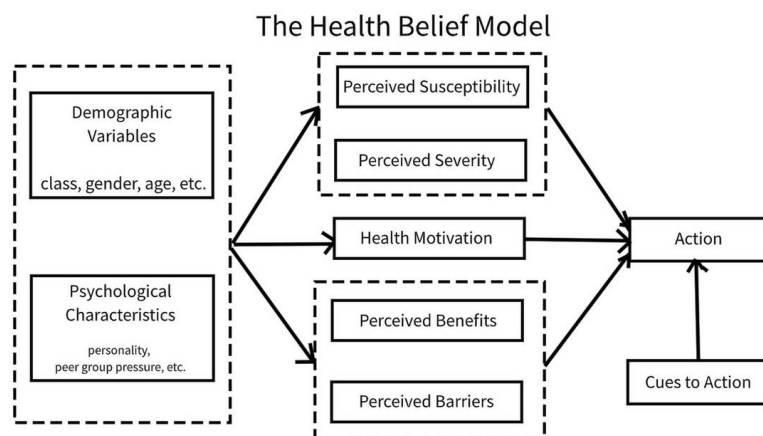
Women from richer backgrounds were likelier to use these services than their poorer counterparts. Other factors include residence and administrative regions. This study is critical because it would influence policies and interventions toward enhancing education and reducing poverty to improve healthcare equality. The study also reflects the situation of African Americans as it relates to the factors of inequality in healthcare.

### Health Belief Model

Healthcare inequality in the US can also be analyzed using the Health Belief Model (HBM) developed by the US in the 1950s. The model assesses patient behavior based on several factors; people's health behavior depends significantly on adequate

motivation to address health issues and vulnerability feelings (Green et al., 2020). It also operates on the notion that a threat will reduce without additional costs if the individual follows the health recommendation. According to Rosenstock et al. (1988), individuals seek healthcare services when they feel comfortable with its direction. In the article, the authors argued that individuals should not seek a healthcare service unless they feel comfortable. These feelings could depend significantly on demographic features and the actions of the community and healthcare providers. The model also states that actions and messages will successfully achieve the targeted optimal health behavior if they target the perceived barriers, benefits, threats, and self-efficacy outcomes.

**Figure 2: Health Belief Model**



Source: Washburn (2020)

Otto et al. (2021) conducted a secondary data analysis involving cancer patients using the HBM to explore the factors contributing to racial and ethnic healthcare disparities. According to the researchers, racial and ethnic minorities experience significant disparities in the cancer domain. The study data was collected from 15 Community Health Needs Assessment catchment areas. The results showed that differences occurred in information-seeking behaviors, distress, community attributes, lower health literacy, risk perception, and discrimination. These factors depend significantly on household income, age, and relationship status. The study offers a better understanding of the factors within HBM that influence health disparities in cancer prevalence and catchment. Results from this study would describe community needs members' needs from the perspective of racial and ethnic minority groups and guide policymakers in formulating income support programs effectively to minimize healthcare inequalities.

### Healthcare Inequality

Arcaya et al. (2015) defines healthcare inequality as the differences in health among groups or individuals. Inequality is any measurable health aspect that varies across groups and individuals or groups. On the other hand, healthcare inequity or disparity refers to a specific health inequality that presents an unjust health difference. In this context, health inequities are systematic health differences that can be avoided by initiating reasonable means. Differences in social groups based on race and religion form part of health inequities as they reflect a distribution of resources and health risks. Significant differences exist in health in the modern world despite significant efforts since the 1980s (Arcaya et al., 2015). For example, Haitian males had a healthy life expectancy of

27.8 years in 2010, while Japanese men had a life expectancy of 70.6 years. Differences in social groups within nations are critical when defining health disparity. For example, in India, the poorest families are more likely (86%) to die than those from the wealthiest families.

When discussing healthcare inequality, a social gradient arises where social resources such as social class, education, and income correspond with healthcare levels as a dose-response relationship. For example, education impacts health positively; more years of schooling influence health positively. On its part, income has an incremental influence on health as an additional income level place an individual on a better health trajectory. A higher income means acquiring the necessary medication and paying for health insurance. A higher income level also reduces the distance between individuals' residences and hospital settings, making transportation more accessible. Zhang & Xiang (2019) conducted a study to analyze the relationship between income and health by examining the role of social networking time. The researchers collected data from the General Social Survey of the United States developed through statistical analysis and Healthy Days Measures developed by the CDC. According to the study, people in the lower income brackets spend more time socializing with their neighbors than those in the higher income levels. Moreover, it was determined that income positively correlates with health-related life quality. According to the study, people who engage in more social engagements report lower-quality health. The income gradient in health-related life quality is more prevalent in mental health. This study validates the positive role of higher income in health-related life quality. Income also affects people's network ties as social networking influences the income gradient in health-related quality of life. The study is essential in supporting

income support programs in eliminating healthcare disparities. It validates the role of social security programs in promoting health among African Americans.

### **Income Support Programs and Healthcare**

Hill & Rowhani-Rahbar (2022) define income support programs as programs that directly provide income to families and individuals; they are a form of experimental support innovated at local, state, and federal levels. The idea has scientific evidence gathered on child poverty; it has redirected attention to structural poverty causes and the economic crisis that worsened at the peak of the Covid-19 pandemic. Income support programs exist in many forms at the local and state levels, which have led to randomized control trials (RCTs) and natural experiments to examine health outcomes. For example, in one trial, Baby's First Years determines the effect of unconditional income support in four parts of the nation. However, these studies are ongoing, and their results are yet to be determined. Besides these, many cities in the country continue to partner with philanthropic organizations to pilot income support programs. In these programs, low-income families receive a monthly stipend with no strings attached or specific behaviors. For example, the Stockton Economic Empowerment Demonstration (SEED) gave \$500 monthly to 125 residents living in low-income neighborhoods in Stockton, California, for two years. According to Hill & Rowhani-Rahbar (2022), an evaluation of the SEED program showed positive results, such as reductions in maternal anxiety and depression. The positive results inspired many new pilot programs in diverse cities such as Tacoma, Washington, Columbia, South Carolina, and Denver, Colorado.

Finkelstein et al. (2022) state that lower-income populations have poorer health qualities like shorter lifespans and greater disease risk. The very poor face worse conditions. To minimize the potential effects, income support programs can determine healthcare availability by ensuring families have their basic needs taken care of and supporting participation in economic development. These include Temporary Assistance for Needy Families and Earned Income Tax Credit, providing families with a cushion against poverty and other factors placing them at a disadvantage. Finkelstein et al. (2022) state that families face significant inequalities in accessing income support programs. Different states offer varying Earned Income Tax Credits, which can cause unequal participation and access to these programs across groups. Various challenges affect policymakers' efforts in identifying the barriers to access and participation in income support groups and developing the needed strategies to increase access to income support groups.

Other examples of income supplements and enhancements in the US include the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the Social Security income, also known as the Old Age and Survivors Insurance for elderly adults, and the Earned Income Tax Credit (EITC) for low-income families. Earned Income Tax Credit (EITC) for low-income families (Bennett & Zhang, 2023). According to Finkelstein et al. (2022), natural experiments provide the closest to what we have as evidence of the impacts of these programs. For example, the WIC programs have been connected to lower rates of low birth weight. The effects are more significant for women with lower than higher education levels. Moreover, the EITC has also been connected to reduced maternal smoking and reductions in low birth weight. This research also attributes the program with better

birth outcomes for Blacks than Whites. On the other hand, the social security program for elderly adults was associated with reduced mortality rates for the population. As the overall benefit levels increased, the program was associated with significant declines in mortality for elderly adults.

The other form of the income support program is the conditional cash transfer, a benefit tied to certain behaviors expected of potential beneficiaries. Studies on these programs are few in high-income nations; however, studies conducted in low-income counties suggest they might improve birth outcomes, health behaviors, nutrition, and preventive care use. According to Finkelstein et al. (2022), these programs could reduce healthcare disparities if the providers increase the amounts of cash transfers depending on the economic disadvantages of beneficiaries; this can be achieved by awarding the poorest population the highest cash amounts. The Johns Hopkins Center for Population Health and Health Disparities conducted a pragmatic randomized controlled trial of Five Plus Nuts and Beans. The study suggests that conditional cash transfers focused on groceries and paired with nutritional counseling among African Americans with controlled hypertension led to increase vegetable and fruit consumption. This results in improved dietary patterns in this population. Additionally, a study known as the Great Smoky Mountains Study in North Carolina examined the potential effect of income supplements from casino revenue provided to Indian Americans. According to the study, the supplements were connected to improved adolescent mental health outcomes. The results persisted into early adulthood. These increased education activities and reduced criminal activities among the Indian American populations, eliminating racial disparities in these parameter outcomes.

