Meausrement Based Care 2023

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Sierra Tucson Outcomes Report Q1 2023

2023-05-12

Sierra Tucson assesses the outcomes of its patients via the Measurement Based Care (MBC) program, which records their outcomes while they are being treated at our residential facility, and the Connect 365 program, which records outcomes for the first year after patients have left residential care.

Patient Details

Data from the MBC program analyzed include all cases where individuals completed a pre-treatment evaluation and a mid-treatment evaluation. All patients are scheduled for a pre-treatment evaluation within three days of entering residential treatment, and scheduled for a mid-treatment evaluation after approximately two weeks. Below is some descriptive information about the MBC data:

- There are 218 people included in this sample.
- The average age was 42 years old, with a range from 19 to 76 years old.
- There were 57 % men, 42 % women, and 2 % who identified as neither male nor female.

Data from the C365 program analyzed included data from all people who took at least one measurement during Q1 2023. Below is some information about the C365 data:

- There are 143 people included in this sample.
- The average age was 43 years old, with a range from 19 to 75 years old.
- There were 51 % men, 48 % women, and 1 % who identified as neither male nor female.

Progress at Sierra Tucson

Data is collected on patient outcomes at Pre-Treatment and Mid-Treatment (approximately 2 weeks into treatment) for the MBC program. The Pre-Treatment Assessment is used to provide a Comprehensive Psychological Profile of all patients when they entered treatment, so that treatment planning takes into account multiple indicators of psychological health and well-being. The Mid-Treatment Assessment is used to track treatment progress, and assess whether goals are being met during the course of treatment. These measurements also allow us to track the change in outcomes during treatment at Sierra Tucson.

A few notes on the figures below:

- Different scales have different numbers of questions, and therefore different maximum scores. To make them easier to compare, all scores have been transformed into a Percentage of Maximum Possible (POMP) score, so that 0 is no level of symptoms and 1 is the highest possible score on the scale.
- The points on the graphs represents the average score on the scale, and the error bars surrounding them represent the standard error of the average. These error bars represent a level of uncertainty. If we were to collect data on many other samples like this one, we would expect that 95% of the time the average score would be between the top and the bottom of these bars.

Changes in Mental Health Symptoms

Average changes in mental health symptoms from pre-treatment to mid-treatment are displayed below. Note that all changes illustrated here represent statistically significant decreases.

Substance	N	Pre Avg	Mid Avg	Difference	t	df	p	sig
PROMIS Sleep	217	28.0	22.1	-5.9	-9.89	216	< .001	***
PSS Stress	217	24.5	15.9	-8.5	-16.79	216	< .001	***
PCL5 Overall PTSD	217	45.5	27.4	-18.0	-17.79	215	< .001	***
CESD-R Overall Depression	217	44.8	22.4	-22.5	-20.01	216	< .001	***
GAD Anxiety	215	8.3	6.0	-2.3	-11.67	211	< .001	***
PROMIS Pain	217	13.2	11.0	-2.2	-5.99	216	< .001	***

The figure below illustrates average changes in mental health symptoms by primary program.

