



Unhealthy Breakfast Cereals

Data Analysis of Sugar and Calories Content in Cereals produced by Post and Other Manufactures

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They come in colorful boxes and a promise of a delicious breakfast for you. But is your favorite cereal loaded in sugar, or calories? According to the CDC, a balanced diet plays an important role in reducing the risk of cancer and other chronic diseases in life. The data used for this analysis was retrieved from JMP software.

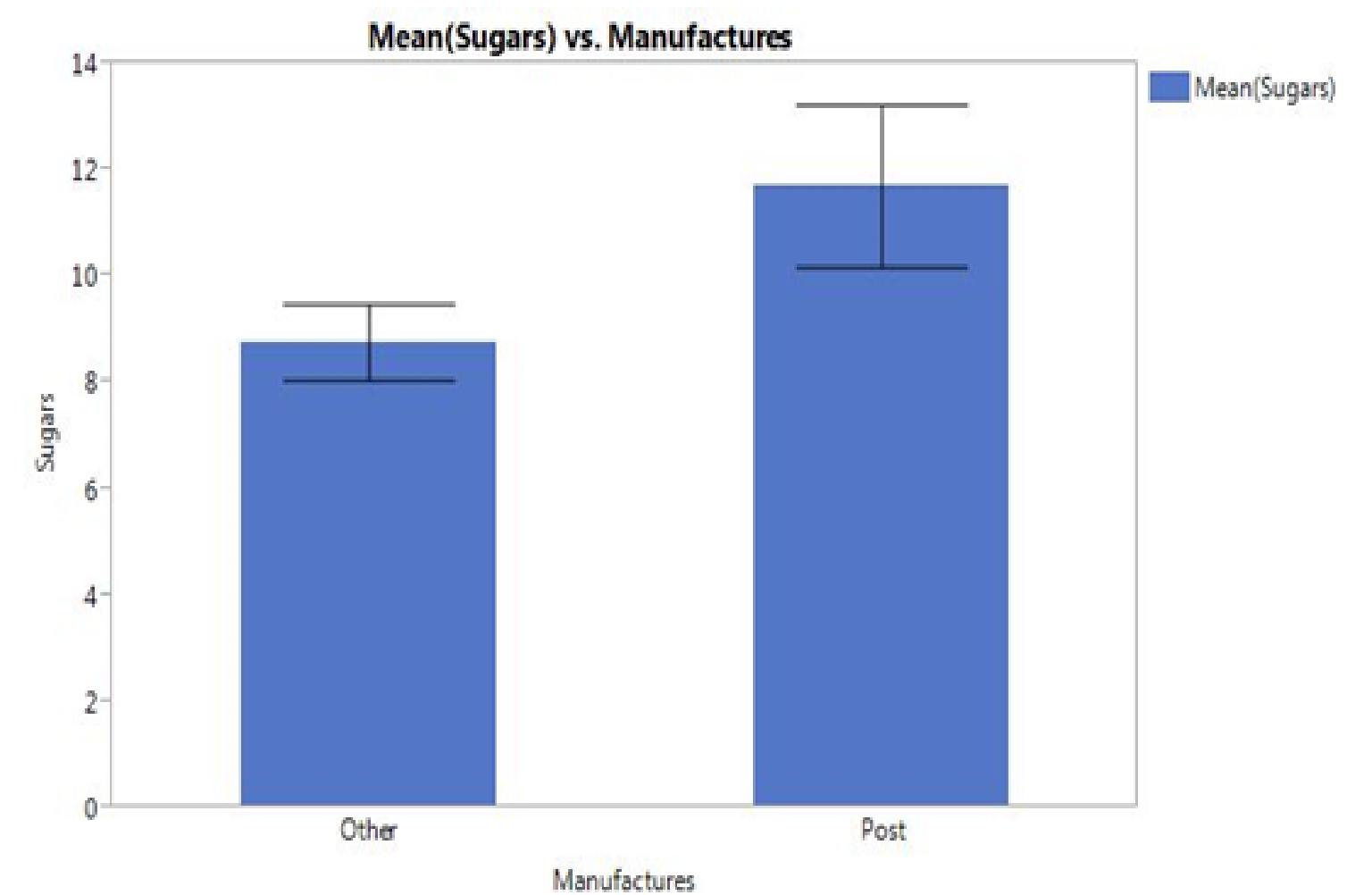
The Hypothesis

Hypothesis: Does Post manufacture cereals with a different sugar content than other manufactures?

Null Hypothesis: Manufacturer Post produces cereals with the same sugar content as other manufacturers.

Hypothesis: Does Post produces cereals with more calories than other manufacturers?

Null Hypothesis: Other manufacturers produce cereals with fewer calories than manufacturer Post.

