**Racial Differences in Medicare Primary Care Visits (2012)**

Student’s Name

Institution Name

Assignment Due Date

**Background**

The Medicare program was introduced in the United States to provide health coverage for elderly people. This program was signed into law in 1965 (National Academy of Social Insurance, 2025). Medicare program aimed to reduce health inequality among elderly individuals in the United States. Existing research proves that Medicare programs have contributed to a substantial reduction in health disparities (Greenwood, 2021). However, there have been some claims of racial disparities in access to Medicare programs. There are some claims that all racial groups do not have access to adequate Medicare services. Lack of sufficient access to Medicare programs results in racial disparities in healthcare among elderly individuals. This paper explores this claim using 2012 data of Medicare enrollees having at least one ambulatory visit between the black and white races. The findings of this paper will reveal whether there are racial disparities in access to Medicare services.

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**Introduction**

Health disparities have been a major concern in the United States. This paper presents an analysis comparing the annual percentage of Medicare enrollees having at least one ambulatory visit between the black and white races. This topic is worthy researching because ambulatory primary care is vital in keeping Medicare beneficiaries healthy. Differences between white and black beneficiaries in ambulatory primary care might result in racial disparities in access to healthcare. Researching this topic will help in identifying existing gaps and provide clear insights that could be useful in formulating better health policies.

Previous researchers have addressed this issue both in qualitative and quantitative studies. Quantitative studies have entailed the use of the Medicare dataset to identify how different racial groups benefit from Medicare. For instance, research conducted by Gangopadhyaya et al. (2023) used quantitative data to figure out if there is a difference in ethnic and racial disparities in access to and use of health care between Traditional Medicare and Medicare Advantage. Qualitative studies have entailed the use of interviews and questionnaires to understand barriers that might hinder different racial groups from accessing Medicare. For example, a study conducted by Wilkinson et al. (2025) used a qualitative approach to determine how to improve the Medicare annual wellness. Researchers have operationalized this concept by monitoring how regularly different racial groups access Medicare services. This compares the different racial groups to determine which one accesses the service more.

**Research Question**

Is there a significant difference in the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012 between Black and White beneficiaries?

**Null Hypothesis:** There is no significant difference in the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012 between Black and White beneficiaries.

**Alternative Hypothesis:** There is a significant difference in the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012 between Black and White beneficiaries.

**Research Method**

This research utilized the quantitative approach to analyze whether there is a significant difference in the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012 between Black and white beneficiaries. This approach is suitable because the data is in numeric percentages that can be analyzed easily. Quantitative approach produces data that can be clearly communicated through statistics and numbers (Grand Canyon University, 2025). The independent variables in this analysis are the races, the black and white. The dependent variable in this analysis is the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012.

The statistical test to be used in this analysis will be the independent sample t-test. This test is suitable because the data has been collected from different independent groups, the whites and the blacks. The independent sample t-test is used to compare two sample means from unrelated groups (National University, 2025). The alternative hypothesis is that there are significant differences between the percentage of black and white enrollees who had at least one ambulatory primary care visit in 2012.

**Description of the Dataset**

The primary source of the data used in this analysis is the Dartmouth Atlas. This source provides access to Medicare data across the entire United States (The Trustees of Dartmouth College, 2024). The data of interest in this project is the Average annual percentage of Medicare enrollees having at least one ambulatory visit to a primary care clinician (2012). The sample size of the dataset used in this analysis is 3143. A large dataset sample is effective in offering reliable results.

**Description of the Variables**

From the dataset of interest, the variables are overall, white, and black race. The overall variable represents the annual percentage of Medicare beneficiaries in 2012 who had at least one ambulatory visit to a primary care clinician. The black variable is the annual percentage of the black race beneficiaries who had at least one ambulatory visit to a primary care clinician. The white variable is the annual percentage of the white race beneficiaries who had at least one ambulatory visit to a primary care clinician.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Definition | Description of the code | Source | Year |
| Overall | The annual percentage of Medicare beneficiaries who had at least one ambulatory visit to a primary care clinician | Numeric | Dartmouth Atlas | 2012 |
| Black | This is the annual percentage of the black race beneficiaries who had at least one ambulatory visit to a primary care clinician | Numeric | Dartmouth Atlas | 2012 |
| White | This is the annual percentage of the white race beneficiaries who had at least one ambulatory visit to a primary care clinician | Numeric | Dartmouth Atlas | 2012 |

**Statistical Package**

The statistical package of interest in this analysis is Microsoft Excel.

**Results**

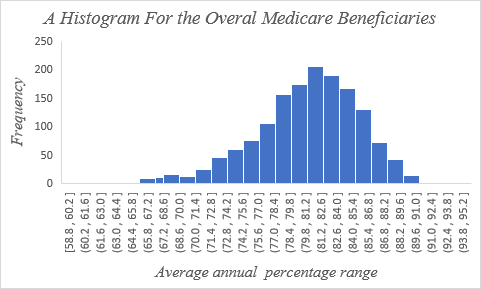
**Results for Descriptive Analysis**

The data had some extreme outliers. Due to this reason, parametric tests could not yield effective results. The next step was to eliminate outliers in the independent variables (race). I used z-scores to find the extreme outliers and eliminate them. After eliminating the outliers, the data was ready for analysis. I removed the missing observation in the data before conducting the analysis.

