Unveiling the Links: Trust, News, and Health

This study explores the captivating interplay between public trust in government, news consumption habits, and openness to medication. We delve into these topics by leveraging scientific research to create a clear and accessible narrative for a broad audience, regardless of technical expertise.

Our central inquiries are twofold:

1. **Does sources of news significantly influence how people perceive their government?**
2. **Is there a link between individuals' Openness to medication and their overall health?**

These questions transcend mere statistical curiosity. They hold significant weight in the realms of social psychology and public health. By framing the investigation in this context, we aim to illuminate complex phenomena in a way that resonates with the broader scientific community. We prioritize understanding the intrinsic motivations behind these relationships, not just the statistical outcomes.

This exploration has the potential to yield valuable insights that could inform policies and practices. Ultimately, we strive to gain a deeper understanding of societal dynamics and individual well-being.

Data Source

The European Social Survey Round 2 Integrated Dataset (ESS2), edition 3.6, serves as the foundation for this analysis. (**Note:** Due to data unavailability, Italy is excluded from this specific edition.)

The ESS2 boasts a rich collection of data gathered through face-to-face interviews with individuals across Europe. It encompasses a diverse range of socio-demographic variables, attitudinal measures, and health parameters, making it an ideal resource for our investigation.

For our study protocol, we extracted key variables related to individuals' media consumption habits, including television, radio, newspaper, and internet usage. Additionally, we focused on parameters like government trust, which is central to our first question.

Shifting to the health inquiry, we analyzed variables associated with health behaviors and outcomes. These include self-reported health status, medication use (both prescribed and herbal remedies), frequency of medical checkups, concerns about medication side effects, and beliefs regarding self-healing illness. By analyzing these parameters, we aim to uncover a potential connection between openness to medication and overall health status among the surveyed individuals.

The complete dataset, along with detailed documentation and codebooks, is readily available through the official European Social Survey website (dataset: link to ESS website). The data collection protocol adheres to the standardized procedures outlined by the ESS, ensuring consistency and reliability across different survey waves and participating countries.

Theory and Statistical Techniques

- **Hypothesis Testing:** We used hypothesis testing to determine if there were significant differences in information consumption and health-related variables between groups with varying levels of trust or openness.
- **Normality Testing:** The Kolmogorov-Smirnov (KS) test was used to assess the normality of the data. Since normality wasn't met, non-parametric tests were employed.
- **Distribution Comparison:** The Kruskal-Wallis test, a non-parametric alternative to ANOVA, was used to compare the distributions of "total_time" and propaganda variables between those who trust and those who don't trust the government. Also, all the tests related to health was conducted with kruskal test methodology.
- **Mann-Whitney U Test:** To solidify the findings from the Kruskal-Wallis test, a Mann-Whitney U test was conducted to compare the "nwsppol" or ‘total time on political newspaper’ distribution between high and low news readers (above and below average).

Statistical Tools

- **Software:** Python (with libraries)
- **Libraries:**
    - pandas (pd) for data manipulation and analysis
    - numpy (np) for scientific computing and array operations
    - matplotlib (potentially) for visualizations (although seaborn is preferred for this analysis)
    - seaborn (sns) for advanced statistical data visualization
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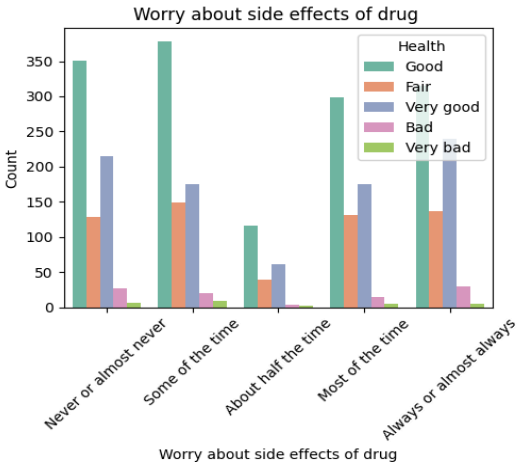
Results