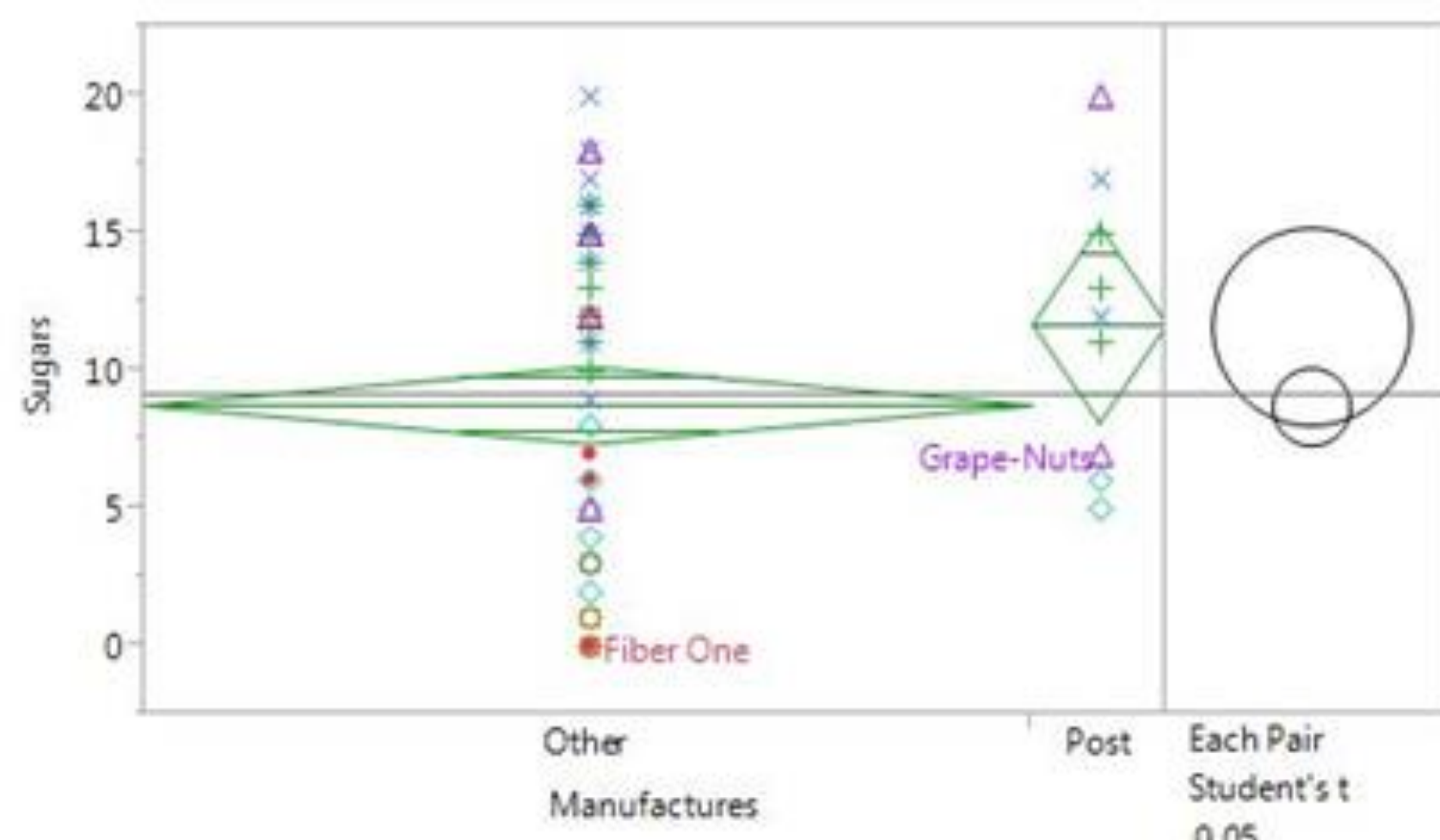


The Graph of the Mean(sugar content) versus Post manufacture and other manufactures of cereals including SEM bars.

Methods Used for Analysis

JMP Software was used to analyze this data. JMP is a program designed to create graphs, table, charts and reports which provide important statistical results.

The hypothesis were tested by the *t* Test including the means, standard deviations and *p* values.



