**Predicting treatment outcomes for somatic symptom disorder patients, using machine learning algorithms**

HSK is a national organization which offers psychological treatment for outpatients. Approximately 4,500 somatic- symptom disorder (SSD) patients visit HSK annually to receive psychological treatments. Each patient receives multiple weekly treatment sessions in two levels of care: "Basic GGZ (BGGZ)" or "Specialistische GGZ (SGGZ)". In either level of care, at the end of a series of treatment sessions, a clinician must decide if the treatment should be i) finished since the patient is recovered, or ii) stopped since the treatment is ineffective (and could be switched to other treatment) or iii) extended since the patient is showing gradual improvement. Additionally, a patient may drop out before reaching to the end of the treatment sessions. The aim of this project is to predict treatment drop-out and efficacy, in order to support the clinicians making these decisions using a data-driven approach. Previous studies in patients with depression suggest that offering treatment prediction outcomes to clinicians may enforce treatment effect and minimize the number of patients drop out from a treatment. However, it remains unknown whether this is also true for SSD patients, who are known to be more heterogeneous in their symptoms and other characteristics. This project aims at applying various machine learning algorithms to the longitudinal data collected at the HSK to identify the best algorithm to predict treatment outcomes and explore possibilities of applying machine learning approach for SSD patients in clinical settings with the Data Scientist team. It will serve as a proof-of-principle for a Veni- application of PI Dr. Monden.