

IS 507 - Data, Statistical Models and Information - Discussion 2

Statistics is Everywhere

1. Summarize what your article/post is attempting to explain with statistics.

During the outbreak of Covid-19 many organisations had been doing research on developing different drugs to inhibit the spread of the virus. The paper which I have chosen is tries to analyse the efficacy nature of some common therapeutics used in Covid-19 clinical trials.

The data for the research has been collected by the team from authentic medical and papers and authorised government websites. Few commonly known therapeutics are chosen belonging to the different class of drug and then clinical trials are carried out. Based on the results of those tests it tries to identify the most effective drug for combating Covid-19.

2. Do you believe it is portraying the statistics (text and/or visualizations) in the article/post accurately? Why or Why not?

According to me, the pie charts in the paper are simple to understand what it tries to tell about the treatment categories but the textual statistics in the paper do not truly convey their meaning. If a layman reads the paper for the first time, it is very difficult for them to make meaning of the data, graphs and the text which is mentioned even with basic idea of statistics. The data visualisations in the paper (Fig. 1 and Fig. 2) tell us about the proportion of all the therapeutics which belong to Antiviral, Immunity Modifiers category etc. The percentages are difficult to compute because there is no data available for the Immunity Modifiers which can help us estimate their potency alone. The 'Treatment Target' bar chart has been provided but it does not explain all the parameters involved.

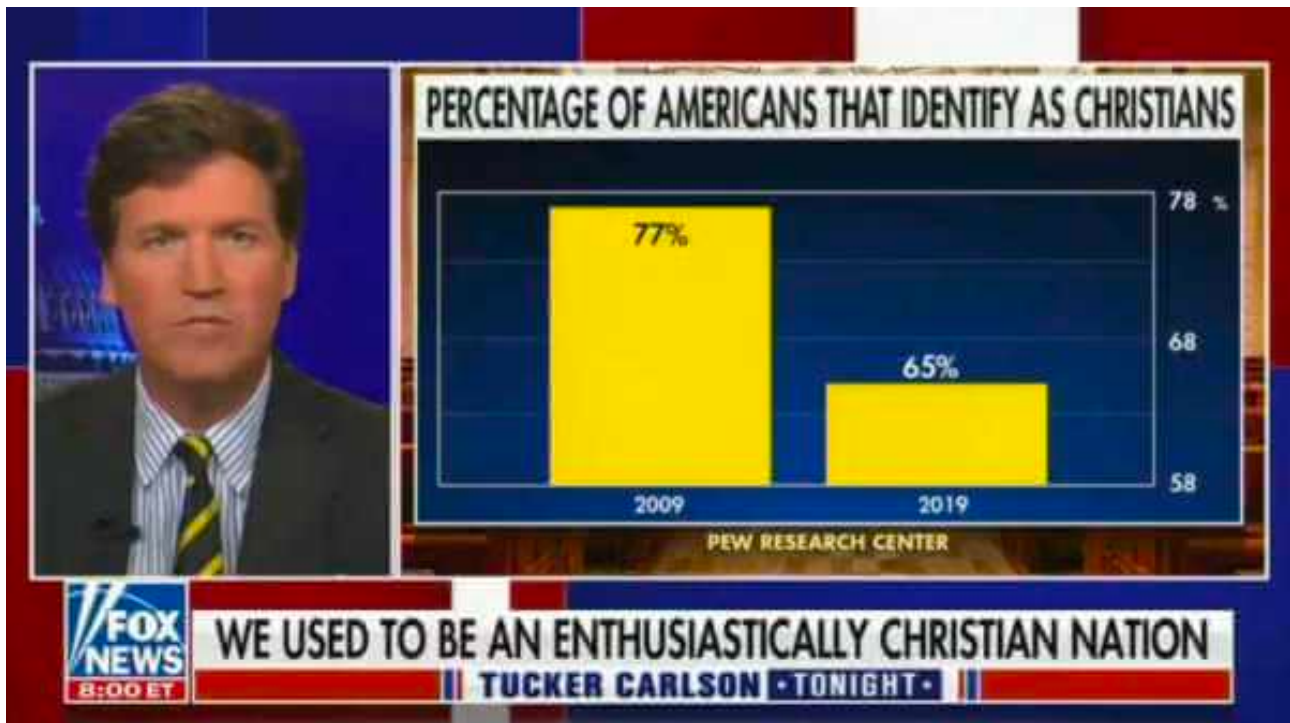
When testing the antiviral group medicines - *Remdesivir* and *Lopinavir-Ritonavir* the testing was carried out on volunteers given placebo and the medicine. A T-Test was conducted and it was observed that the people who received the medicine had recovered quickly as compared to those given placebo. The issue is whether the T-Test conducted was a paired one or not and how many individuals were included in the sample.

For the antibiotics, anti-malarial, and anti-parasitic medicine group, a similar study was carried out. The paper directly mentions the results of the tests carried out and does not include important factors like the sample size, if the test was paired or not and whether the placebo/medicine was administered regularly or on specific intervals.

3. How can statistics be misleading?

Statistics and graphs can sometimes be misleading in the way how they are represented.

The following image has been taken from a news channel which shows the percentage of Americans who identify themselves as Christians. They have taken data in the year 2009 and 2019. The graph has error and when people look at it they see that there has been a significant decrease in the number of American Christians from 2009 to 2019. But in reality, the difference is just 12%. If one notices, the Y-axis starts from 58 and not 0 which exaggerates the 12% difference from 2009 to 2019.



4. Source link of the post.

Link for the paper:

<https://iopscience.iop.org/article/10.1088/1742-6596/1827/1/012172>

Link for the statistics misleading example:

<https://www.rawstory.com/fox-news-misleading-graphs/>

5. Citations and Reference in APA format

Zhang, X., Jhu, Q., Qiang, J., & Shen, J. (n.d.). *Covid19 Drug Efficacy Statistical Analysis*. <https://iopscience.iop.org/article/10.1088/1742-6596/1827/1/012172>. Retrieved September 9, 2022, from <https://iopscience.iop.org/article/10.1088/1742-6596/1827/1/012172>

Reed, B. (2021, September 28). *Journalism professor posts hilarious history of Fox News's worst and most misleading graphs*. Raw Story - Celebrating 18 Years of Independent Journalism. Retrieved September 9, 2022, from <https://www.rawstory.com/fox-news-misleading-graphs/>