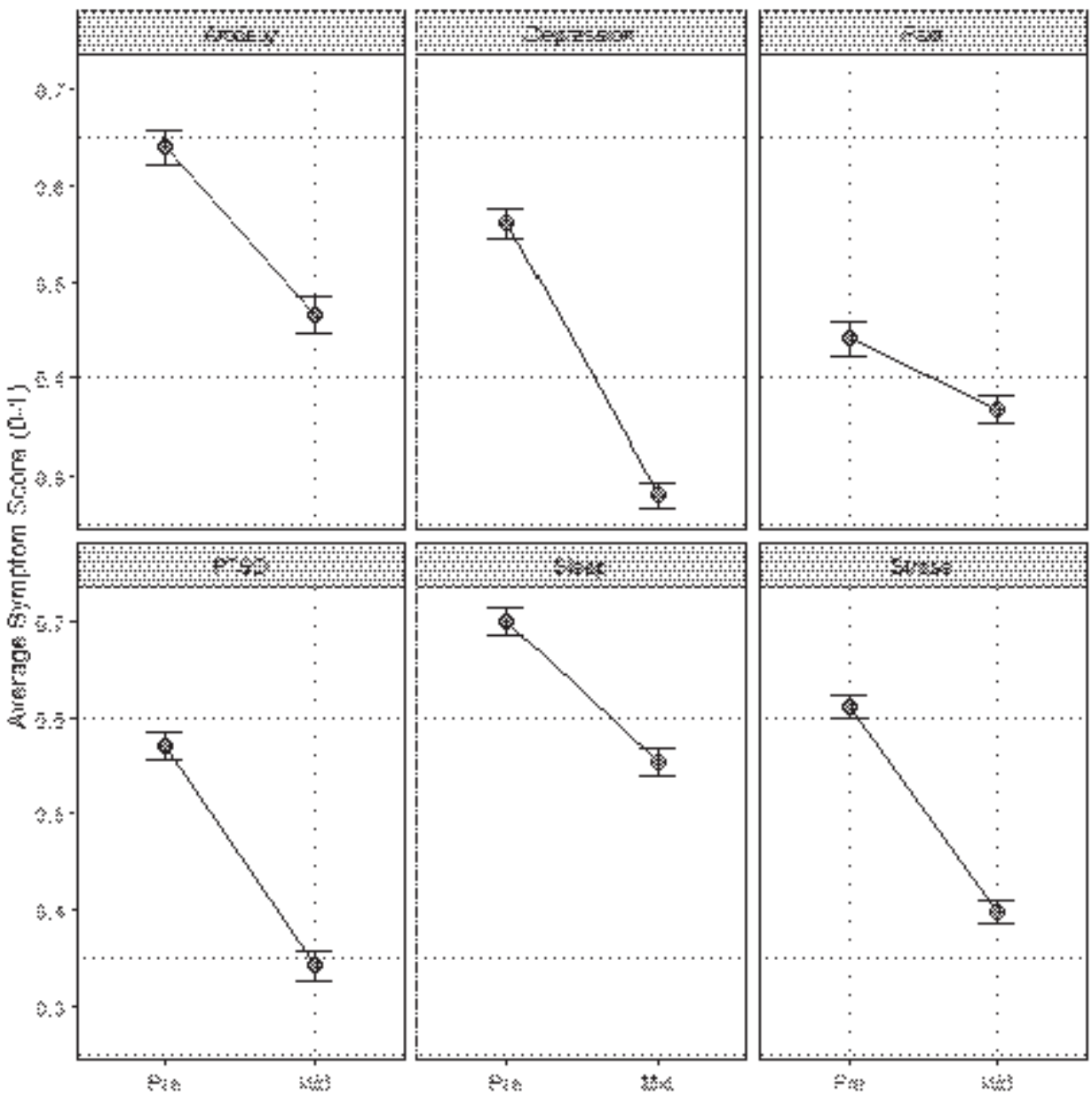


Figure 1: Changes in Symptoms Overall

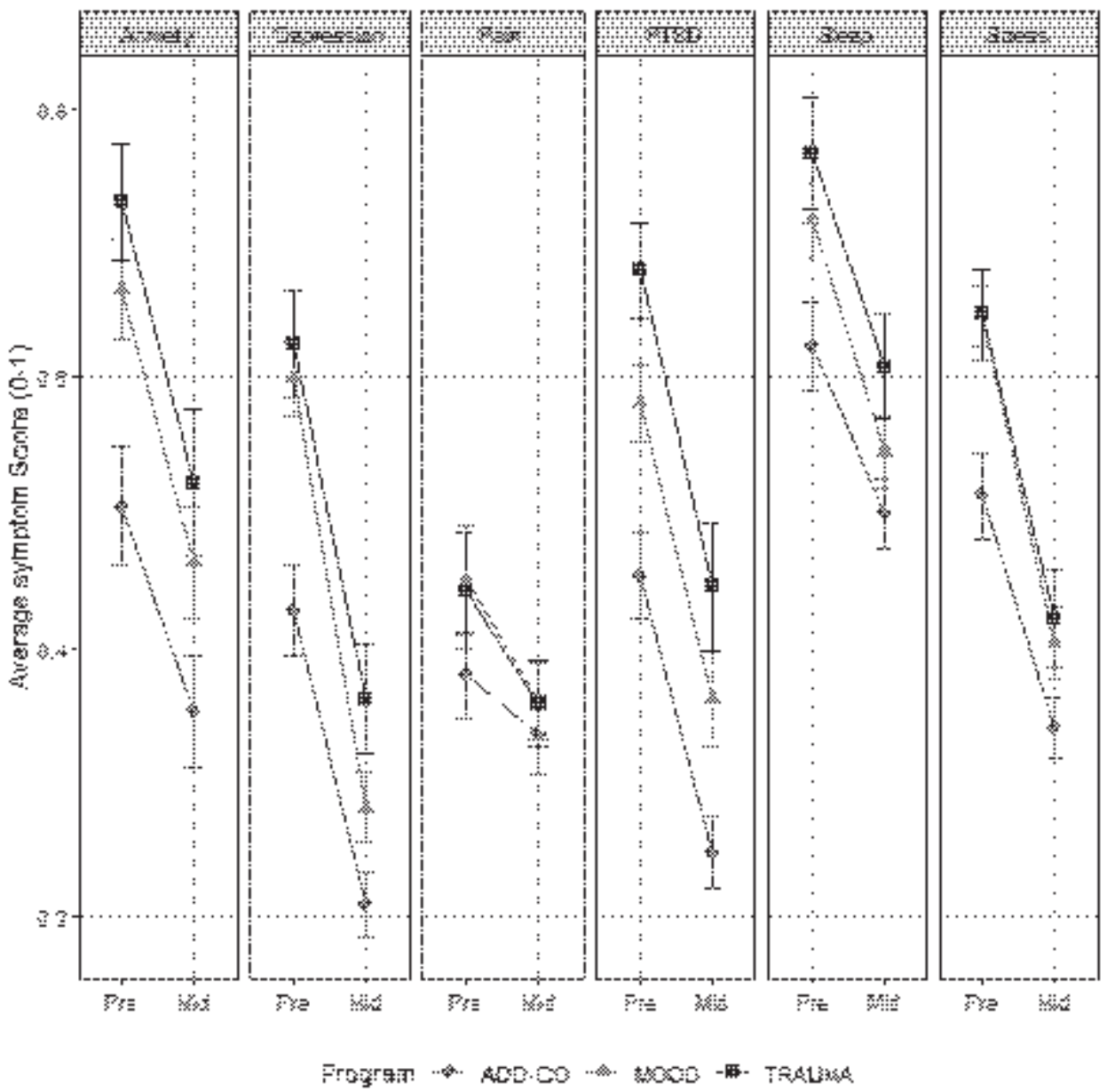


Figure 2: Changes in Symptoms by Program

Follow-up analyses were conducted to compare scores from patients in the three primary programs at Sierra Tucson. These tested for differences in symptoms at baseline, and differences in the rate of change between individuals in these programs. Results of statistical testing indicate that there was no reliable difference between the programs in how quickly patients improved.