According to Shafer et al. (2022), there is an increased understanding of the place of racist economic policies and their contribution disparities; this understanding has added to the knowledge body of the interaction between ethnic and racial inequities to influence health. The authors add that targeted actions aimed at reparations might assist policymakers in tackling the systematic causes of health disparities. At least ten US mayors have devised initiatives for reparation programs for African Americans, focusing on community investments, cash payments, and social security programs. Implementing these programs would provide essential insight into America's ability to tackle the historical causes of healthcare disparities through income support programs and investments. Shafer et al. (2022) state that programs like the Child Tax Credit (CTC) are built on structurally unequal systems, such as the tax and labor markets. As such, they run the risk of reproducing the systemic causes of inequality instead of addressing ethnic and racial health disparities. Shafer et al. (2022) suggest we cannot promote health improvement by investing exclusively in programs designed to address diseases alone. Instead, they indicate the need to invest in social and economic policies targeted at fundamental causes.

This section reviewed literature sources on healthcare inequalities through the lens of Andersen's Behavioral Model and Health Belief Model, which effectively assess healthcare and its social determinants. The most prominent feature of these theoretical frameworks is the role of empowerment through enabling factors to healthcare access. The other critical elements include health determinants like predisposing and need factors.

Establishing the connection between income and healthcare inequality in the US provides a suitable platform for analyzing potential policy initiatives. The studies by Hill & Rowhani-Rahbar (2022), Finkelstein et al. (2022), and Shafer et al. (2022) discuss different types of income support programs and their potential impacts on healthcare outcomes in various settings. However, these studies are primarily pilot research with no empirical evidence, leaving a research gap on the real impact of income support programs on healthcare among African Americans.

### PART III METHODOLOGY

This quantitative study explores the role of these programs in eliminating healthcare inequalities for the African American population, focusing on Buffalo, New York. Financial assistance empowers people from low-income areas to access healthcare services that they would not access without proper financing. Keeping faith in income support programs might provide a reliable alternative to eliminate the issues affecting low-income groups and promoting health inequality. The PPACA has provided the means of eliminating disparities in healthcare, but the role of income support programs remains unexposed as the level of studies on this area remains shallow. This study will incorporate Andersen's Behavioral Model to understand the health-seeking behaviors of the target population. It will be used to identify the population's perception of healthcare access relative to their predisposing factors as defined in the model. The Health Belief Model will also be used to determine the enabling factors and the barriers to healthcare among the target population.

#### Research Question and Hypothesis

The research questions will be as follows:

**Q1:** What is the impact of income support programs on health equity among the Buffalo, New York African American population?

**Qi:** What is the impact of poverty on access to healthcare among the African American population in Buffalo, New York?

**Qii:** What is the impact of income levels on access to prescription drugs among the Buffalo, New York African American population?

The study will hypothesize as follows:

**H<sub>0</sub>:** Income support programs have no impact on access to healthcare among the African American population in Buffalo, New York.

**H<sub>0</sub>:** Poverty levels have no impact on access to healthcare among the African American population in Buffalo, New York.

**H<sub>0</sub>:** Income levels have no impact on access to healthcare among the African American population in Buffalo, New York.

#### Research Design and Data Analysis

The research design for this study will be a descriptive design, which acquires data on a prevailing situation using the identified variables in each situation. This allows the respondents to provide the researcher with information on issues of interest. The research will be quantitative as it will use the responses from the target population to quantify the answers to the research questions. This design allows the researcher to generate quantitative data, which can be analyzed based on selected theories. According to Bhandari (2022), quantitative techniques

analyze numerical data obtained from survey questionnaires. In this study, we will analyze the answers obtained through closed-ended questions, some with multiple-choice questions using quantitative methods. The presentations will be done through pie charts, bar charts, tabulations, and percentages. On the other hand, we will analyze answers to open-ended questions using qualitative methods.

The variables will be income support programs as independent variables and healthcare access as the dependent variable. Other variables in the study will be income and poverty, which will act as the supporting variables. We will operationalize income support programs by looking at the types identified by the respondents and the frequency of access. On the other hand, we will operationalize healthcare access by the frequency of attendance to hospital settings and the types and number of services accessed.

#### Target Population

Data are from smaller demographics in Buffalo, New York, through survey questionnaires. We will identify the target population randomly and obtain informed consent to involve them in the study; we will target places like churches, stores, hospitals, and school settings to reach a population of (targeted at) 300 African Americans; our biggest focus will be the churches since it is easier to reach many people at once. We will then send emails to the church leaders explaining the concept, distribute the questionnaires, and collect them back by mail. We will coordinate with leaders such as pastors to identify potential respondents. We will target ten churches and contact at least 30 people per church to expand the sample.

#### Data collection

To determine the connection and potential impacts, we have designed twelve questions centered on healthcare, earnings, and social support programs. According to Dudovskiy (2022), survey questionnaires provide an efficient method of institutionalizing information and appropriating aggregate data. They offer an easier means of drawing excellent reports when there is a need to obtain data without undermining the respondents.

#### Data Analysis

After the collection process, we will review the survey questionnaires and verify their reliability. We will then edit, code, tabulate, and analyze the content qualitatively using Excel. We will analyze it using graphic measurements and present it using tables, charts, outlines, and diagrams for easier interpretation.

#### Ethical Principles

The research is quantitative, meaning internal validity is critical for highlighting the connection between the results and reality. The validity increases depending on the data analysis method. This paper seeks a tactic to answer research questions and confirm or reject a hypothesis, making internal validity essential. This study will meet the validity criteria through a quantitative descriptive method.

The method applied will promote reliability because the data collected will be from people with first-hand information about their situation. The questionnaires make retracing the data collection procedure easier, increasing validity.

The respondents will participate in the research voluntarily, as no one will be coerced without their informed consent. Information will be considered private and confidential; We will only use it for research purposes and destroy the questionnaires at the end of the study.

## PART IV DATA ANALYSIS

We collected data from smaller demographics in Buffalo, New York, through survey questionnaires. We identified the target population randomly and obtained informed consent to involve them in the study. We targeted churches to reach a population of 300 African Americans. Our biggest focus was the churches since reaching many people at once was easier. We then sent emails explaining the concept, distributed the questionnaires, and collected them by mail. We coordinated with leaders such as pastors to identify potential respondents and targeted ten churches and contacted at least 30 people per church to expand the sample. The study successfully collected data from 280 African Americans in Buffalo, New York, and the results provided valuable insights into the perceptions and experiences of this community.

We searched possible African American churches online using the keyword “African American Churches in Buffalo, NY.”

We narrowed the search by type and identified 10 churches with phone numbers listed, after which we contacted them using the contact information on the websites. In some cases, we connected with secretaries, but the pastors in charge were available in others. We established contact with the pastors and explained the purpose of our calls. The initial contact was on January 28, 2023; after explaining the purpose of the call, the pastors agreed to pass my message to their congregants. The response was voluntary, so no one was forced to take part in the research.

Since we could not access the respondents physically, we worked with the pastors to screen them and ascertain they were willing and able to participate in the survey. We obtained their emails through the pastors and sent consent forms, after which we sent the survey questionnaires via mail. We sent the survey questionnaires on February 10, 2023, and gave the respondents one week to respond and send their responses. The feedback was sent back via mail to all 280 respondents, after which we screened the feedback to ensure all questions were answered for those who returned the responses; we received the last survey questionnaire on February 18, 2023. Since the questions were simple, we analyzed the data in Excel and presented the results using graphs, tables, and charts.

