

## Analyzing Mental Health Risk Factors

### Problem

Mental health is an issue that is often not given enough attention or well understood. Individuals struggling with their mental health may feel that they do not know whether or not their condition is severe enough to require treatment or counseling. They may find it helpful to have a more objective, customized algorithm that is able to predict their need for treatment based on their personal wellbeing history.

### Data

We are using a dataset obtained from Kaggle that measures attitudes towards mental health and the frequency of mental health disorders in the workplace. The data was sourced from a 2014 survey and includes features such as age, gender, number of employees within your company, mental wellness programs, and anonymity measures. There are 27 total variables and 1259 observations. See appendix for specific features and their descriptions.

### Significance

Symptoms of mental illness frequently go unnoticed until they are severe, and even then, many people are uncertain of the best treatment for their condition. Attitudes towards mental health and misperceptions of the prevalence of mental illness has resulted in a lack of discussion of the topic, worsening the situation for those struggling with their wellbeing. Having an accessible tool that individuals can use by inputting their personal health background can bring awareness to mental health treatment.

### Analytics Methods

We plan on using logistic regression and random forest classification to predict a given individual's likelihood of needing mental health treatment based on the features included in the dataset. More broadly, we would like to evaluate which features play the most significant role in a person's well-being and determine how this varies by demographic. By conducting this study, we hope to glean an understanding of the strongest predictors of mental illness and how individuals may better address their needs.

## Appendix

Our data includes the features:

- Timestamp
- Age
- Gender
- Country
- state: If you live in the United States, which state or territory do you live in?
- self\_employed: Are you self-employed?
- family\_history: Do you have a family history of mental illness
- treatment: Have you sought treatment for a mental health condition?
- work\_interfere: If you have a mental health condition, do you feel that it interferes with your work?
- no\_employees: How many employees does your company or organization have?
- remote\_work: Do you work remotely (outside of an office) at least 50% of the time?
- tech\_company: Is your employer primarily a tech company/organization?
- benefits: Does your employer provide mental health benefits?
- care\_options: Do you know the options for mental health care your employer provides?
- wellness\_program: Has your employer ever discussed mental health as part of an employee wellness program?
- seek\_help: Does your employer provide resources to learn more about mental health issues and how to seek help?
- anonymity: Is your anonymity protected if you choose to take advantage of mental health or substance abuse treatment resources?
- leave: How easy is it for you to take medical leave for a mental health condition?
- mentalhealthconsequence: Do you think that discussing a mental health issue with your employer would have negative consequences?
- physhealthconsequence: Do you think that discussing a physical health issue with your employer would have negative consequences?
- coworkers: Would you be willing to discuss a mental health issue with your coworkers?
- supervisor: Would you be willing to discuss a mental health issue with your direct supervisor(s)?
- mentalhealthinterview: Would you bring up a mental health issue with a potential employer in an interview?
- physhealthinterview: Would you bring up a physical health issue with a potential employer in an interview?
- mentalvsphysical: Do you feel that your employer takes mental health as seriously as physical health?

- obs\_consequence: Have you heard of or observed negative consequences for coworkers with mental health conditions in your workplace?
- comments: Any additional notes or comments