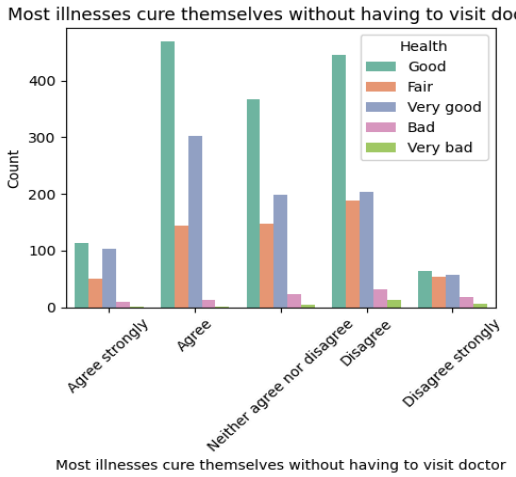
- **Government Trust:** The Kruskal-Wallis test revealed differences in the distributions news consumption (particularly political news or ‘nwspol’) between groups trusting and distrusting the government (pvalue ≃ 0.01). The Mann-Whitney U test confirmed that those reading more news, especially political news, are more likely to trust the government(pvalue≃ 0.001) .
- **Openness to Medicine:** Hypothesis testing identified a significant difference in ‘usmdprs’ (potentially related to using medical prescription), ‘illcure’ (beliefs regarding self-healing illnes), ‘hltherb’(usage of herbal remedies), and ‘tmcnsdc’(frequency of medical checkups) values between groups with high and low overall health.

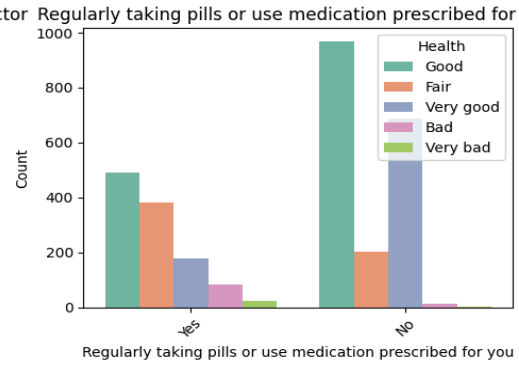
  (check pvalues in the following table)

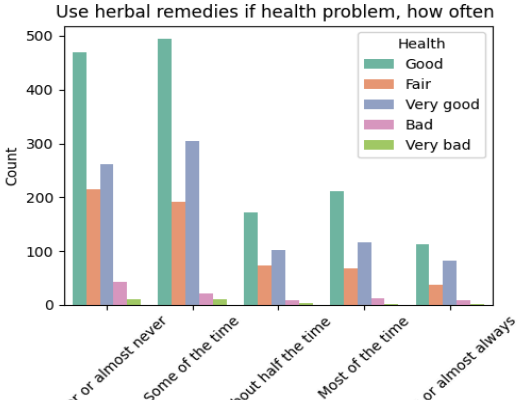
	variable	p-value
0	mdsdeff	9.544055e-01
1	illcure	1.319896e-08
2	usmdprs	1.542605e-31
3	hltherb	4.922018e-02
4	tmcnsdc	1.157075e-31

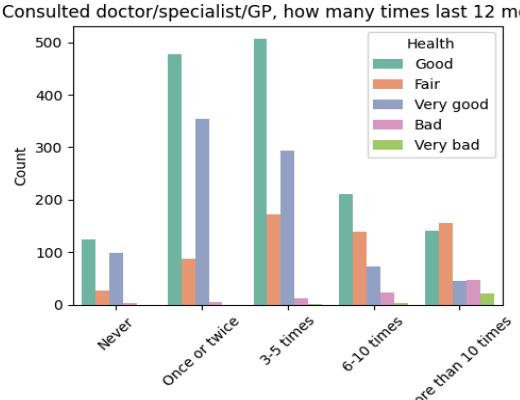
Here we can see some of the variable distributions