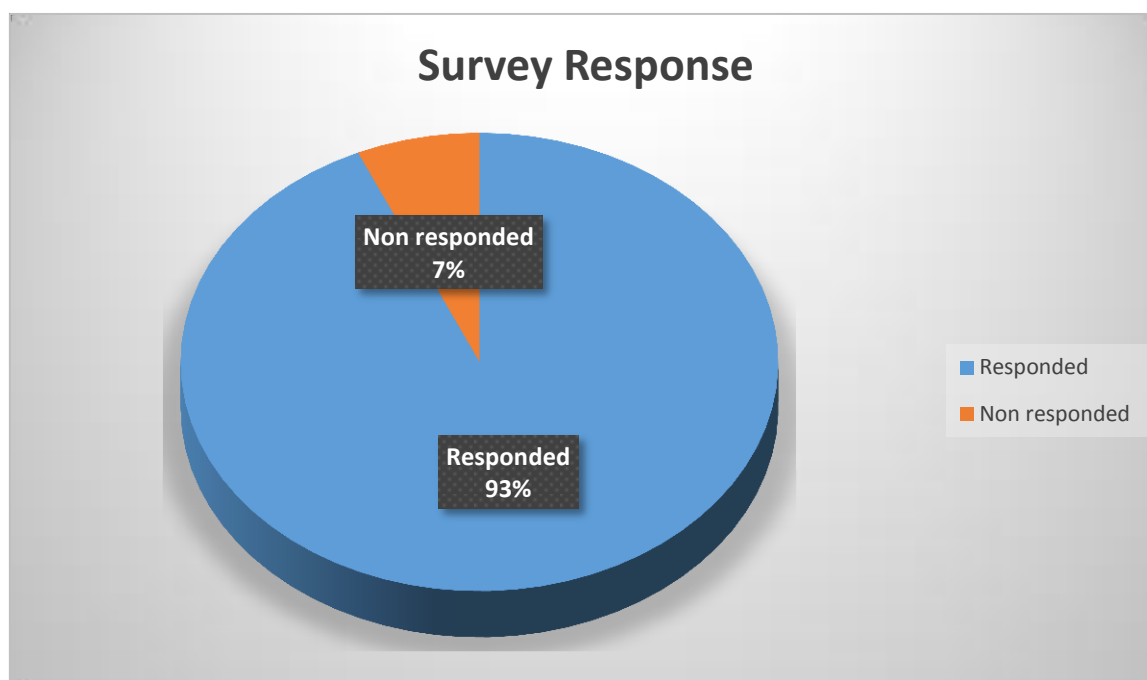
## Analysis

**Table 1: Survey Results**

| Category      | Frequency  | Percentage |
|---------------|------------|------------|
| Responded     | 280        | 93.33%     |
| Not responded | 20         | 6.67%      |
| <b>Total</b>  | <b>300</b> | <b>100</b> |

There were 280 respondents, which is 93.33% of the total sample. On the other hand, there were 20 who did not respond, which is 6.67% of the total sample.

**Figure 1: Survey Results**



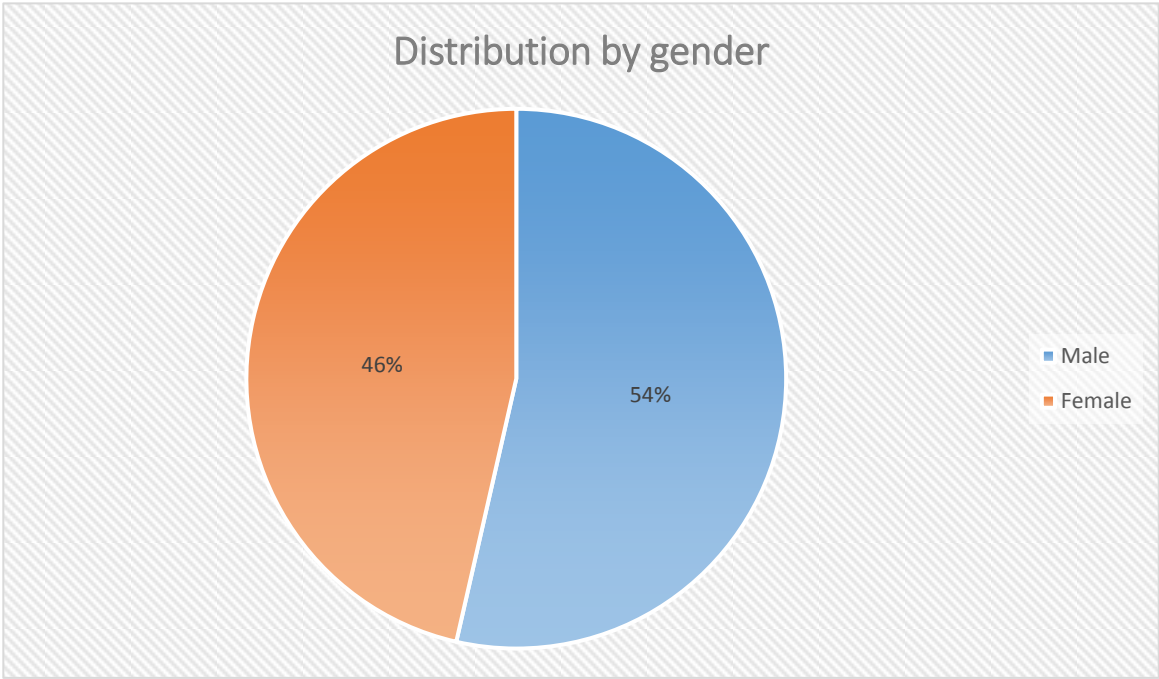
Distribution by Gender

Table 2: Distribution by Gender

| Category | Frequency | Percentage |
|----------|-----------|------------|
| Male     | 150       | 53.6%      |
| Female   | 130       | 46.4%      |
| Total    | 280       | 100        |

There were 150 Male respondents, 53.6% of the total sample, and 130 Female respondents, 46.4% of the total sample.

Figure 2: Distribution by Gender



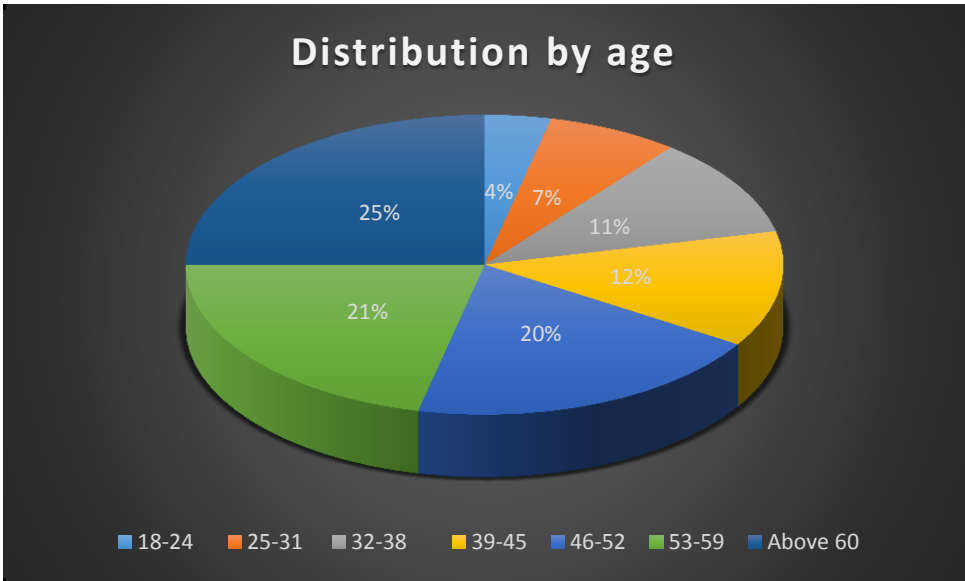
Distribution by Age

Table 3: Distribution by Age

| Category | Frequency | Percentage |
|----------|-----------|------------|
| 18-24    | 10        | 3.57       |
| 25-31    | 20        | 7.14       |
| 32-38    | 30        | 10.71      |
| 39-45    | 35        | 12.50      |
| 46-52    | 55        | 19.64      |
| 53-59    | 60        | 21.43      |
| Above 60 | 70        | 25.00      |
| Total    | 280       | 100        |

The sample is evenly distributed across the age ranges, with the largest proportion of respondents above 60.

Figure 3: Distribution by Age



Distribution by Education

Table 4: Distribution by Education

| Category       | Frequency | Percentage |
|----------------|-----------|------------|
| Foundation     | 70        | 25         |
| High school    | 100       | 36         |
| College Degree | 60        | 21         |
| Masters        | 30        | 11         |
| PH.D.          | 20        | 7          |
| Total          | 280       | 100        |

The sample is skewed towards respondents with high school education, as they comprise the largest proportion. However, it is worth noting that this may reflect the larger population’s education distribution.

