The Analysis of the Performance of Data Analysis Students

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Introduction

In this survey, we seek to understand individuals' preferences and practices regarding the treatment of flu-like symptoms. We aim to explore the frequency of experiencing these symptoms, the usage patterns of homemade remedies versus traditional medicines, perceived effectiveness of these treatments, and the factors influencing treatment choices, including availability, past experiences, and cultural traditions. By gathering insights into these aspects, we can gain a comprehensive understanding of how people approach flu treatment, which can inform healthcare professionals and policymakers in developing more tailored and effective interventions.

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Research Question

How do homemade recipes for sickness relief compare to traditional medicines in terms of perceived effectiveness among individuals experiencing flu-like symptoms?

Hypothesis

We hypothesize that individuals may perceive homemade recipes as more effective than traditional medicines due to factors such as natural ingredients, cultural beliefs, and perceived lower side effects.

Population of Interest:

The population of interest here has no limit. From children under the age of 18, to adults over the age of 35

Sampling Method:

The sampling method I used here is what is known as simple random.

Bias Identification:

In designing this survey, we have taken steps to identify and minimize potential sources of bias. define your own bias and how you made sure it didn't leak into your questions.

Survey Questions:

1. How frequently do you experience symptoms of the flu in a month?
2. How often do you use homemade recipes or traditional medicines for sickness relief?
3. Rate the effectiveness of homemade recipes on a scale from 1 to 5.
4. Rate the effectiveness of traditional medicines on a scale from 1 to 5.
5. What factors influence your choice between homemade recipes and traditional medicines when treating sickness?

Online survey link: https://forms.gle/eZAi9aNsnYcoAJTQA

Number of samples collected: 36

Analysis:

Using simple coding methods & functions, I was able to calculate the mean, median, etc. Below you can find the necessary information

```
Mean of homemade recipes: 3.4000000000000004
Mean of traditional medicines: 3.8333333333333335
Median of homemade recipes: 3.0
Median of traditional medicines: 4.0
Mode of homemade recipes: 3.0
Mode of traditional medicines: 4
```

In addition, we will employ visual representations of the data, such as charts and graphs, to facilitate the identification of trends and patterns.

1)
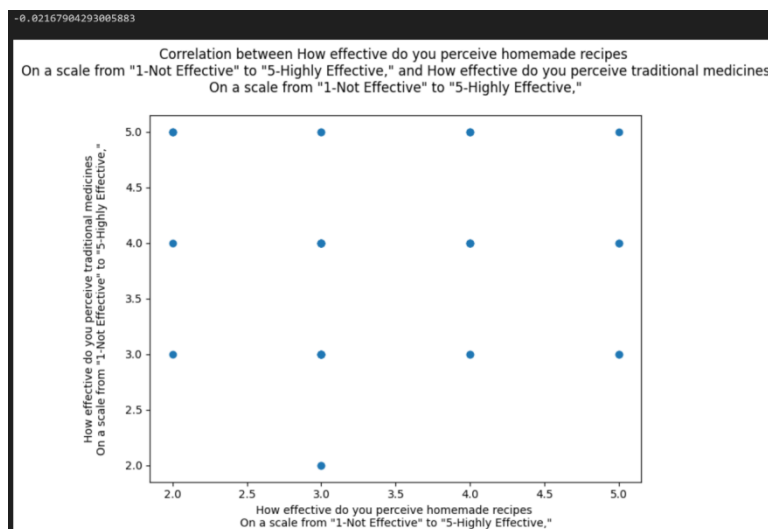
Correlation is: **-0.02167904293005883**

