Observational Study of Longwood University Sophomores and Juniors on Height and National Health Insurance

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Introduction

In this observational study, the heights and opinions on national health insurance of Longwood University sophomores and juniors is recorded and compared. For height, it was found that a majority of the juniors are taller than the sophomores. Opinions on national health insurance were similar between sophomores and junior, with yes being the most prevalent answer for both groups.

Data Collection

Our populations of interest are sophomores and juniors at Longwood University. We used a sample of 20 people from these populations. To maintain accuracy, all participating students received an ID number and were categorized by grade. Each student answers a two question survey, the questions are as follows: how tall are you (in inches), and do you think the government should provide a national health insurance program for all Americans, even if this would require higher taxes? The data collected from question one is quantitative/numerical, whereas; the data collected from question two is qualitative/categorical. Since the students were surveyed to collect this information, it is an observational study. A random number generator was used to select student ID numbers. A max and min number was entered and 20 numbers within those bounds were selected. This was done for both of our samples. Using this form of selection guarantees complete randomization, as there is no possible bias within the machine.

Data Description

In the distribution of the answers to national health insurance we can see, in Graph 2, that it is bimodal. The most common answer by sophomores was yes, with no running a close second: this is visible in Table 1. Their closeness in yes and no count with a lack of unsure answers makes the graph bimodal. Similar to sophomores, juniors' top answer was yes, with no in second, which can be seen in Table 1. However, no and unsure counts were very close, thus making their distribution unimodal; which is visible in Graph 4.

Table 1: National Health Insurance Answers

	Sophomores	Juniors
No	7	6
Unsure	3	5
Yes	10	9

Sophomore heights are displayed in Graph 1, which left skewed unimodal. Junior heights are shown in Graph 3, which is right skewed unimodal. By comparing Graphs 1 and 3, it can be seen that the mid range of the graphs are rather different. Sophomores' mid range is between 63 and 67 inches, whereas; the juniors' mid range is between 67 and 73. Displayed in table 2, we can see that on average the junior class is taller, with their mean height being 1.45 inches taller than the sophomores'. Juniors also have a higher median than sophomore, by 1.5 inches. Sophomores and juniors had similar modes, but juniors' were slightly taller (by 1 inch) than sophomores'.
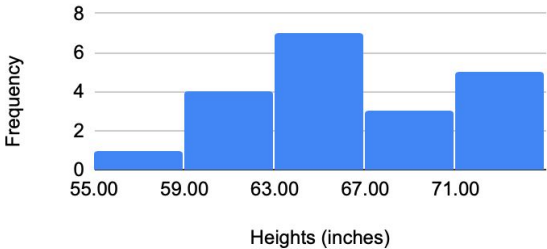
Table 2: Height Statistics

	Sophomores	Juniors
Mean	66.35	67.8

Standard Deviation	4.428	5.791
Median	66	67.5
Mode	66	67

Appendix

Graph 1
Sophomore Heights

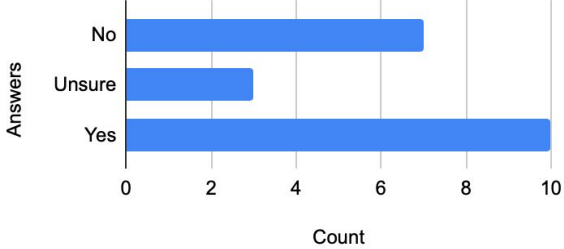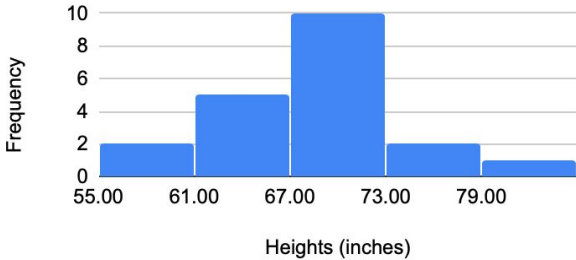### Graph 2
Sophomore Answers

Graph 3
Junior Heights

Graph 4
Junior Answers