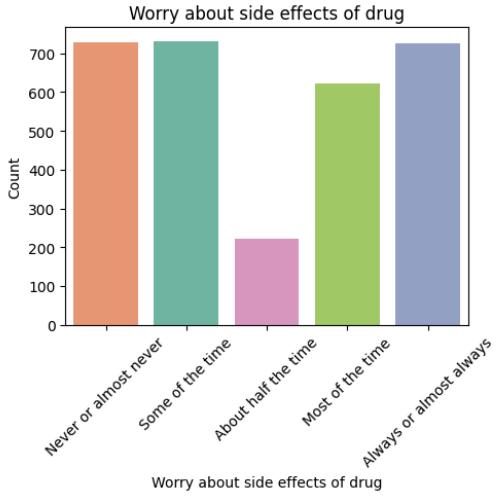


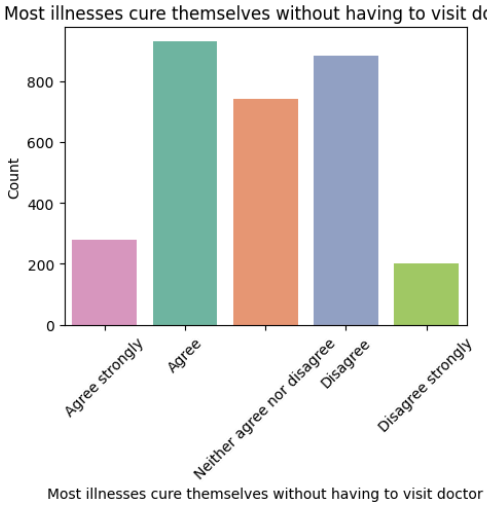


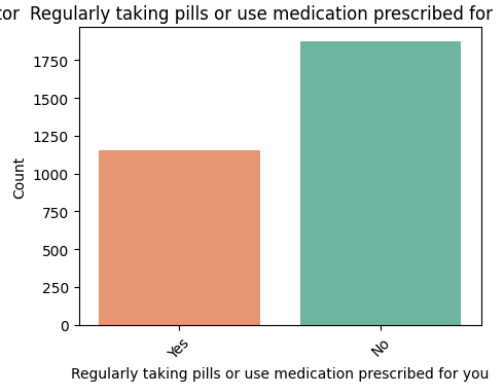


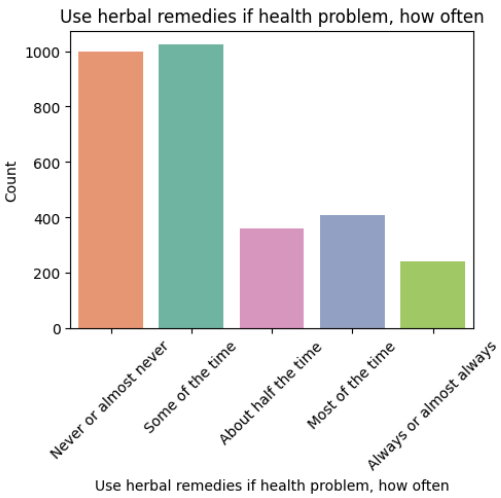


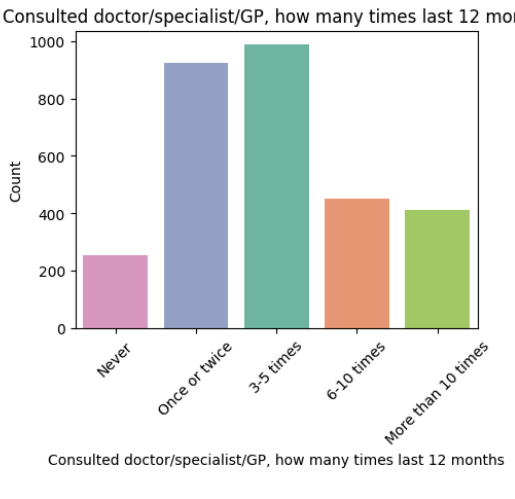



Worry about side effects of drug
Count
0
100
200
300
400
500
600
700
Never or almost never
Some of the time
About half the time
Most of the time
Always or almost always
Worry about side effects of drug


Most illnesses cure themselves without having to visit doctor
Count
0
200
400
600
800
Agree strongly
Agree
Neither agree nor disagree
Disagree
Disagree strongly
Most illnesses cure themselves without having to visit doctor


Regularly taking pills or use medication prescribed for you
Count
0
250
500
750
1000
1250
1500
1750
Yes
No
Regularly taking pills or use medication prescribed for you


Use herbal remedies if health problem, how often
Count
0
200
400
600
800
1000
Never or almost never
Some of the time
About half the time
Most of the time
Always or almost always
Use herbal remedies if health problem, how often


Consulted doctor/specialist/GP, how many times last 12 months
Count
0
200
400
600
800
1000
Never
Once or twice
3-5 times
6-10 times
More than 10 times
Consulted doctor/specialist/GP, how many times last 12 months

Conclusion

The analysis suggests a link between information consumption and government trust and openness to medicine. People consuming more news, particularly political news, are more likely to trust the government. Additionally, individuals with differing openness to medicine exhibit variations in USMDPRS values.

Threats to Validity:

- **Limited Data:** The results may not generalize to the broader population if the sample size or demographics are not representative.
- **Causality vs. Correlation:** The study establishes correlations, not causation. People trusting the government might naturally gravitate towards political news, not vice versa.
- **Bias of data:** some of the variable values are not 100% accurate due to information taken from individuals without any confirmation.

Further research with a more robust design and control for confounding variables is recommended to solidify these findings and establish causal relationships.

References:

1. *ESS2 - integrated file, edition 3.6 (Italy not included). DOI: 10.21338/ess2e03_6*

2. *Hasin, M. A. A., Roongrat Seeluangsawat, and M. A. Shareef. "Statistical measures of customer satisfaction for health care quality assurance: a case study." International Journal of Health Care Quality Assurance 14.1 (2001): 6-14.*

Contributions of co-authors:

Yazan Alnakri answered the first question:**Does sources of news significantly influence how people perceive their government?**

Hamza Shafee Aldaghstany answered the second question:**Is there a link between individuals' openness to medication and their overall health?**