The picture shows people's opinions on traditional medicine and homemade recipes are mostly separate. The very weak correlation coefficient means there's basically no connection between the two. In simpler terms, if someone believes in traditional medicine, it doesn't necessarily mean they trust grandma's recipes, and vice versa.
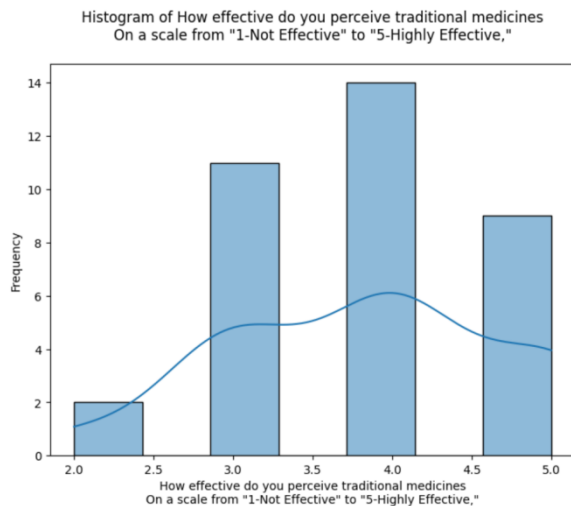
Quntitative Variables Analysis:
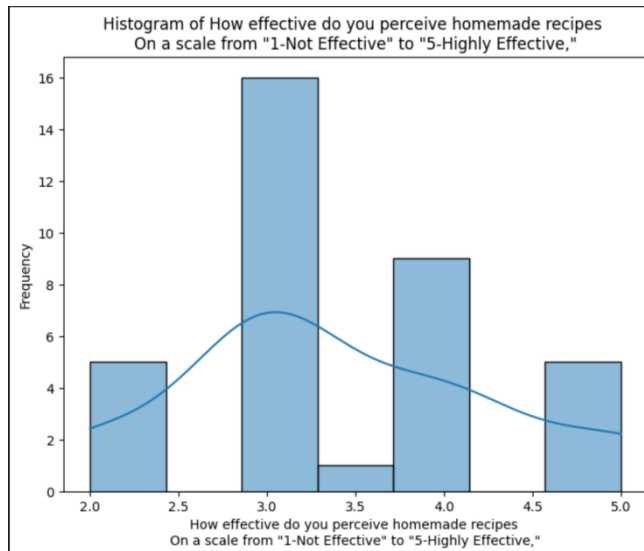
The histogram reveals a neutral to somewhat positive perception of homemade recipe effectiveness, with most responses concentrated around moderate ratings (3 and 4) and a slight skew towards the positive side.

Neutral to somewhat positive perception: The data leans towards a neutral to somewhat positive perception of homemade recipe effectiveness. Most responses cluster around the middle ratings (3 and 4 on the scale), indicating a belief in moderate effectiveness.

Possible bimodal distribution: There might be a slight bimodal distribution, with smaller peaks at the ends (1 and 5). This suggests that while most find homemade recipes somewhat helpful, there are distinct groups who believe they're either highly effective or not effective at all.

Histogram of How effective do you perceive traditional medicines
On a scale from "1-Not Effective" to "5-Highly Effective,"

The histogram indicates a neutral to somewhat positive perception of traditional medicines. The majority of responses cluster around moderate effectiveness (3 and 4 ratings), with a slight lean towards the positive side.

Weak Correlation: There seems to be a very weak correlation between age and perceived effectiveness. This means there's no clear trend where data points move consistently in one direction (up or down) together as age increases.

Scattered Distribution: The data points are scattered throughout the plot, indicating no strong relationship between age and perception.