Means and Std Deviations

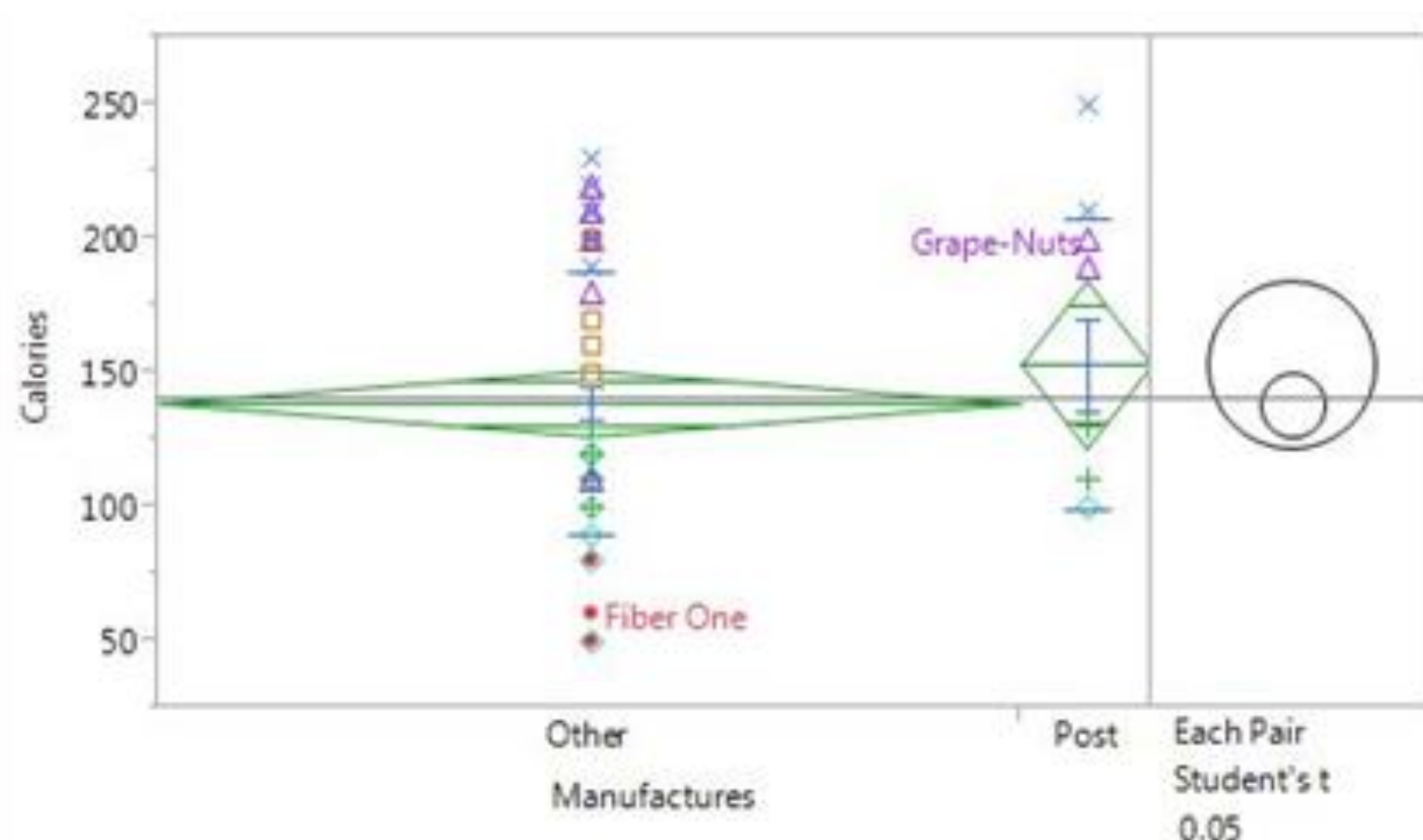
Level	Number	Mean	Std Dev	Std Err Mean	Lower 95%	Upper 95%
Other	66	8.7576	5.81526	0.7158	7.3280	10.187
Post	10	11.7000	4.83161	1.5279	8.2437	15.156

Prob > |t|

0.1328

The *t* Test for the first Hypothesis:

The *t* Test shows that there isn't a large difference in the means of the sugar content of Post and the other manufacturers. The sugar content in cereals manufactured by Post mean was 11.7 and the other manufacturers mean was 8.7. The *p* value was Prob > |t| 0.1328 which is higher than the significance level of 0.05. There the difference is not statistically significant and the null hypothesis can't be rejected. The means are the same.



Means and Std Deviations

Level	Number	Mean	Std Dev	Std Err Mean	Lower 95%	Upper 95%
Other	66	138.636	49.0176	6.034	126.59	150.69
Post	10	153.000	54.3752	17.195	114.10	191.90

Prob > t

0.1986

The *t* Test for the second Hypothesis: The difference in the mean of the calorie content between the other manufacturers and Post is not statistically significant. Post mean calories was 153.0 and the mean calories for other manufacturers was 138.63. The *p* value was Prob > t 0.1986 and it is larger than the significance level of 0.05 which confirms that the null hypothesis can't be rejected. The other manufactures cereals content had fewer calories than the Post manufacturer cereals.

Conclusion: The data obtained from JMP software representing the sugar and calories content of Post and other manufacturers of cereals was analyzed and the first hypothesis was not accepted because the *t* Test confirmed the *p* value was Prob > |t| 0.1328 and therefore Post manufacturer produces cereal with the same sugar content than other manufacturers. The second hypothesis was also not accepted because the data analysis results showed a *p* value of Prob > t 0.1986. The null hypothesis could not be rejected, therefore other manufacturers produce cereals with fewer calories than Post does.

References: Motulsky, Harvey. Intuitive Biostatistics – A Nonmathematical Guide to Statistical Thinking. 3rdEd. Oxford University Press. New York. 2014

www.cdc.gov/family/reunions