However, results do indicate that there were **differences in baseline symptom levels** between groups. Statistically significant differences at baseline include:

- **Anxiety scores** were lower for patients in the Addiction Recovery Program, compared to the other two programs.
- **Depression scores** were lower for patients in the Addiction Recovery Program, compared to the other two programs.
- **PTSD scores** were higher for patients in the Trauma Recovery Program than for patients in the Mood Disorders and Addiction Recovery programs. PTSD scores were, in turn, higher for patients in the Mood Disorders Program than for patients in the Addiction Recovery Program.
- **Sleep disturbance scores** were higher for patients in the Trauma Recovery Program than for patients in the Addiction Recovery Program. Patients in the Mood Recovery Program had scores in between the other two, and were not significantly different from either.
- **Stress scores** were lower for patients in the Addiction Recovery Program, compared to the other two programs.

Changes in Cravings for Substances of Abuse

Changes in cravings for substances of abuse were analyzed so that only individuals who started treatment with some level of craving for a substance were analyzed. In other words, analysis of change in cravings for alcohol only included people who started treatment with cravings for alcohol above zero. Cutting out individuals who had zero craving for a substance at baseline led to some cases with one or fewer people in a category. For example, in Q1 2023 no one in the Trauma Recovery Program reported cravings for methamphetamines at baseline. In those cases, no data point was plotted.

The table below provides information on the statistical tests for cravings. The column labeled "N" indicates how many individuals treated at Sierra Tucson in Q1 2023 had cravings for different substances. Note that there were statistically significant decreases in substance cravings for all substances.

Substance	N	Pre Avg	Mid Avg	Difference	t	df	p	sig
Painkillers	26	3.9	1.6	-2.3	-4.48	25	< .001	***
Stimulants	21	3.9	1.6	-2.4	-4.01	20	< .001	***
Sedatives	25	3.9	2.0	-1.9	-3.65	24	0.001	**
Marijuana	63	4.5	2.3	-2.1	-6.99	62	< .001	***
Cocaine	12	4.3	1.9	-2.4	-4.37	11	0.001	**
Club Drugs	7	2.7	0.2	-2.5	-3.34	6	0.016	*
Hallucinogens	9	2.7	1.4	-1.3	-2.50	8	0.037	*
Alcohol	94	4.4	1.8	-2.6	-7.87	93	< .001	***