The following table shows a summary of descriptive analysis.

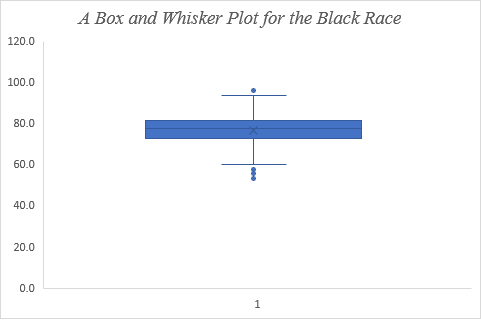
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Overall* |  | *Black* |  | *White* |  |
|  |  |  |  |  |  |
| Mean | 81.1215557 | **Mean** | 76.68009229 | **Mean** | 81.29538563 |
| Standard Error | 0.121304611 | **Standard Error** | 0.175547869 | **Standard Error** | 0.116488293 |
| Median | 81.6 | **Median** | 77.5 | **Median** | 81.9 |
| Mode | 83.5 | **Mode** | 74 | **Mode** | 82.5 |
| Standard Deviation | 4.724654999 | **Standard Deviation** | 6.837358517 | **Standard Deviation** | 4.537065737 |
| Sample Variance | 22.32236486 | **Sample Variance** | 46.7494715 | **Sample Variance** | 20.5849655 |
| Kurtosis | 1.268904115 | **Kurtosis** | 0.423030736 | **Kurtosis** | 1.586534479 |
| Skewness | -0.76710517 | **Skewness** | -0.561314932 | **Skewness** | -0.95031932 |
| Range | 35.6 | **Range** | 44.7 | **Range** | 32.5 |
| Minimum | 58.8 | **Minimum** | 53.4 | **Minimum** | 58.5 |
| Maximum | 94.4 | **Maximum** | 98.1 | **Maximum** | 91 |
| Sum | 123061.4 | **Sum** | 116323.7 | **Sum** | 123325.1 |
| Count | 1517 | **Count** | 1517 | **Count** | 1517 |

The mean for the overall annual percentage of the Medicare beneficiaries is 81.1, while the median is 81.6. The mean of the black race is 76.7, while the median is 77.5. The average percentage for the white race is 81.3, while the median is 81.9. All the other relevant statistical information is shown in the table above. The figure below shows a histogram displaying the distribution of the overall variable in the data.



From the histogram above, it is evident that the data is normally distributed. Most of the values range between 81.2 to 82.6.

The chart below shows a box and whisker plot for the Black variable in the data. From the chart below, it is evident that there are no extreme outliers in the Black variable. Most of the values in the data set lie around the mean and median.



**Results for Inferential Statistics**

|  |  |  |
| --- | --- | --- |
|  | *Black* | *White* |
| Mean | 76.67974934 | 81.29241 |
| Variance | 46.7801507 | 20.58515 |
| Observations | 1516 | 1516 |
| Hypothesized Mean Difference | 0 |  |
| df | 2632 |  |
| t Stat | -21.8818169 |  |
| P(T<=t) one-tail | 5.89082E-98 |  |
| t Critical one-tail | 1.645432772 |  |
| P(T<=t) two-tail | 1.17816E-97 |  |
| t Critical two-tail | 1.960865711 |  |

An independent sample t-test was conducted, and the results above were obtained. The means for the black and white were 76.7 and 81.2, respectively. The variance for the black was 46.8, while for the white it was 81.3. Both variables had 1516 observations. The p-values obtained in this analysis were P (T ≤ t) one-tail 5.89082E-98 (T ≤ t) two-tail 1.17816E-97. The significance level used in this analysis was 0.05.

**Statistical Conclusion**

The alternative hypothesis used in this analysis is non-directional, hence the two-tailed p-value will be used in making a conclusion. Since the p-value is less than the significance level, reject the null hypothesis. This implies that there is a statistically significant difference in the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012 between Black and White beneficiaries.

**Conclusion and Discussion**

From this analysis, it can be concluded that there are significant differences in the percentage of Medicare enrollees who had at least one ambulatory primary care visit in 2012 between black and white beneficiaries. The claim that both black and white races receive equal benefits from Medicare is invalid. the black and white races did not receive equal ambulatory primary care annually in 2012. This implies that one of the groups lacks this primary care, which is essential in keeping Medicare beneficiaries healthy.

The significant difference between the percentage of Medicare beneficiaries among the two races results in disparities in health outcomes in the United States. Healthcare stakeholders should formulate policies that address systematic factors that hinder Black Medicare beneficiaries from accessing ambulatory primary care. Ensuring each group has access to Medicare services will reduce cases of health disparities between the black and white races.

While the findings of this analysis provide useful insights, there are some limitations. The data analyzed in this project was collected in 2012. Many health policies have been formulated since then; the actual findings in this project might not reflect the current situation in Medicare. The data also had many blank spaces and some outliers, which suggested unrealistic outcomes. More consistent data without blank spaces could be useful in producing unbiased outcomes.

**References**

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