Figure 4: Distribution by Education

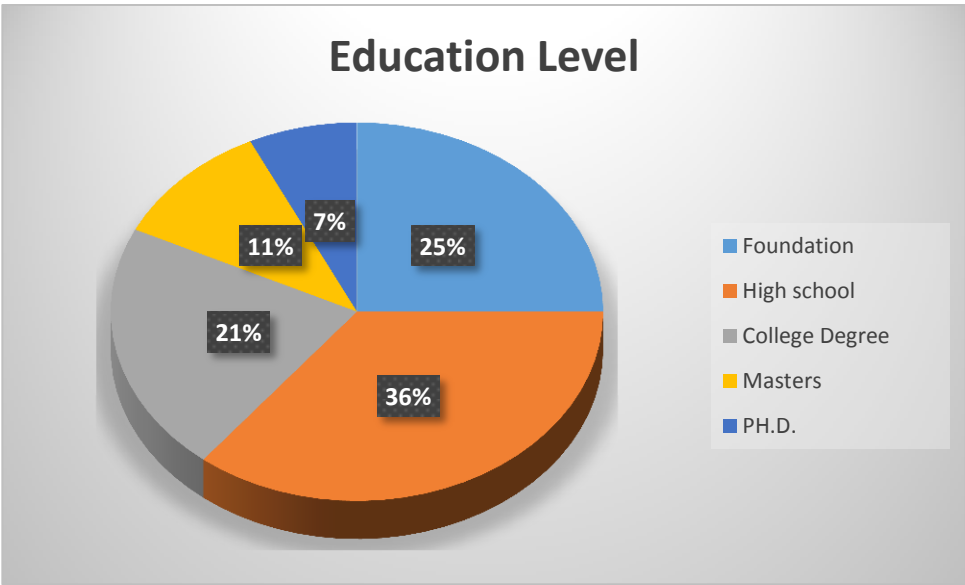


Table 5: Personal Income in the last year

| Category           | Frequency | Percentage |
|--------------------|-----------|------------|
| \$0                | 0         | 0          |
| \$1 to \$9 999     | 45        | 16         |
| \$10 000 -\$24 999 | 100       | 36         |
| \$25 000-49 999    | 120       | 43         |
| \$50 000 -74 999   | 10        | 4          |
| Above \$75,000     | 5         | 2          |
| Total              | 280       | 100        |

Most of the sample falls in the \$10,000 to \$49,999 income range, with the largest proportion falling in the \$25,000 to \$49,999 range.

Figure 5: Income in the Last Year

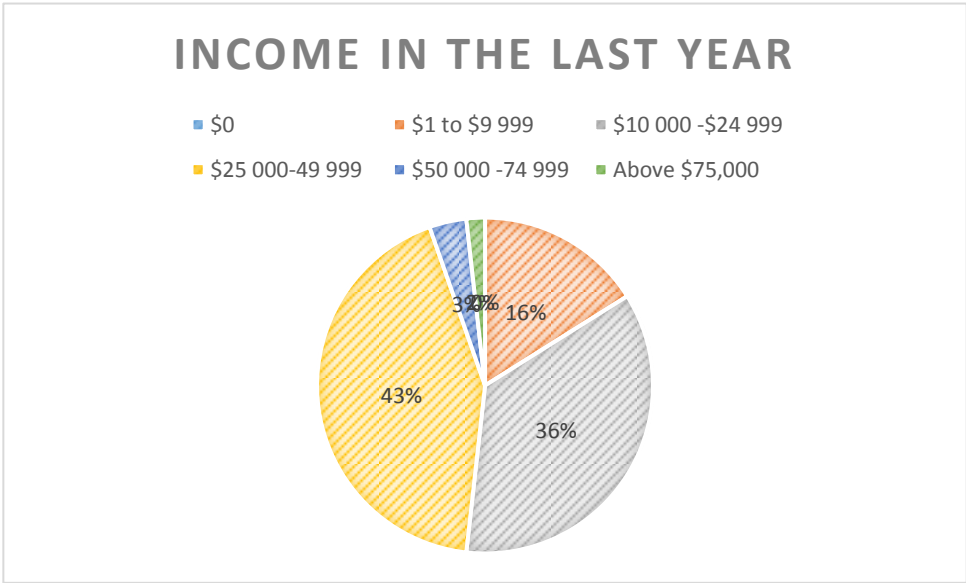
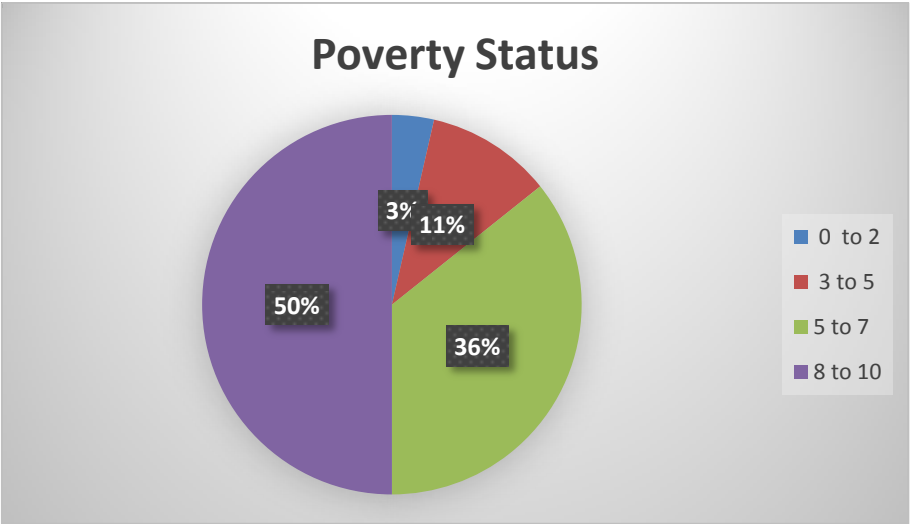


Table 6: Poverty Status

| Category | Frequency | Percentage |
|----------|-----------|------------|
| 0 to 2   | 10        | 3.6        |
| 3 to 5   | 30        | 10.7       |
| 5 to 7   | 100       | 35.7       |
| 8 to 10  | 140       | 50         |
| Total    | 280       |            |

Most of the sample falls in the above-poverty level category, with a smaller proportion in the near-poverty level category and an even smaller proportion in the below-poverty level category. Poverty levels increase with the increasing numbers, 8-10 being extremely poor.

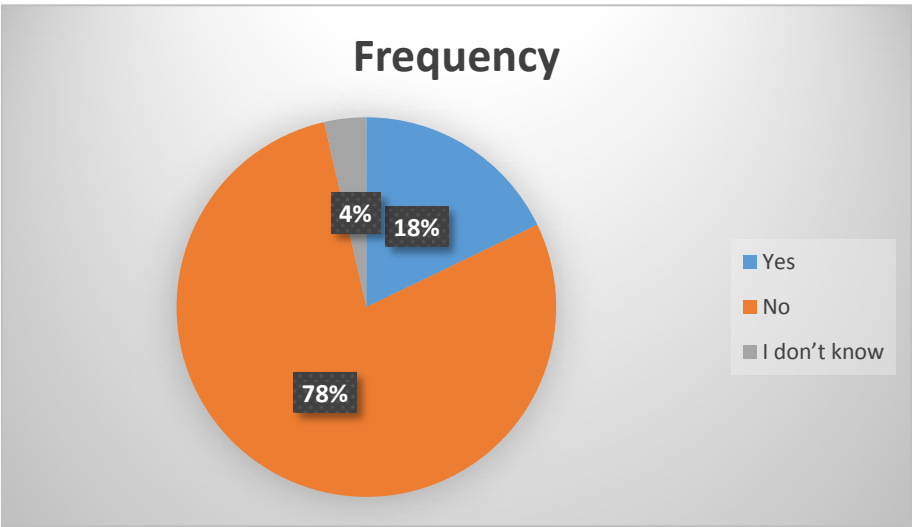


Survey Questions

SQ1. Do you believe your annual earnings allow you to access healthcare services for all conditions?

| Category     | Frequency | Percentage |
|--------------|-----------|------------|
| Yes          | 50        | 4          |
| No           | 220       | 18         |
| I don't know | 10        | 78         |
| Total        | 280       | 100        |