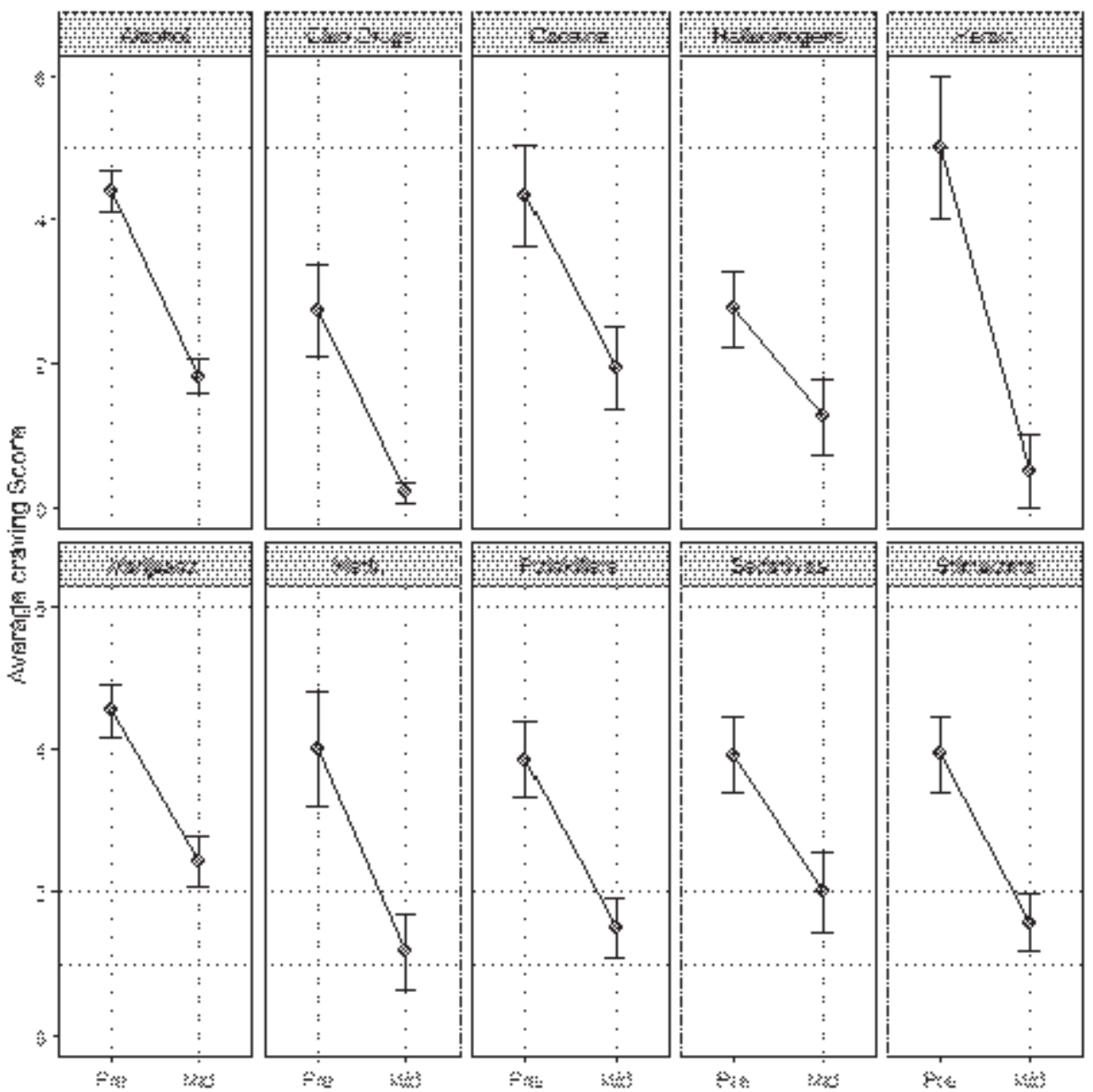


Figure 3: Changes in Craving Overall

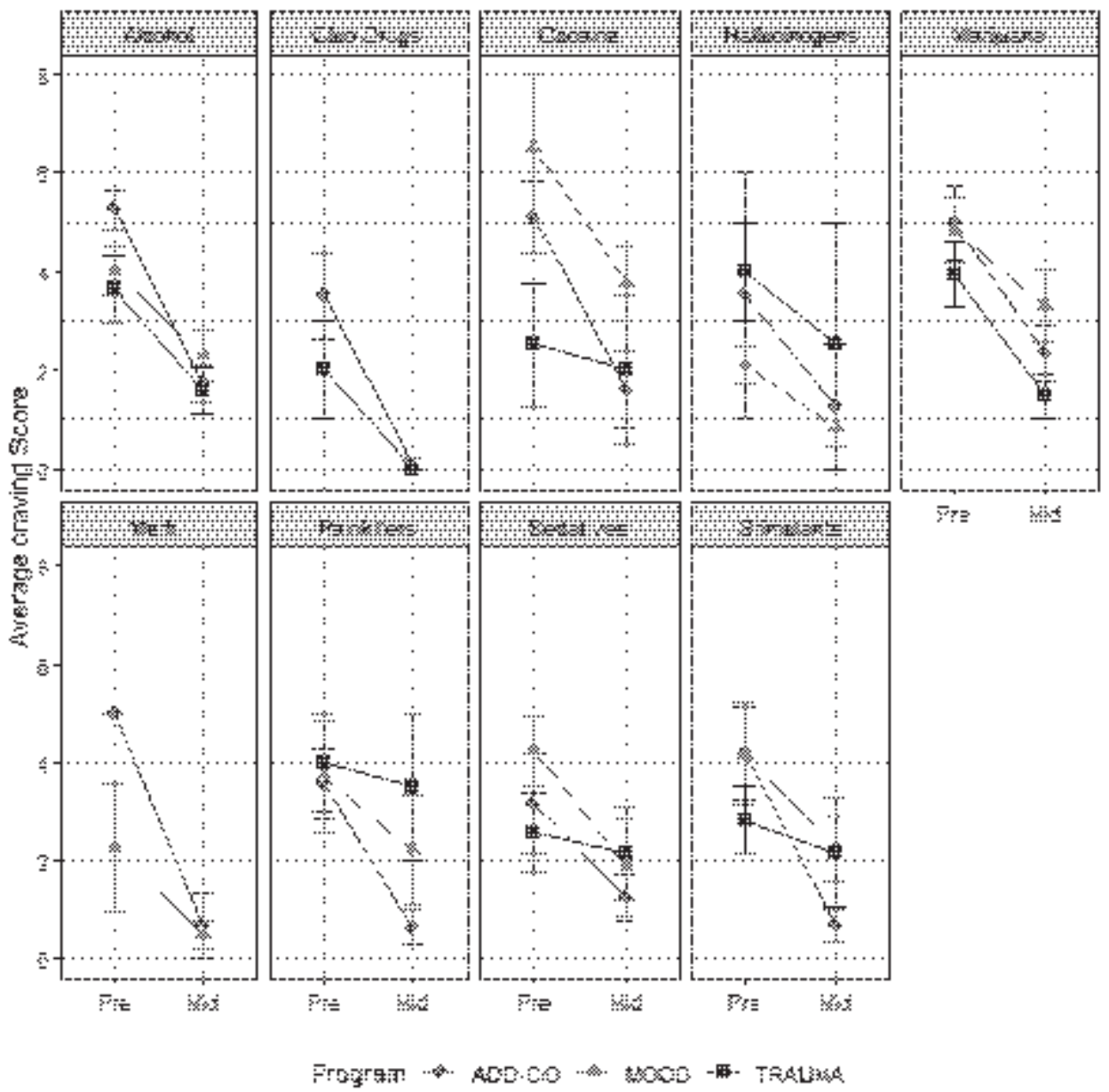


Figure 4: Changes in Craving by Program

Changes in Indicators of Positive Functioning

Average changes in indicators of positive functioning from pre-treatment to mid-treatment are displayed below.

Note that there were statistically significant improvements in all these measures over the first two weeks of treatment except for Overall Quality of Life and Environmental Quality of Life.

Environmental Quality of Life involves how an individual feels about where they lives. Since residents at Sierra Tucson are necessarily living at the residential facility, they often do not show much of a change in this dimension of Quality of Life. As a result, they also tend to have smaller changes in Overall Quality of Life.

Substance	N	Pre Avg	Mid Avg	Difference	t	df	p	sig
QOL Overall	217	3.4	3.6	0.2	1.78	216	0.076	n.s.
QOL Physical	217	3.0	3.8	0.9	19.82	216	< .001	***
QOL Psychological	217	2.4	3.4	0.9	18.89	216	< .001	***
QOL Social	217	2.8	3.6	0.8	14.45	216	< .001	***
QOL Environmental	217	3.7	3.8	0.1	1.27	216	0.207	n.s.
BRS Resilience	217	16.7	18.8	2.1	6.71	216	< .001	***
Attachment Close	217	3.3	3.4	0.1	2.45	216	0.015	*
Attachment Depend	217	2.8	3.1	0.2	5.15	216	< .001	***
Attachment Anxiety	217	3.0	2.7	-0.3	-5.56	216	< .001	***
Problem Focused Coping	217	59.9	76.0	16.0	10.83	216	< .001	***
Emotion Focused Coping	217	36.2	50.1	13.9	11.17	216	< .001	***
Social Support Coping	217	25.6	31.8	6.2	8.50	216	< .001	***

