Our lab is part of a practice-research network that spans over 600 university counseling centers (UCCs) across the United States: the Center for Collegiate Mental Health (CCMH). Those centers who maintain a local IRB and who seek client approval to use data for research purposes submit de-identified data to a centralized repository once per year. This dataset is cleaned and curated by our team at Penn State. Research teams can submit applications to gain access to subsections of this massive dataset, and we also provide the centers who comprise CCMH with the latest college mental health trends and some tools that they can use to advocate for their center’s needs.

One question with high potential for clinical utility is how to best predict outcomes for clients who seek treatment in college counseling centers. For instance, it would be helpful to know when to refer students to community providers, or simply how much symptom change can be expected over an average treatment course that college counselors are able to provide. There are many factors that can influence clinical outcomes for a client, including characteristics of the client, therapist, and center. For this project, I will focus on the associations of client characteristics at treatment baseline with clinically relevant outcome variables. The end product will be a Shiny app that allows the user to select their client variable(s) of interest, and then displays visualizations of the selected relationship(s) with the outcome variables.

On the predictor side, there are a number of questionnaires that the client completes prior to their first therapy appointment (demographic information, relevant mental health history, and current psychological symptoms), and one that the clinician fills out about the client’s presenting concerns immediately following the first appointment. The variables that will be available to use as predictors for in-app visualizations are listed in the table below. One or two of these variables may be selected at a time. In either case, a graphical breakdown of the proportion of clients in each subgroup created by the variable(s) will be presented before the user selects their outcome variables (it may be helpful to know ahead of time whether the groups are largely skewed in size, for example).

|  |  |  |  |
| --- | --- | --- | --- |
| **Demographics** | **Mental Health History** | **Psychological Symptoms** | **Presenting Concerns** |
| Age | Prior services | *Subscale severity* | Top concern |
| Gender | Prior hospitalization | Depression | Any specific concern |
| Sexuality | Prior self-injury | Generalized anxiety | Number of concerns |
| Race/Ethnicity | Prior suicidality | Social anxiety |  |
|  | Prior suicide attempt | Academic distress |  |
|  | Medication use | Eating concerns |  |
|  |  | Hostility |  |
|  |  | Alcohol use |  |
| Continuous  Categorical  User’s choice/Either |  | *Single item severity* |  |
|  | Suicidal thoughts |  |
|  | Homicidal thoughts |  |

Outcome variables of clinical significance will include: post-treatment psychological symptom subscale scores, pre-to-post change in psychological symptoms over the treatment course, number of sessions used, percentage of scheduled appointments attended, and rates of dropout. Visualizations will be generated to depict the relationship of the predictor variable(s) with each outcome variable on successive display tabs. Specifically, if at least one chosen predictor is a continuous variable, a scatter plot will be generated with the first continuous predictor on the X axis and the second predictor (either categorical or continuous) coloring the points. If neither chosen predictor is continuous, the relationships with outcome variables will be presented as bar charts.

Overall, this could be either a standalone tool for clinicians and counseling centers to get a sense of expected client outcomes based on incoming characteristics, or it will serve as a jumping-off point for additional means of visualizing trends in our nationwide UCC data from CCMH.