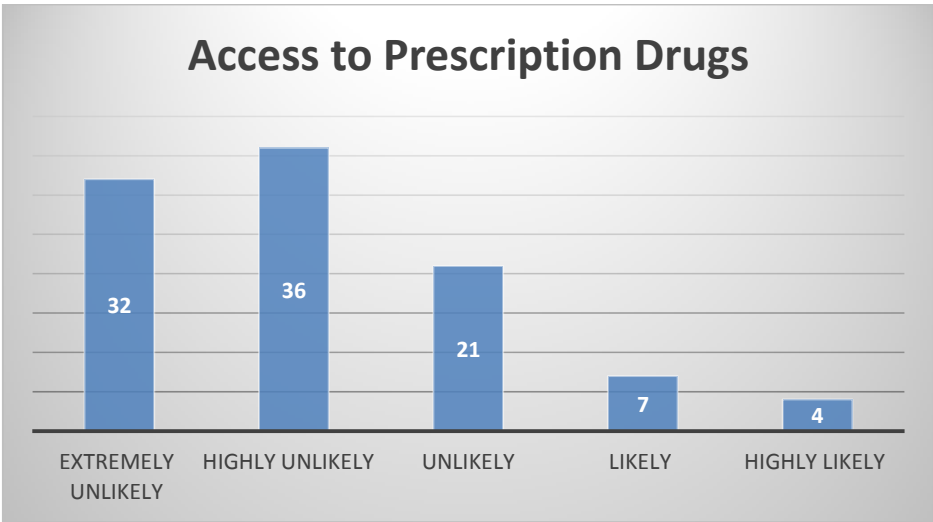
Most of the respondents believe they cannot access healthcare services with their annual earnings.



SQ2. How likely will you access prescription drugs following a diagnosis with your regular earnings?

| Category           | Frequency | Percentage |
|--------------------|-----------|------------|
| Extremely unlikely | 90        | 32         |
| Highly unlikely    | 100       | 36         |
| Unlikely           | 60        | 21         |
| Likely             | 20        | 7          |
| Highly likely      | 10        | 4          |
| Total              | 280       | 100        |

A significant portion of the sample may not have enough financial resources to access prescription drugs even with their regular earnings, which could limit their ability to manage their health conditions effectively.

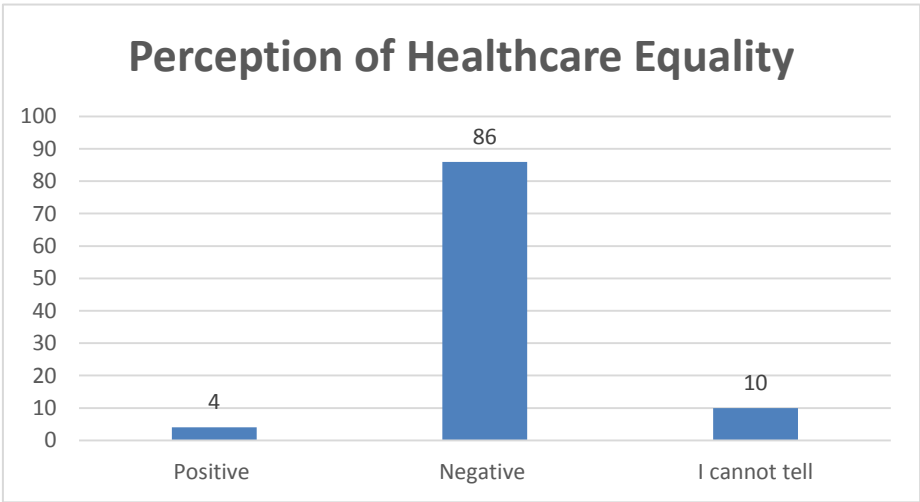


SQ3. What is your perception of healthcare equality based on income and poverty situations in your community?

- Positive
- Negative
- I cannot tell

| Category      | Frequency | Percentage |
|---------------|-----------|------------|
| Positive      | 10        | 4          |
| Negative      | 240       | 86         |
| I cannot tell | 30        | 10         |
| Total         | 280       | 100        |

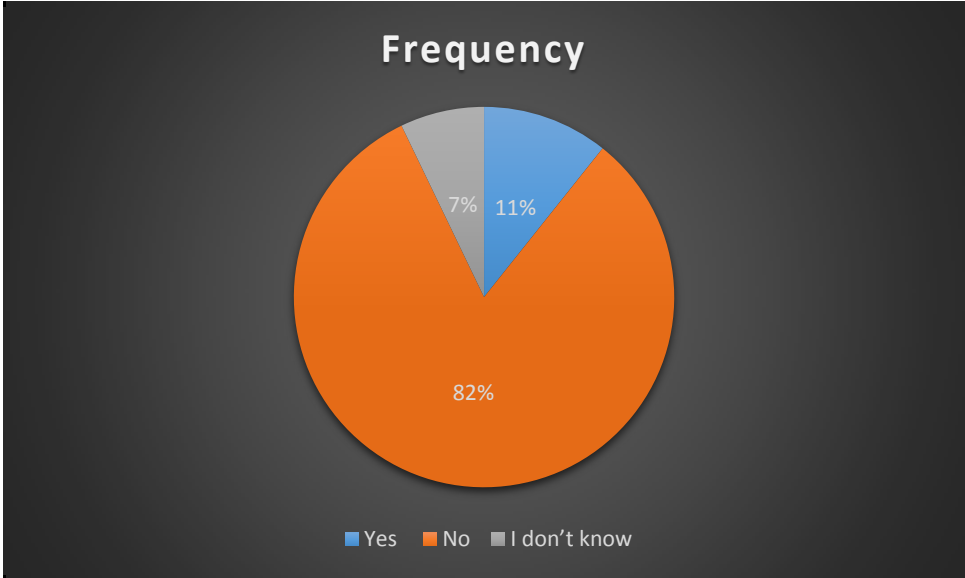
These findings suggest that there may be widespread concern about healthcare equality based on income and poverty situations in the community.



SQ4. Do you believe the American healthcare system offers equal opportunity for people from your community?

| Category     | Frequency | Percentage |
|--------------|-----------|------------|
| Yes          | 30        | 11         |
| No           | 230       | 82         |
| I don't know | 20        | 7          |
| Total        | 280       | 100        |

These findings suggest that there may be significant doubts about the fairness and equality of the American healthcare system in the community.



**If your answer is no, would you attribute it to income inequality?**

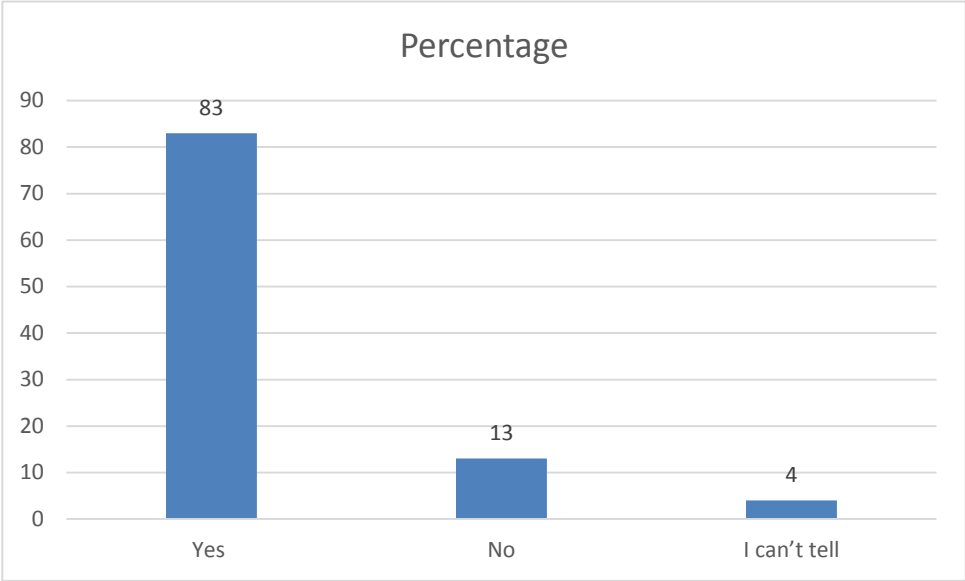
Yes

No

I can't tell

| Category     | Frequency | Percentage |
|--------------|-----------|------------|
| Yes          | 190       | 83         |
| No           | 30        | 13         |
| I can't tell | 10        | 4          |
| Total        | 230       | 100        |

Those who do not believe that the American healthcare system offers equal opportunity for people from their community attribute this to income inequality.



