Factors that Influence College Students' Decision to use Herbal Supplements

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Problem Statement

- Herbal supplements are products made with plants, herbs, or botanical supplements that are thought to be helpful for treating illnesses and promoting good health
- While they are widely used, herbal supplements do not require an evaluation by the U.S. Food and Drug Administration (FDA); they are not proven safe or effective
- Despite this, they are heavily marketed and easily available through the internet, pharmacies, and retail shops
- In this study, a better understanding is gained regarding how college students from a rural area use and regard herbal supplements

Background Research

- Unless they are OTC, medicines needs to be prescribed by a doctor. Federal law requires that all medicines be rigorously tested as safe and effective before FDA approval. Only then, medicines become available to the public.[1]
- In contrast, supplements do not need to be approved by any government organization. Complementary and alternative medicine is not regulated by the FDA due to the Dietary Supplement Health and Education Act of 1994.[2] Even if a supplement is found to be unsafe, there is no required recall or change in label

Background Research

FDA NEWS RELEASE

FDA Warns 10 Companies for Illegally Selling Dietary Supplements Claiming to Treat Depression and Other Mental Health Disorders

For Immediate Release: February 19, 2021

Español

Today, the U.S. Food and Drug Administration announced warning letters to 10 companies for illegally selling dietary supplements that claim to cure, treat, mitigate, or prevent depression and other mental health disorders, in violation of the Federal Food, Drug, and Cosmetic Act (FD&C Act). The warning letters were issued to: Enlifta LLC; Lifted Naturals; Mountain Peak Nutritionals; SANA Group LLC.; Wholesome Wellness; Dr. Garber's Natural Solutions; ProHealth Inc.; Blossom Nature LLC; FDC Nutrition Inc.; and Silver Star Brands, Inc.

"Dietary supplements that claim to cure, treat, mitigate or prevent depression and other mental health disorders are unapproved new drugs that could potentially harm consumers who use these products instead of seeking proven treatments from qualified health care providers. This is especially concerning during the ongoing pandemic, when consumers are even more susceptible to depression and mental health issues," said Steven Tave,

Background Research

- Dietary supplements are products taken by mouth that include “dietary ingredients”, like vitamins, minerals, amino acids, and other substances intended to augment a diet.
- A category of dietary supplements is herbal supplements, which are made from botanical sources. These are typically consumed to help with symptoms of or cure an illness, promote good health, or as a preventive measure. [3]

Background Research

- Herbal remedies aren't necessarily 'alternative'. For example, foxglove is proven to work in treating heart failure, willow tree bark does treat headaches, and artemisia can treat malaria.
- However, many herbs' marketing does not match their effectiveness. Ginkgo doesn't ward off Alzheimer's disease. St. John's wort doesn't cure depression. Garlic doesn't lower cholesterol. Echinacea doesn't treat colds. [4,5]
- Taking these supplements in substitution of prescription medicine can be dangerous; causing higher rates of early deaths. [6]

Research Questions

- How do college students from rural areas find out about herbal supplements?
- How do college students from rural areas decide whether or not to use herbal supplements?
- Does a positive or negative attitude towards science change the usage rate of herbal supplements?

Methodology - Sampling

- Data for this study were gathered in two locations:
  - Students waiting for an appointment at the Health and Human Services Clinic on campus
  - Students were approached in public spaces on campus and asked if they were interested in participating
- After students were informed of their rights as participants and consented, they completed a six-page, anonymous survey about their knowledge and usage of herbal supplements. The sample so far is 19 participants.

Methodology - Survey

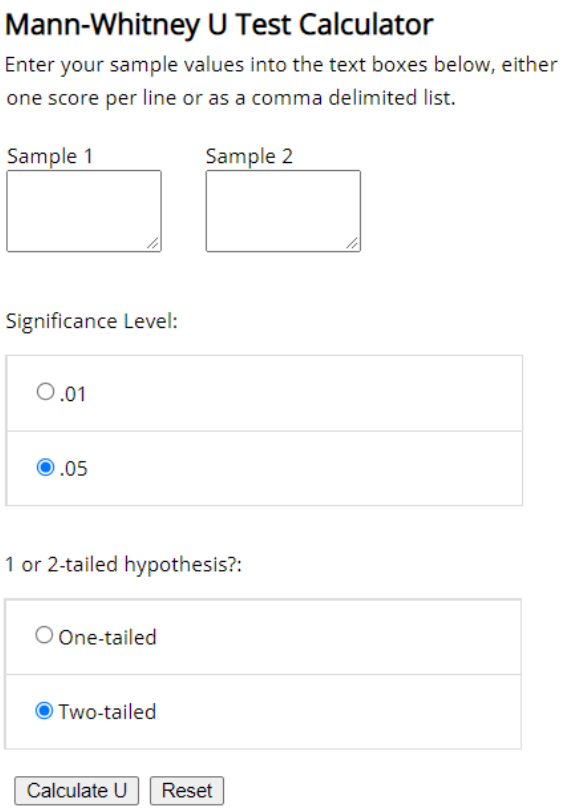
- The survey included definitions of prescription medication, over the counter medication, and herbal supplement to aid in the students' ability to answer accurately.
- It also included questions about demographics – gender, age, ethnicity, and health – to look for any trends in these data.
- Then, the survey pivoted to questions about what herbals supplements they used, what they used them for, where they found out about them, and how effective they were.
- Finally, the survey asked questions about the students' attitude towards science.

