

More Data. More Insights. Less Time.

Data Visualization As a Tool to Quickly Understand Patient-Generated Data

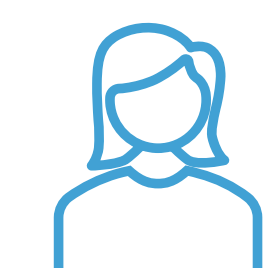
RHYS WARHAM

Introduction

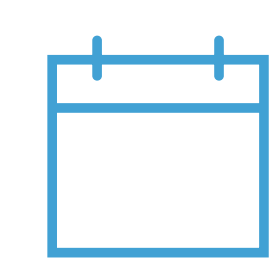
- New m-health technologies allow frequent data collection, yielding unprecedented amounts of information.
- Data Visualization is a vital tool for understanding large amounts of m-health data.

Methods

- A hypothetical case study is presented



100 Subjects (50 Active, 50 Placebo)



3 symptoms ('Frustration', 'Sadness', 'Isolation') graded for 1 week pre-treatment and 16 weeks post-treatment initiation



Symptoms graded on a 4-point scale ('Never' = 0, 'Rarely' = 1, 'Often' = 2, 'Always' = 3)

Figure 1

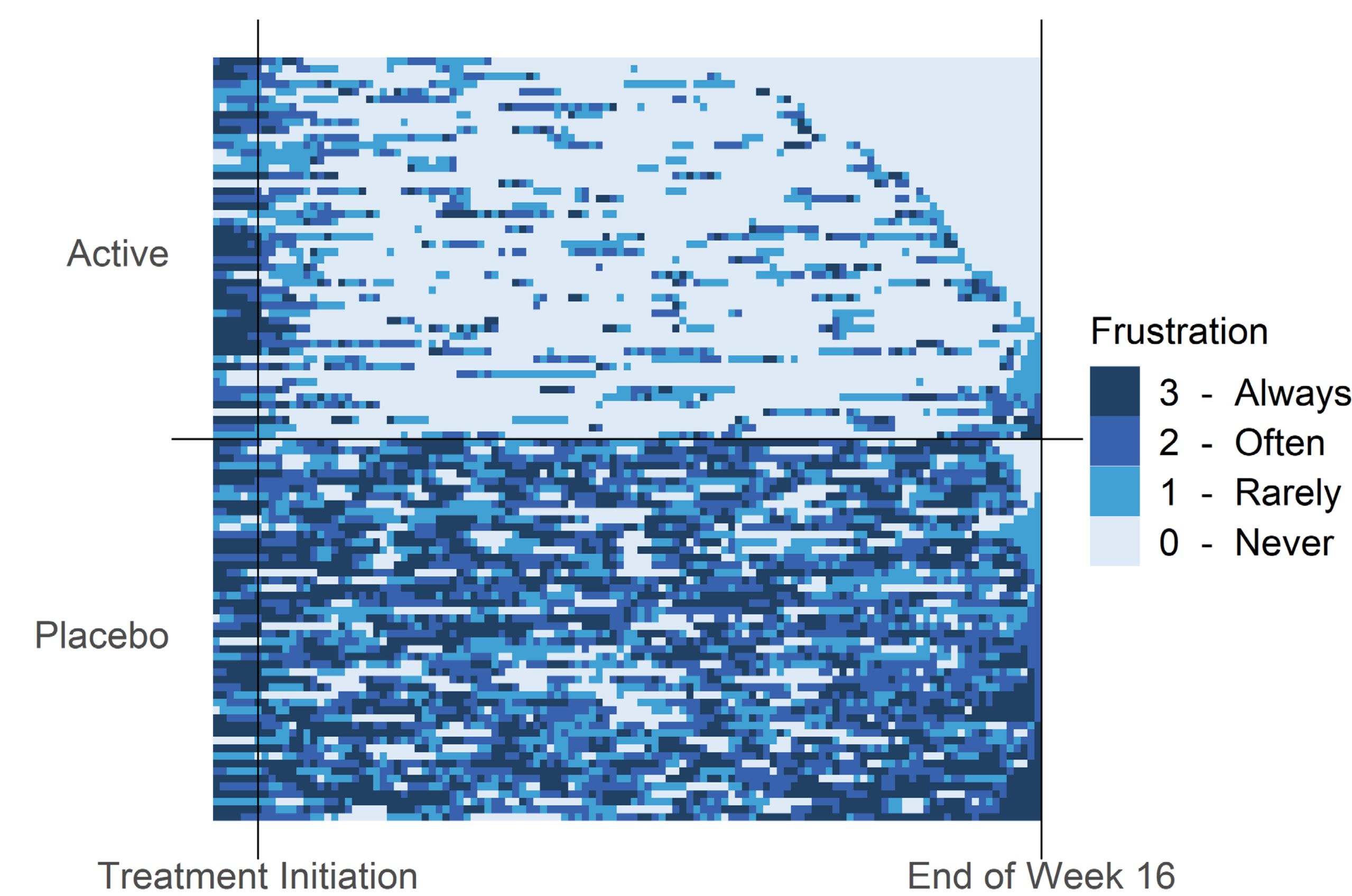


Figure 2

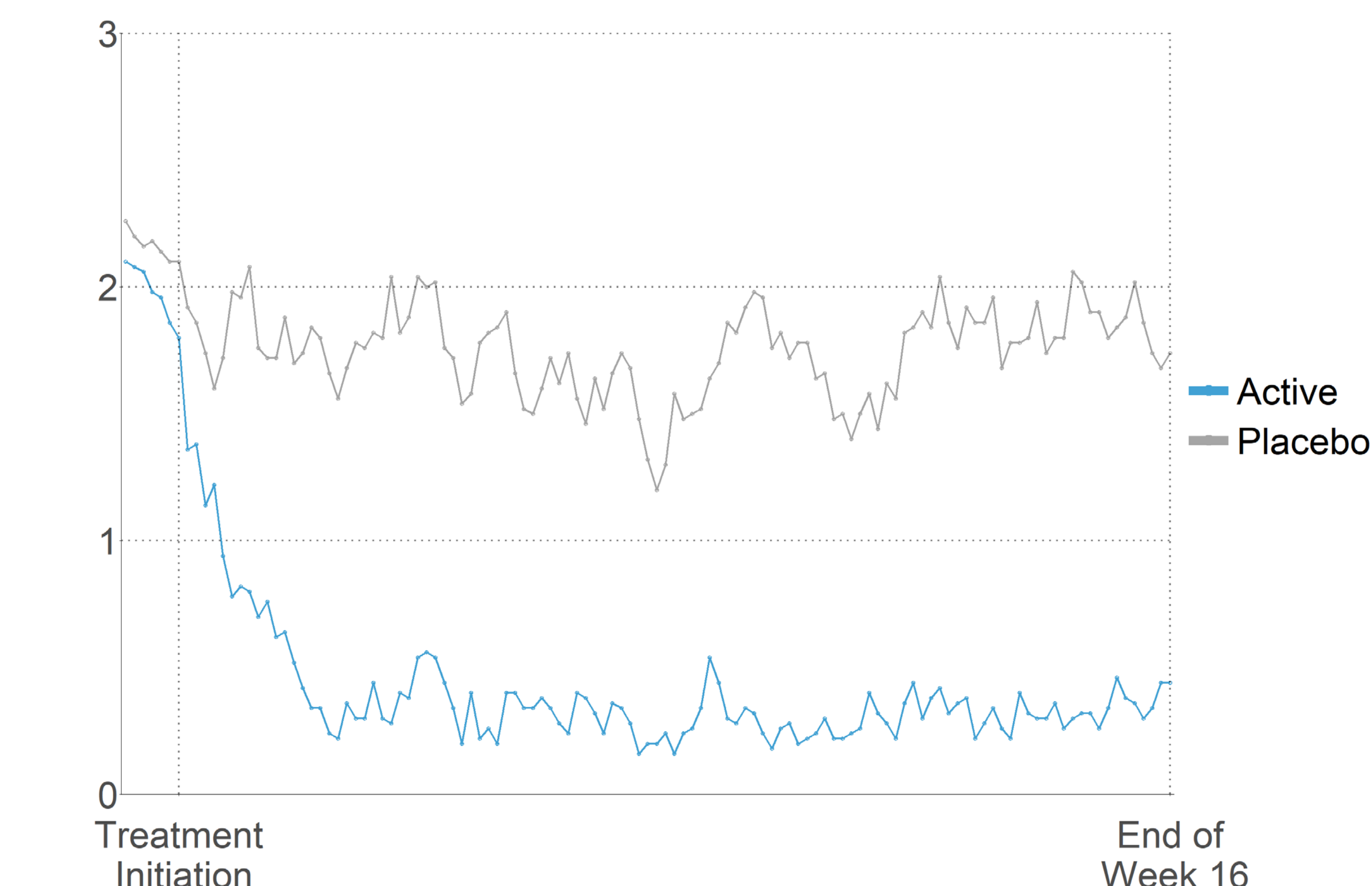


Figure 3a (Active Treatment)