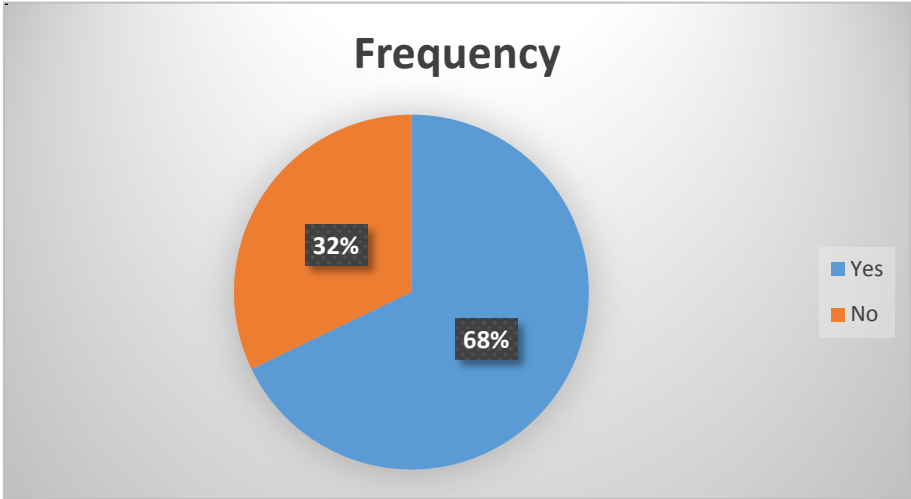
**SQ5. Does your community have any programs aimed at providing you with better healthcare services despite your income status?**

Yes

No

| Category | Frequency | Percentage |
|----------|-----------|------------|
| Yes      | 190       | 68         |
| No       | 90        | 32         |
| Total    | 280       | 100        |

Most respondents believe that their community has programs to provide them with better healthcare services despite their income status.

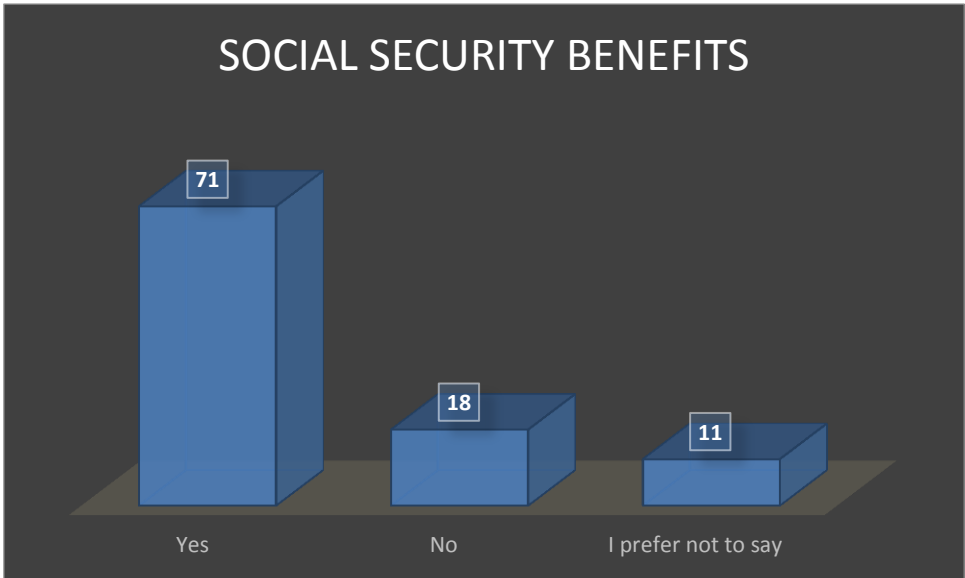


SQ6. Did you receive any social security benefits or disability income in the last year?

- 1. Yes ()
- 2. No ()
- 3. Prefer not to say ()

| Category            | Frequency | Percentage |
|---------------------|-----------|------------|
| Yes                 | 200       | 71         |
| No                  | 50        | 18         |
| I prefer not to say | 30        | 11         |
| Total               | 280       | 100        |

Most respondents indicated receiving social security benefits or disability income in the last year.

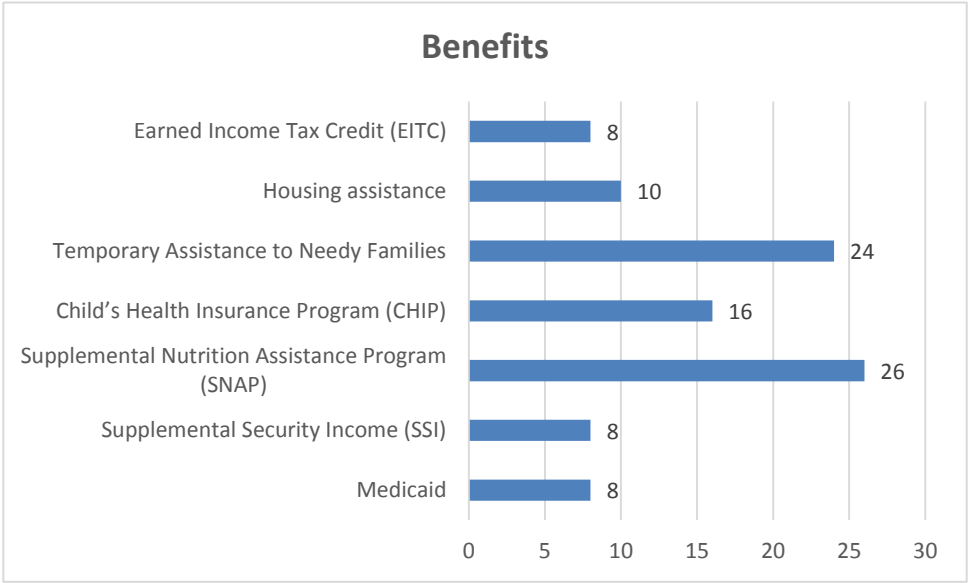


**SQ7. If yes, check all the benefits that apply to you from the list below:**

- ☐ Medicaid
- ☐ Supplemental Security Income (SSI)
- ☐ Supplemental Nutrition Assistance Program (SNAP)
- ☐ Child’s Health Insurance Program (CHIP)
- ☐ Temporary Assistance to Needy Families
- ☐ Housing assistance
- ☐ Earned Income Tax Credit (EITC)

| Category                                         | Frequency | Percentage |
|--------------------------------------------------|-----------|------------|
| Medicaid                                         | 50        | 8          |
| Supplemental Security Income (SSI)               | 50        | 8          |
| Supplemental Nutrition Assistance Program (SNAP) | 160       | 26         |
| Child’s Health Insurance Program (CHIP)          | 100       | 16         |
| Temporary Assistance to Needy Families           | 150       | 24         |
| Housing assistance                               | 60        | 10         |
| Earned Income Tax Credit (EITC)                  | 50        | 8          |

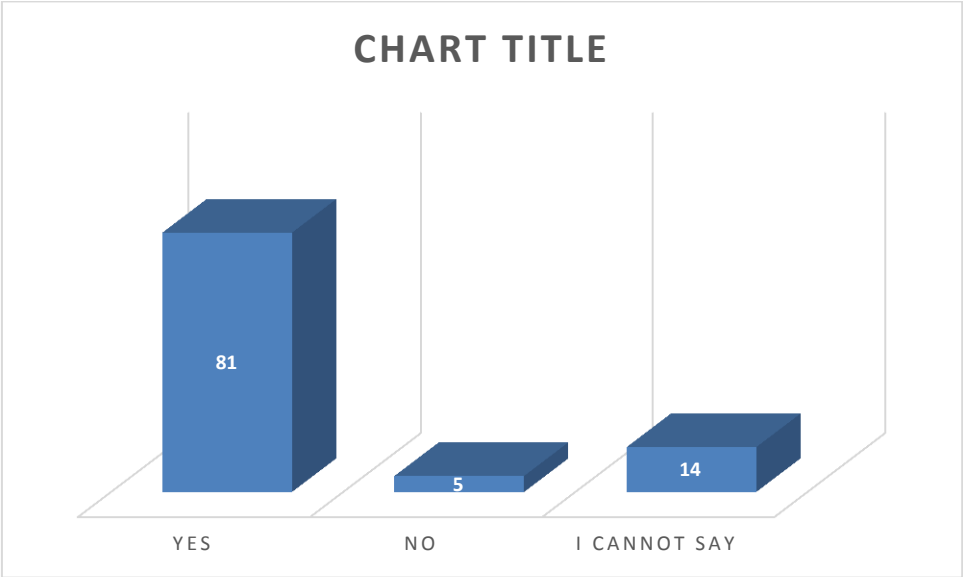
Many respondents rely on government assistance to meet their basic needs and access healthcare services, highlighting the potential impact of income inequality on healthcare access and outcomes.