Categorical Variables Analysis:
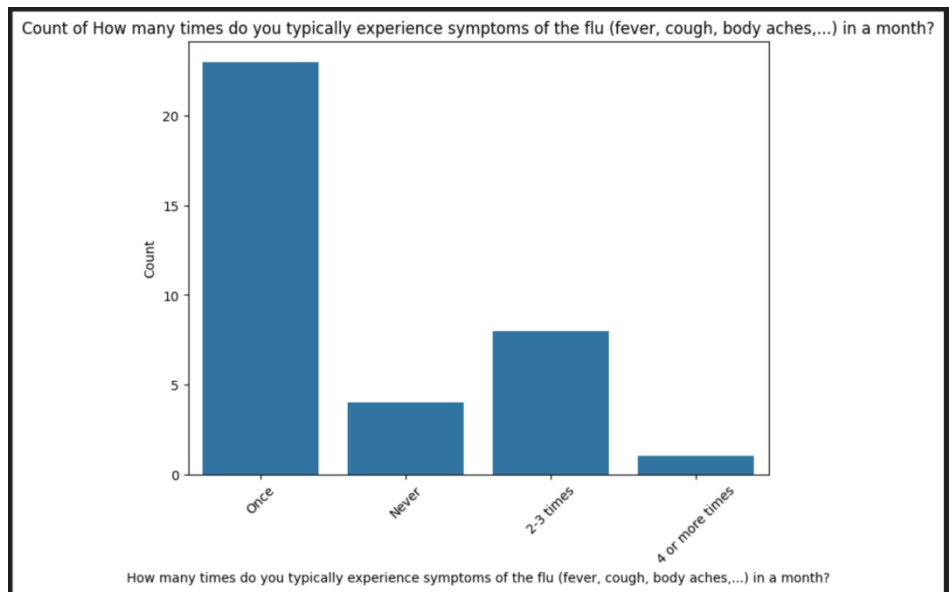
The x-axis is labeled "How many times do you typically experience symptoms of the flu...?" and ranges from "Never" to "4 or more times." The y-axis is labeled "Count." The bars on the graph show the distribution of the survey responses.

Here's what the data suggests:

- **Most people rarely get the flu:** The highest bar is at "Never," indicating most people surveyed don't experience flu symptoms in a typical month.
- **Some people get the flu multiple times a month:** The bars show a decreasing number of people reporting the flu "2-3 times" and "4 or more times" per month.

Count of How often do you use homemade recipes (herbal teas, chicken soup,...) or traditional medicines (e.g., cold and flu tablets, cough syrup) for sickness relief?
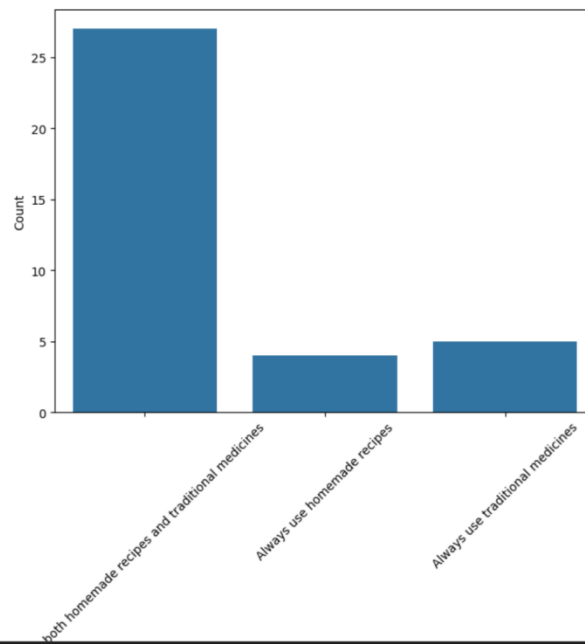
The x-axis labeled "How often do you use homemade recipes and medicine " ranges from "Always use homemade recipes" to "Always use traditional medicines" with "both homemade recipes and traditional medicines" in between. The y-axis is labeled "Count." The bars on the graph show the distribution of the survey responses.

Here's what we can learn from this data:

- **Mixed preference for treatment:** The data shows people are spread across all three categories (homemade remedies, traditional medicines, and both). There isn't a single overwhelming favorite for treating sickness.
- **Possible preference for homemade remedies:** The leftmost bar ("Always use homemade recipes") is the tallest, although by a small margin. This suggests a potential slight preference for using homemade remedies over traditional medicines.
- **Many people use a combination:** The center bar ("both homemade recipes and traditional medicines") is also quite tall, indicating that many people incorporate both approaches into their sickness relief strategy.

