Hi, my name is Nancy Nguyen, and this is my simulated model. CLICK. I wanted to predict how the severity of trauma can impact the time to a mental health event and determine the likelihood of survival of said trauma. CLICK. The input is the severity of the trauma. The x-axis is the time of a significant mental health event (i.e. a diagnosis of a mental disorder). The y-axis is the probability of survival. I struggled to find a model that best fits my topic. Most of the journal articles I looked at focused primarily on PTSD, which is not what I was looking for. CLICK. Because of that, I asked ChatGPT for suggestions and discovered the Survival Analysis Model. I then asked ChatGPT to help me write an R script. It was a trial-and-error process because I would constantly run into errors. Thankfully, ChatGPT helped me fix said errors. CLICK.

First, I had to download the survival, survminer, gganimate, gifski, ggplot2, and dplyr packages. The survival package performs the survival analysis. The survminer package provides utilities for creating survival plots. Gganimate animates said plots, and gifski renders the animations as gifs. Ggplot2 creates survival curves, and dplyr manipulates data. CLICK.

Here, this creates a random dataset that contains the identifier for each individual, trauma severity which is randomly generated, a randomly generated time until a mental health event occurs, and whether or not said event has occurred AKA its status. CLICK.

The next part of the script inspects said dataset and creates an object of the time-to-event data (which is in months by default) and the status of the event. CLICK.

The cox model looks at the effect of the severity of trauma on the risk of the event. CLICK.

This divides the individuals into three trauma groups from low to medium to high. CLICK.

KM stands for Kaplan-Meier which estimates the probability of survival overtime. This piece of the script turns the KM data into a visual plot for the viewer. CLICK.

Using gganimate, I created an animated plot of the KM data and then rendered it as a gif. CLICK. This is my result. CLICK.

Before the video ends, let’s have a pop quiz question. Which trauma severity has the highest probability of survival at around 30 months? High, low, or medium? Write what you think is the correct answer in the comments below! CLICK.

Thank you for watching this video!

Link to YouTube vid: <https://youtu.be/9jscB3h9Hv8>