**SQ8. Do you believe these benefits have allowed you to access healthcare services for all conditions?**

- Yes ☐
- No ☐
- I cannot say

| Category     | Frequency | Percentage |
|--------------|-----------|------------|
| Yes          | 170       | 81         |
| No           | 10        | 5          |
| I cannot say | 20        | 14         |
|              | 200       | 100        |

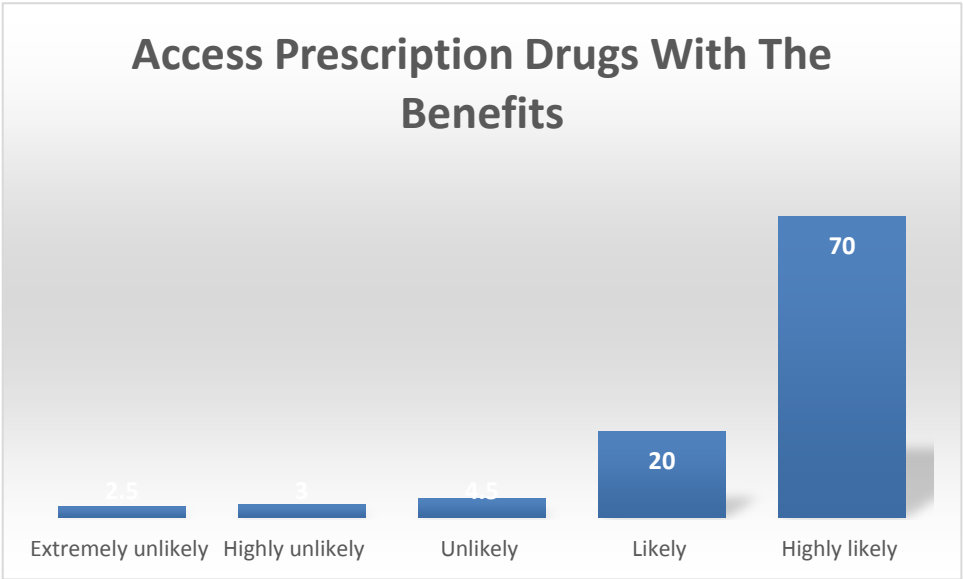


SQ9. How likely will you access prescription drugs following a diagnosis with these benefits?

- Extremely unlikely ()
- Highly unlikely ()
- Unlikely ()
- Likely ()
- Highly likely ()

| Category           | Frequency | Percentage |
|--------------------|-----------|------------|
| Extremely unlikely | 5         | 2.5        |
| Highly unlikely    | 6         | 3          |
| Unlikely           | 9         | 4.5        |
| Likely             | 40        | 20         |
| Highly likely      | 140       | 70         |
| Total              | 200       | 100        |

This data suggests that social security benefits and disability income have played a significant role in helping individuals access healthcare services, particularly for those who may not have been able to afford it otherwise.

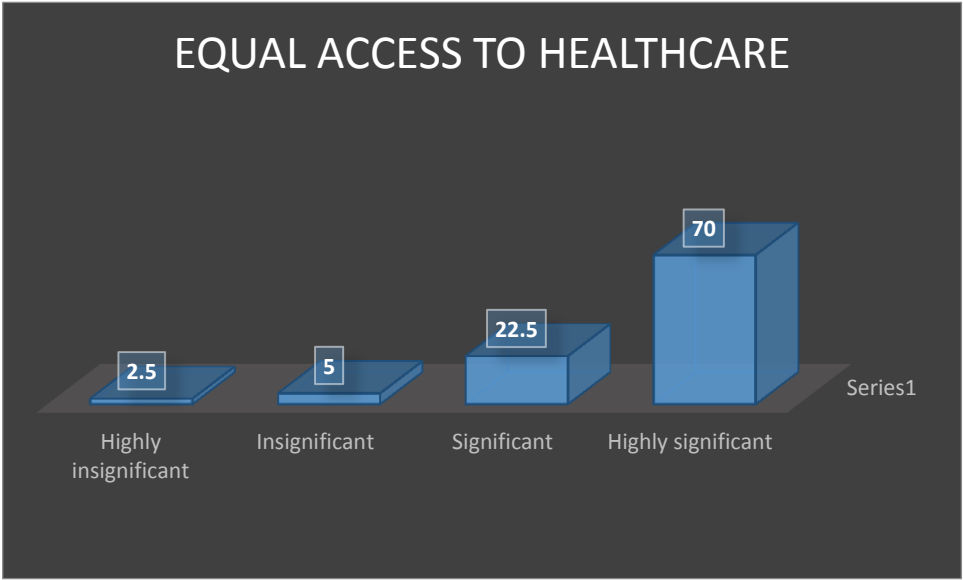


**SQ10. How would you describe the significance of these support programs to equal access to healthcare?**

- Highly insignificant []
- Insignificant []
- Significant []
- Highly significant []

| Category             | Frequency | Percentage |
|----------------------|-----------|------------|
| Highly insignificant | 5         | 2.5        |
| Insignificant        | 10        | 5          |
| Significant          | 45        | 22.5       |
| Highly significant   | 140       | 70         |
| Total                | 200       | 100        |

From this analysis, most respondents consider these support programs important in ensuring access to healthcare for all, regardless of income or poverty status.



**SQ11. Briefly describe what you believe is the contribution of income support to bridging the healthcare gap in your community.**

The answer to this survey question from most of the respondents can be summarized as follows:

Income support can play a significant role in bridging the healthcare gap in our community. With financial assistance, individuals and families can access necessary healthcare services, such as doctor visits, medication, and preventive care. Income support can also help alleviate financial stress, positively impacting mental and physical health. Additionally, income support programs can provide access to resources and information to help individuals and families make informed healthcare decisions. Overall, income support can help to ensure that healthcare is more accessible and equitable for everyone in our community.

**SQ12. Have you noticed a difference in healthcare access since you started receiving income support? Briefly describe this**

The answer to this survey question from most of the respondents can be summarized as follows:

Since I started receiving income support, I have noticed a significant improvement in my healthcare access. Before, I couldn't afford to see a doctor or get necessary treatments because of financial constraints. However, with the additional income support, I can pay for medical bills, purchase necessary medications, and even access preventive care services such as regular check-ups and immunizations. This has helped me better manage my health and prevented health conditions from worsening due to a lack of timely medical attention. Overall, income support has been crucial in bridging the healthcare gap in my community and improving access to essential health services.

**Summary of Findings**

The study sought to determine the impact of income support programs on the health and health equity of black people. It sought to answer the research question what is the impact of income support programs on health equity among the African American population in Buffalo, New York? These questions were further broken down as follows:

Q1: What is the impact of income support programs on health equity among the Buffalo, New York African American population?

Qi: What is the impact of poverty on access to healthcare among the African American population in Buffalo, New York?

Qii: What is the impact of income levels on access to prescription drugs among the Buffalo, New York African American population?

The study hypothesized as follows:

H0: Income support programs have no impact on access to healthcare among the African American population in Buffalo, New York.

H0: Poverty levels have no impact on access to healthcare among the African American population in Buffalo, New York.

H0: Income levels have no impact on access to healthcare among the African American population in Buffalo, New York.

The first question connects to the first hypothesis, and from the analysis, we can answer these using SQ 5-12 as follows:

SQ5: Most respondents believe that their community has programs to provide them with better healthcare services despite their income status.

SQ6: Most respondents indicated receiving social security benefits or disability income in the last year.

SQ7: Many respondents rely on government assistance to meet their basic needs and access healthcare services, highlighting the potential impact of income inequality on healthcare access and outcomes.

SQ8: This data suggests that social security benefits and disability income have played a significant role in helping individuals to access healthcare services, particularly those who may not have been able to afford it otherwise.

SQ9: Many respondents rely on government assistance to meet their basic needs and access healthcare services, highlighting the potential impact of income inequality on healthcare access and outcomes.

SQ10: From this analysis, most respondents consider these support programs important in ensuring access to healthcare for all, regardless of income or poverty status.

