

Testing Multiple Outcomes Across Mental Health Treatment Options:

An Example Using Antidepressants

Tara Trujillo¹ BA, Rui Duan² PhD, MS, Jiayi Tong³ MS, Yong Chen³ PhD, Joel Stoddard¹ MD,

MAS

Mental health providers must balance the risks and benefits of treatment decisions by assessing prior evidence. It is now possible to compare the strength of evidence for multiple treatments and outcomes formally through PALM analysis, which stands for PAtient-centered treatment ranking via Large-scale Multivariate network meta-analysis. By way of example, we consider a comparative analysis of both efficacy and acceptability of antidepressants following Cipriani et al. (2018). In the original analyses performed by Cipriani et al., the two outcomes were modeled separately; therefore, joint inference on a weighted function of both the treatment efficacy and the acceptability is not available. We applied PALM to the dataset of the antidepressant treatment network, selecting 6 commonly used SSRIs and SNRIs from among the 21 drugs to illustrate a common clinical concern of weighing their efficacy against their acceptability. We show how this type of analysis allows for the ability to look at relative efficacy and acceptability based on a joint consideration of multiple outcomes, and rank treatments through a personalized utility function relevant to a particular patient. The PALM analysis also allows for the novel visualization of treatment comparisons based on more than two outcomes where each treatment is represented by an origami star plot. The utility of this type of analysis is that it will allow, for the first time, for personalized clinical decision-making when it comes to choosing mental health treatment.