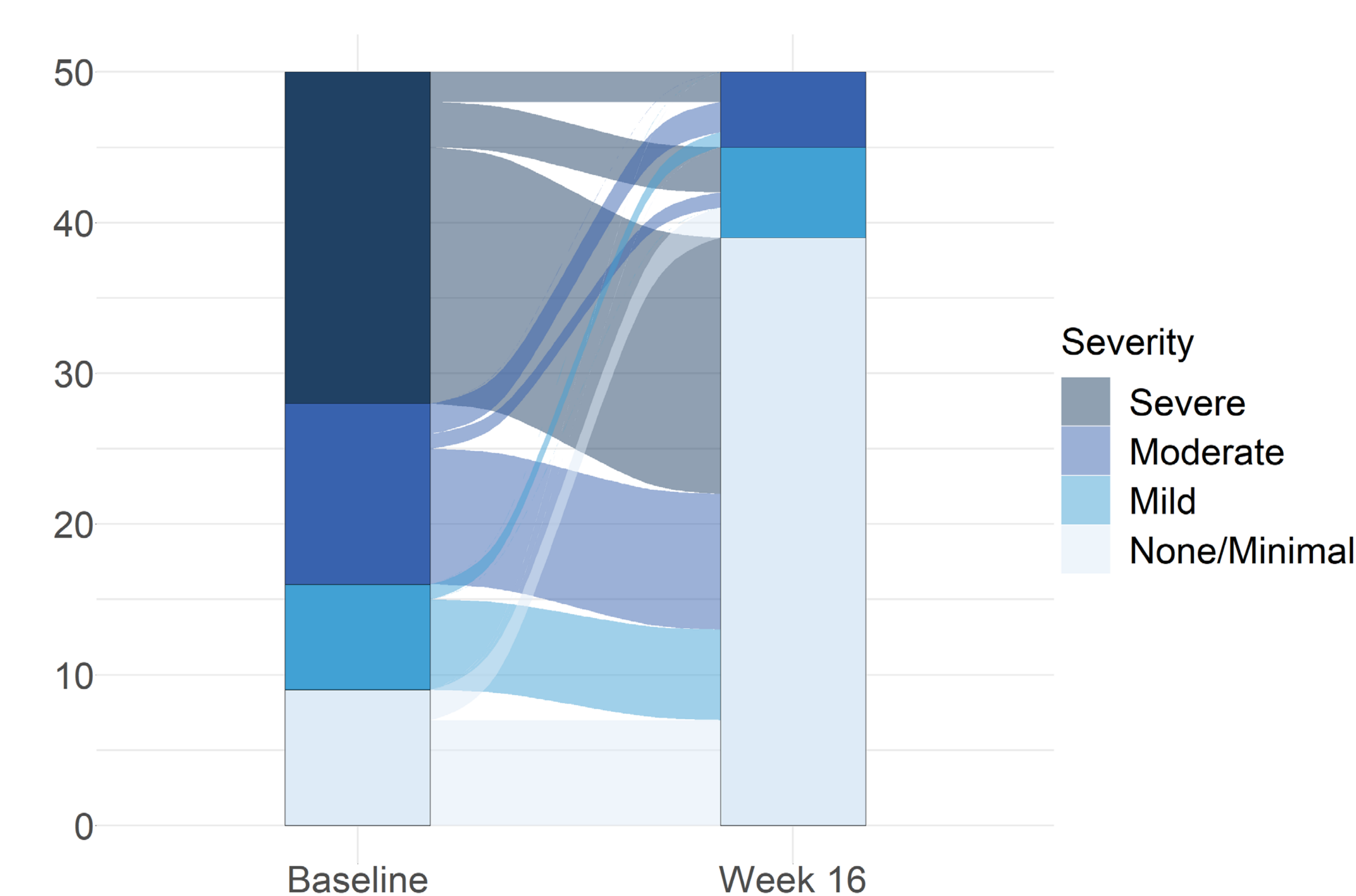


Figure 3b (Placebo)