SQ11: Income support can play a significant role in bridging the healthcare gap in the community. With financial assistance, individuals and families can access necessary healthcare services, such as doctor visits, medication, and preventive care. Income support can also help alleviate financial stress, positively impacting mental and physical health. Additionally, income support programs can provide access to resources and information to help individuals and families make informed healthcare decisions. Overall, income support can help to ensure that healthcare is more accessible and equitable for everyone in our community.

SQ12: Most respondents stated that they had noticed significant improvements in their healthcare access since they

started accessing these programs and services. Before, they could not afford to see a doctor or get necessary treatments because of financial constraints. However, with the additional income support, they can pay for medical bills, purchase essential medications, and even access preventive care services such as regular check-ups and immunizations. Overall, income support has been crucial in bridging the healthcare gap in my community and improving access to essential health services.

Therefore, the study rejects the null hypothesis that Income support programs have no impact on access to healthcare among the African American population in Buffalo, New York.

We can also answer the research question under the second hypothesis using the survey questions SQ1 and SQ3 as follows:

SQ1: Most of the respondents believe they cannot access healthcare services with their annual earnings

SQ3: These findings suggest that there may be widespread concern about healthcare equality based on income and poverty situations in the community.

From this, we can reject the null hypothesis that Poverty levels have no impact on access to healthcare among the African American population in Buffalo, New York.

On the other hand, we can answer the third research question and null hypothesis using SQ2 and SQ4 as follows:

SQ2: A significant portion of the sample may not have enough financial resources to access prescription drugs even with their regular earnings, which could limit their ability to manage their health conditions effectively.

SQ4: These findings suggest that there may be significant doubts about the fairness and equality of the American healthcare system in the community.

Therefore, the study rejects the null hypothesis that Income levels have no impact on access to healthcare among the African American population in Buffalo, New York.

The study findings support the arguments presented in the literature review that income support programs are critical in ensuring access to healthcare for all, regardless of income or poverty status. The study determined that income support programs, such as social security benefits and disability income, have played a significant role in helping African Americans in Buffalo, New York, access healthcare services. This finding is consistent with the study by Shafer et al. (2022), which suggests that income support programs can help bridge the healthcare gap in the United States by providing financial assistance to enable individuals to access the necessary healthcare services. The study also determined that poverty levels have an impact on access to healthcare among the African American population in Buffalo, New York is also consistent with the findings of the study by (Arcaya et al., 2015), which determined that poverty is one of the most significant barriers to healthcare access in the United States. The study reinforces the need for income support programs to address income inequality and reduce poverty among vulnerable populations, such as African Americans.

Moreover, the study determined that income levels affect access to prescription drugs among the African American

population in Buffalo, New York is also consistent with the literature review. This finding is consistent with the findings by Otto et al. (2021), which stated that income levels affect access to healthcare services, including prescription drugs. This study highlights the high costs of drugs as a barrier to healthcare access. The study also found that Medicaid expansion under the Affordable Care Act increased access to healthcare for low-income individuals, including racial and ethnic minorities. It emphasizes that poverty can limit healthcare access, ultimately leading to poorer health outcomes.

## PART V POLICY RECOMMENDATIONS

1. **Increase Funding for Income Support Programs:** The study findings suggest that income support programs, such as social security benefits and disability income, play a crucial role in improving access to healthcare for vulnerable populations, such as African Americans. Therefore, policymakers should consider increasing funding for income support programs to help reduce poverty levels and improve access to healthcare.
2. **Reduce Drug Costs:** The study findings suggest that high drug costs are a significant barrier to accessing healthcare services for low-income individuals and families. Policymakers and healthcare providers should work together to develop policies and programs that reduce drug costs, such as negotiating drug prices and increasing access to generic drugs.
3. **Increase Healthcare Access:** The study findings suggest that poverty and income levels impact access to healthcare services for African Americans. Policymakers and healthcare providers should work together to develop policies and programs that improve access to healthcare services, such as expanding Medicaid coverage, increasing funding for community health centers, and incentivizing healthcare providers to offer services in low-income and underserved areas.
4. **Address Structural Barriers:** The study findings suggest that structural barriers, such as lack of transportation and language barriers, can impact access to healthcare services. Policymakers and healthcare providers should work together to develop policies and programs that address these structural barriers, such as providing transportation vouchers and offering healthcare services in multiple languages.
5. **Address Racial Bias:** The study findings suggest that racial bias can impact healthcare access and quality for African Americans. Policymakers and healthcare providers should work together to address racial bias in the healthcare system through cultural competence training and increasing diversity in the healthcare workforce.
6. **Increase Research:** While this study provides valuable insights into the factors that impact healthcare access for African Americans, more research is needed to understand the complex issues surrounding healthcare access and equity. Policymakers and healthcare providers should invest in research focusing on healthcare disparities and equity, particularly on vulnerable populations, such as African Americans.
7. **Public-private partnership (PPP).** PPP to deliver public goods and services has earned credits in recent decades. Despite the problems and challenges (Batjargal & Zhang,

2021, 2022; Zhang & Shahid, 2024 ), PPP should be explored for the income support programs on health equity among the low income population, including eligible African American population.

## PART VI CONCLUSION

This study examined the impact of income and poverty on healthcare access among African Americans in Buffalo, New York. The study's findings indicate that income support programs, such as social security benefits and disability income, are crucial in ensuring access to healthcare for all, regardless of income or poverty status. Additionally, poverty levels were a significant barrier to healthcare access among the African American population in Buffalo, New York. Finally, the study's findings suggest that income levels impact access to prescription drugs among African Americans in the same area.

The study's findings have several implications for both theory and practice. Firstly, they highlight the need for income support programs to address income inequality and reduce poverty among vulnerable populations, such as African Americans. Secondly, they underscore the need for policymakers and healthcare providers to develop and implement interventions that address income inequality and reduce poverty levels to ensure that all individuals have access to essential healthcare services. Finally, the findings suggest that policymakers should consider ways to reduce the cost of prescription drugs, particularly for low-income individuals and families.

### Implications

In terms of future research, this study could be expanded to include a larger and more diverse sample of African Americans in different regions of the United States. Additionally, future studies could examine the effectiveness of different types of income support programs, such as Medicaid and the Affordable Care Act, in improving healthcare access and health outcomes among vulnerable populations. Finally, future research could explore the relationship between income, poverty, and healthcare access in other minority groups in the United States, such as Hispanic and Native Americans.

One area for future research is to investigate the impact of cultural and linguistic barriers on healthcare access for African Americans. Previous research has shown that cultural and linguistic barriers can be significant obstacles to accessing healthcare for minorities, including African Americans. Thus, future research should explore how these barriers affect African Americans' healthcare access in Buffalo, New York, and develop interventions to address them.

Another area for future research is to examine the impact of healthcare provider bias on healthcare access for African Americans. Previous research has shown that healthcare providers may hold implicit biases that can lead to differential treatment for African American patients, resulting in disparities in healthcare access and outcomes. Therefore, future research should investigate the extent to which healthcare provider bias affects healthcare access for African Americans in Buffalo, New York, and develop interventions to mitigate the effects of bias.

Moreover, future research should explore the effectiveness of interventions designed to address healthcare disparities among African Americans in Buffalo, New York. The

present study highlights the importance of income support programs in addressing healthcare access for vulnerable populations such as African Americans. However, more research is needed to identify the most effective interventions to reduce income inequality and improve healthcare access for African Americans in Buffalo, New York.

### Limitations

One limitation of this study was that it was conducted in a specific geographical area (Buffalo, New York). Therefore, the results may not be generalizable to other regions in the United States. It also focused entirely on African American participants, and the findings may not be applicable to other racial or ethnic groups.

The study also relied on self-reported data from participants, which may be subject to recall and social desirability biases. Participants may have underreported or overreported their healthcare access and utilization, which could have affected the accuracy of the results.

Additionally, the study failed to assess the quality of healthcare services received by participants, which is an essential aspect of healthcare access; it focused only on the ability to access healthcare services and prescription drugs but did not evaluate the effectiveness or appropriateness of the care received.

Moreover, the study failed to assess the impact of other social determinants of health, such as education, employment, and housing, on healthcare access among African Americans in Buffalo, New York. Future studies should examine the role of these factors in healthcare access and utilization to provide a more comprehensive understanding of healthcare disparities in this population.

### Declarations

- No funding was received for conducting this study.
- The authors have no relevant financial or non-financial interests to disclose.
- Conflict of Interest: None
- Funding information: No funding was received for conducting this study.

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