

DATE: 2023-07-07

LAB-8: Wilcoxon Signed Rank Test: Length of Each Visit

Recent studies of the private practices of physicians who saw no Medicaid patients suggested that the median length of each patient visit was 22 minutes. It is believed that the median visit length in practices with a large Medicaid load is shorter than 22 minutes. A random sample of 20 visits in practices with a large Medicaid load yielded, in order, the following visit lengths:

9.4 13.4 15.6 16.2 16.4 16.8 18.1 18.7 18.9 19.1

19.3 20.1 20.4 21.6 21.9 23.4 23.5 24.8 24.9 26.8

Based on these data, is there sufficient evidence to conclude that the median visit length in practices with a large Medicaid load is shorter than 22 minutes?

SOLUTION:

Method

η : median of Length of Each Visit

Descriptive Statistics

<u>Sample</u>	<u>N</u>	<u>Median</u>
Length of Each Visit	20	19.55

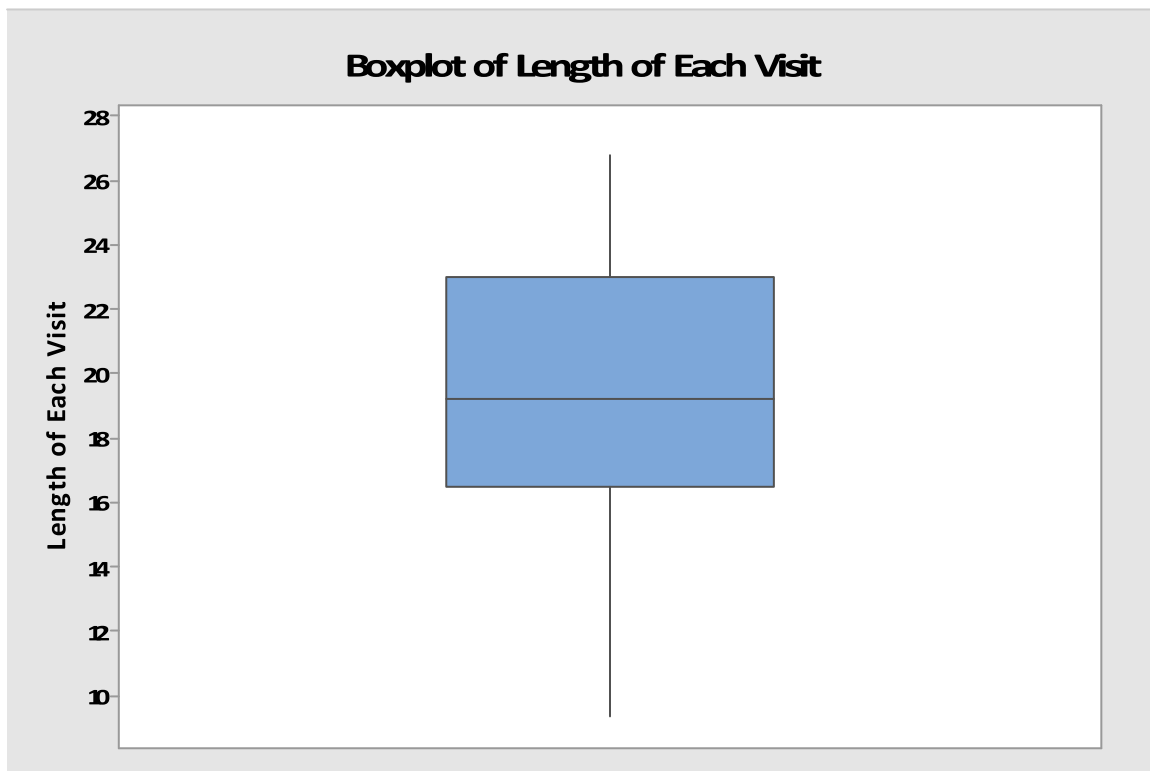
Test

Null hypothesis $H : \eta = 22_0$

Alternative hypothesis $H : \eta < 22_1$

N for Wilcoxon

<u>Sample</u>	<u>Test</u>	<u>Statistic</u>	<u>P-Value</u>
Length of Each Visit	20	38.50	0.007



The Box and Whisker Plot shows that the distribution is right skewed. This provides evidence that the median visit length is shorter. Shorter visit length are more frequent.

CONCLUSION:

The p-value ($= 0.007$) $< \alpha$ ($= 0.05$), the test also confirms that the median visit length is significantly lower than 22 minutes.