Methodology – Statistical Analysis

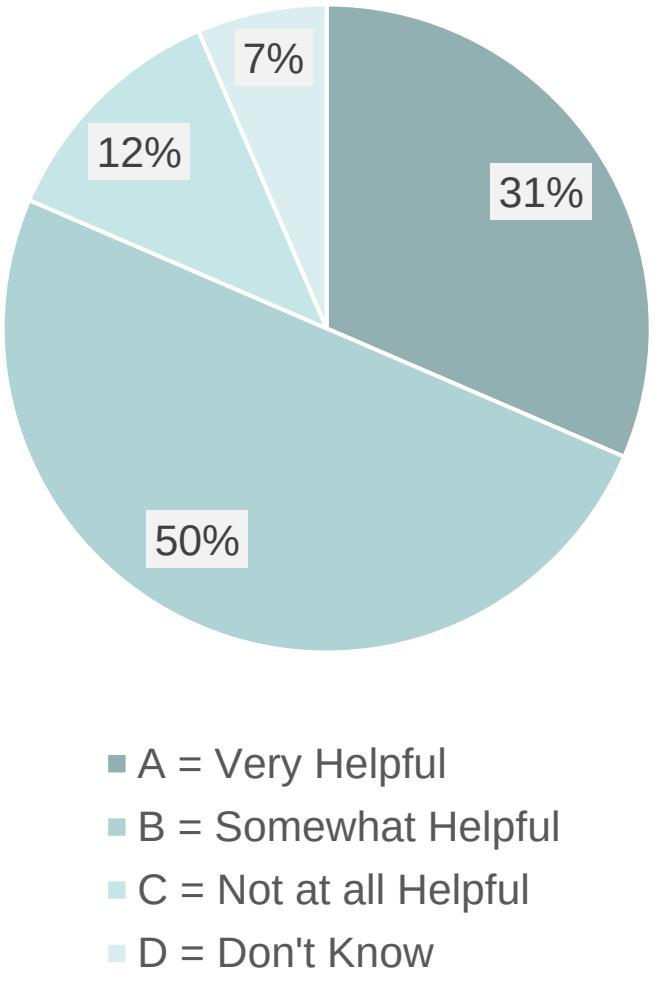
- The independent variables were classified into categories.
- These included sex (male, female); class rank (freshmen, older students); alcohol use (yes, no), physical activity (low, moderate); fat intake in the diet (low/moderate, high); veggie intake in diet (no/low; moderate); physician visits (0-1, 2+); use of long-term medication (none, 1+); attitude toward science (Likert survey).
- The dependent variables were the number of herbals (a) ever used, and (b) currently using.

Methodology – Statistical Analysis

- In addition, data were collected about the most common sources of information and illnesses treated with herbals.
- The descriptive statistical analysis included percentages and correlations.
- The inferential statistical analysis included the Mann Whitney U test, a nonparametric version of the t-test that is used with low sample sizes and that is independent of the distribution of the data.



Findings



- The top five herbals used by students were aloe vera, chamomile, cinnamon pills, lavender, and tea tree oil.
- 81% of respondents found the herbal supplements they took to be “very helpful” or “somewhat helpful” in resolving the issue they started taking them for.
- This could be likely due to the placebo effect.

Findings

- By far the most common reasons for taking herbal supplements were to “improve well-being” and “because of an acute illness or condition”.
- The most common illnesses or conditions that students treated with herbals included allergies, anxiety, headache, head colds, and insomnia.
- Every single respondent who takes or has taken cranberry took it to “because of an acute illness or condition” . This is likely due to the common myth of cranberry curing UTIs.

Findings

- The most common information sources about herbal supplements, as ranked by students, were internet, social media, family, friends, and doctors who prescribe herbal supplements.
- The ratio of people whose most common information source is the internet versus conventional doctor is 3.5 to 1.
- None of the Mann Whitney tests or correlations were significant, very likely due to the small sample size so far.

Conclusion and Future Work

- College students from rural areas found out about herbal supplements mainly online (internet, social media) or through personal connections (family or friends).
- They decided to use herbal supplements to treat actual medical conditions, and they overwhelmingly perceived that they were beneficial.
- There were not enough data to establish a relationship between anti-science attitudes and the dismissal of traditional medications.
- This study continues until April 2022 to expand the pool of respondents and uncover statistical trends in the data

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