Count of What factors influence your choice between homemade recipes and traditional medicines when treating sickness? Please select all that apply.
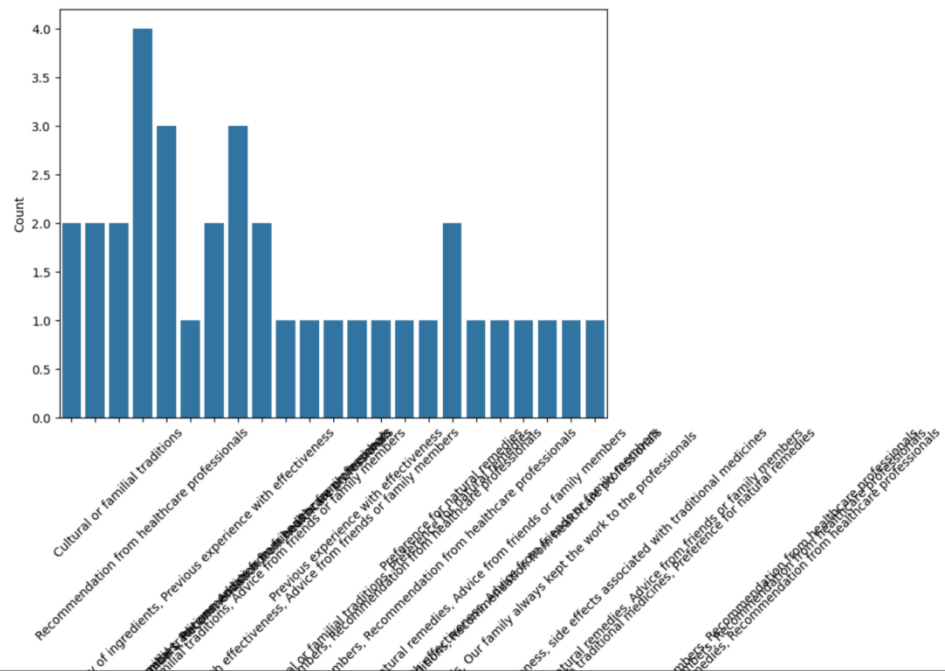
The x-axis lists the various influencing factors and "None of these" while the y-axis is labeled "Count." The bars on the graph show the distribution of the survey responses.

Here's a breakdown of what the data suggests:

- **Multiple factors influence choice:** The most striking feature is that there isn't a single dominant bar. This indicates that people consider various factors when choosing between homemade remedies and traditional medicines.
- **Top factors:** Among the top factors influencing choice are cultural or familial traditions, previous experience with effectiveness, and recommendation from healthcare professionals. This suggests that people prioritize tradition, personal experience with positive outcomes, and medical guidance when making their decisions.
- **Other factors considered:** Advice from friends or family members and side effects associated with traditional medicines are also considered by some respondents, although to a lesser extent than the top three factors.

Conclusion

When it comes to fighting sickness, people don't just grab the first thing on the shelf. This analysis shows a blend of factors influencing the choice between grandma's recipes and drugstore remedies. Tradition, past success stories (think "that chicken soup always works!"), and a doctor's advice all play a role. While some folks lean on tradition or personal experience, others trust their healthcare professional's opinion. This mix highlights the importance of open communication between patients and doctors to explore all treatment options. The bottom line? Picking your cure isn't a simple choice - it's a personalized mix of tradition, past experiences, and medical expertise.

Any potential issues

Small Sample Size:

A significant concern across all the data visualizations was the small sample size. This limitation restricts the data's statistical significance. In simpler terms, the data may not accurately reflect the broader population of students or interns because it doesn't encompass a large enough group. A larger sample size would provide more robust results and allow for more generalizable conclusions.

Categorical Variables :

The analysis leaned heavily on categorical variables, as opposed to quantitative ones. While this approach offers valuable insights into how data falls into distinct categories, it can be restrictive. Categorical data analysis excels at revealing group distributions, but it doesn't provide the same level of detail or flexibility for comparisons and calculations that quantitative data (numerical data) allows for.