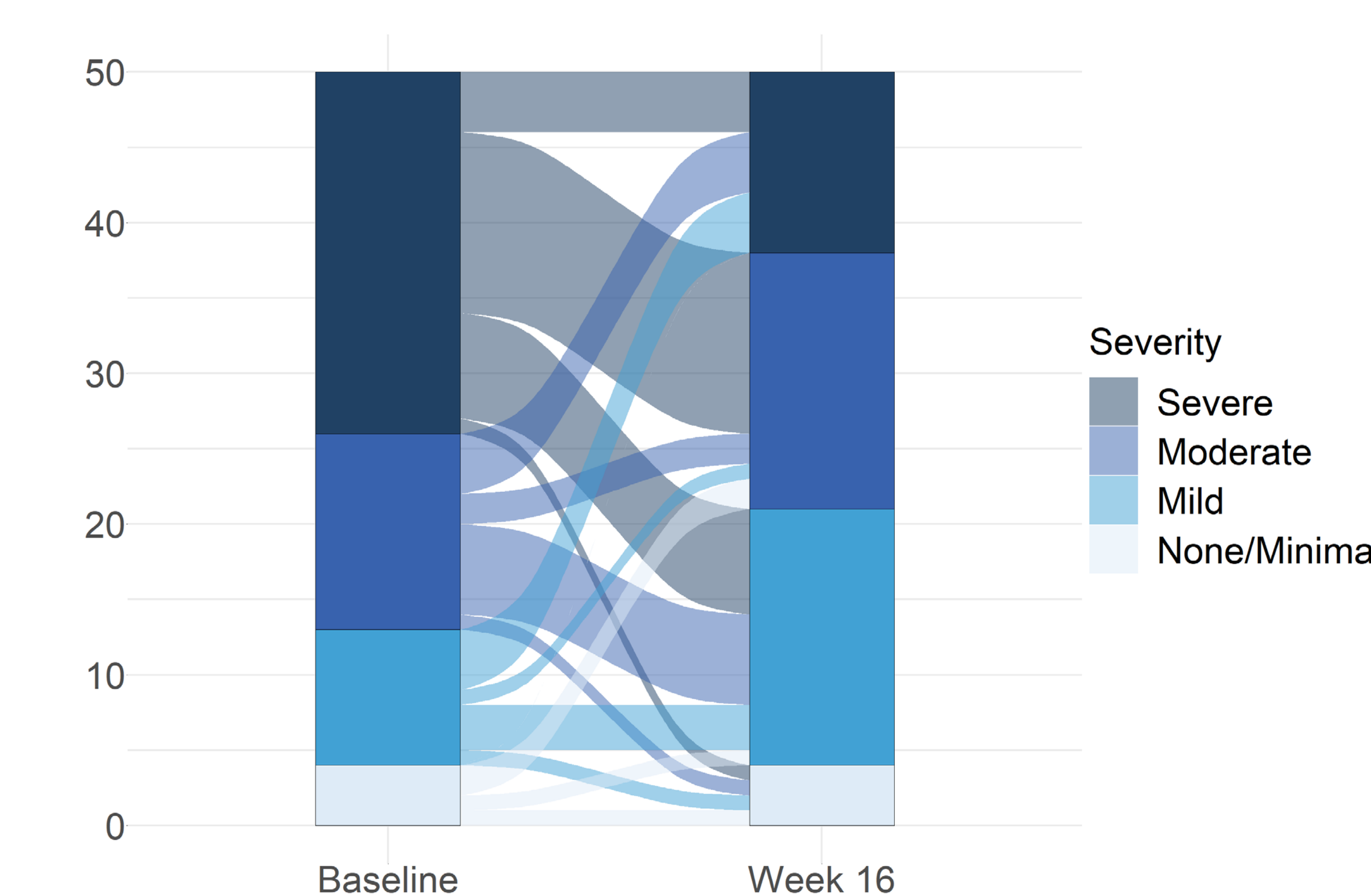


Figure 1: Lasagna Plot of Daily Frustration Scores

Here, each row represents one patient, each column represents one day

Figure 2: Line Plot of Average Daily Frustration Scores by Treatment

Figure 3: Alluvial Plot of Shift from Baseline to Week 16 in Weekly Frustration Severity
Weekly scores are calculated as the average of the 7 daily scores from that week; severity categories are derived using Receiver Operating Characteristic [ROC] analyses (QR code)

Methods

- A range of visualizations are displayed in an automated report.
- A subset of the produced visualizations are displayed for the 'Frustration' item in this poster (Figures 1 – 3). A complete overview of the report and its contents is provided in a video demonstration (QR code).
- Template code allows the visualizations to be instantaneously reproduced for a second diary with different items, response options and length of assessment period (QR code).

Results / Conclusions

- The visualizations allow for tracking of individual patient progression and assessment of the relative performance of treatment arms.
- Efficient template code, producing smart data visualization, substantially increases the speed at which we get to understanding large quantities of m-health data.

Scan the QR Code with your phone to view a video demo of the report