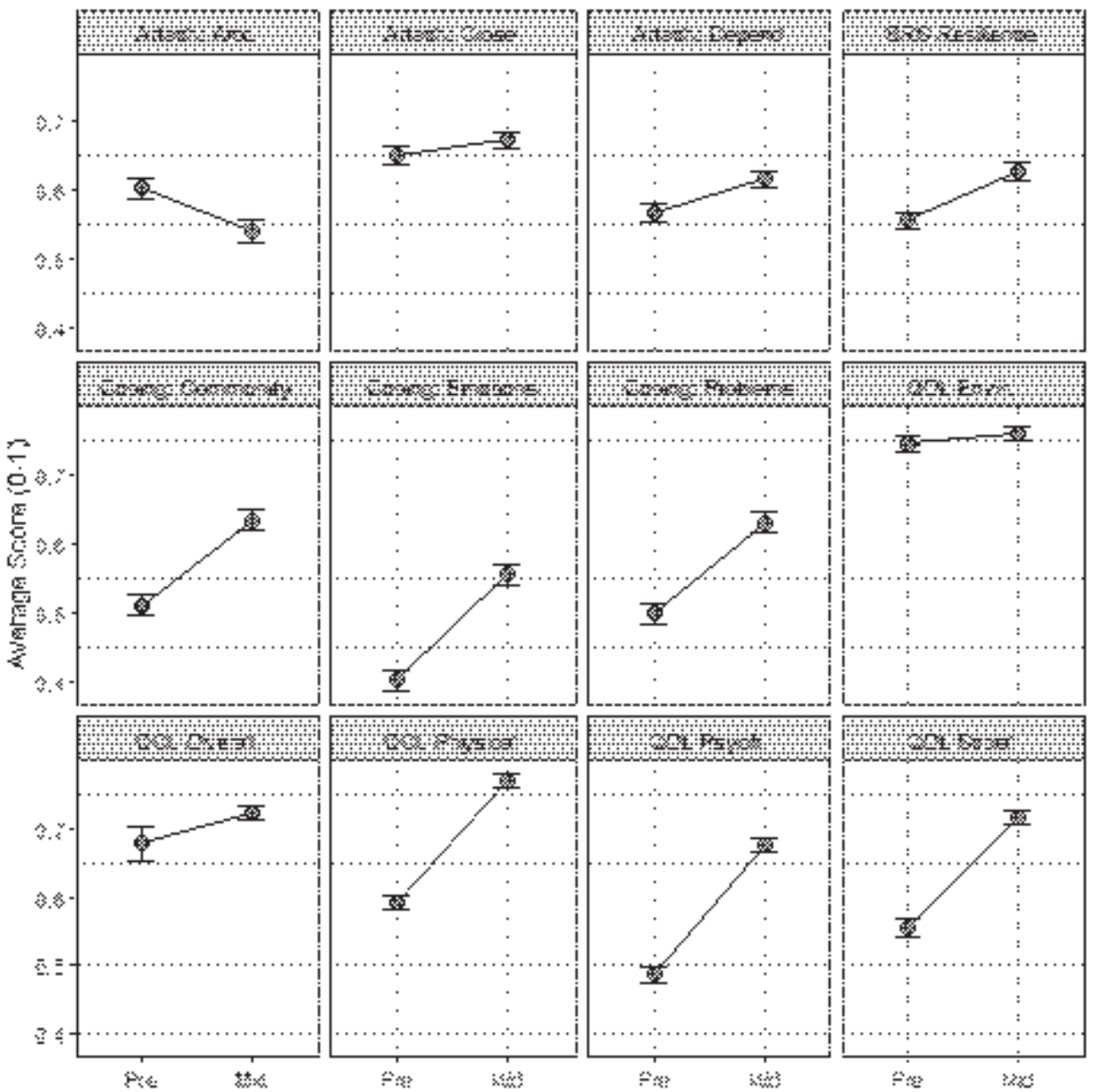


Figure 5: Changes in Positive Functioning Overall

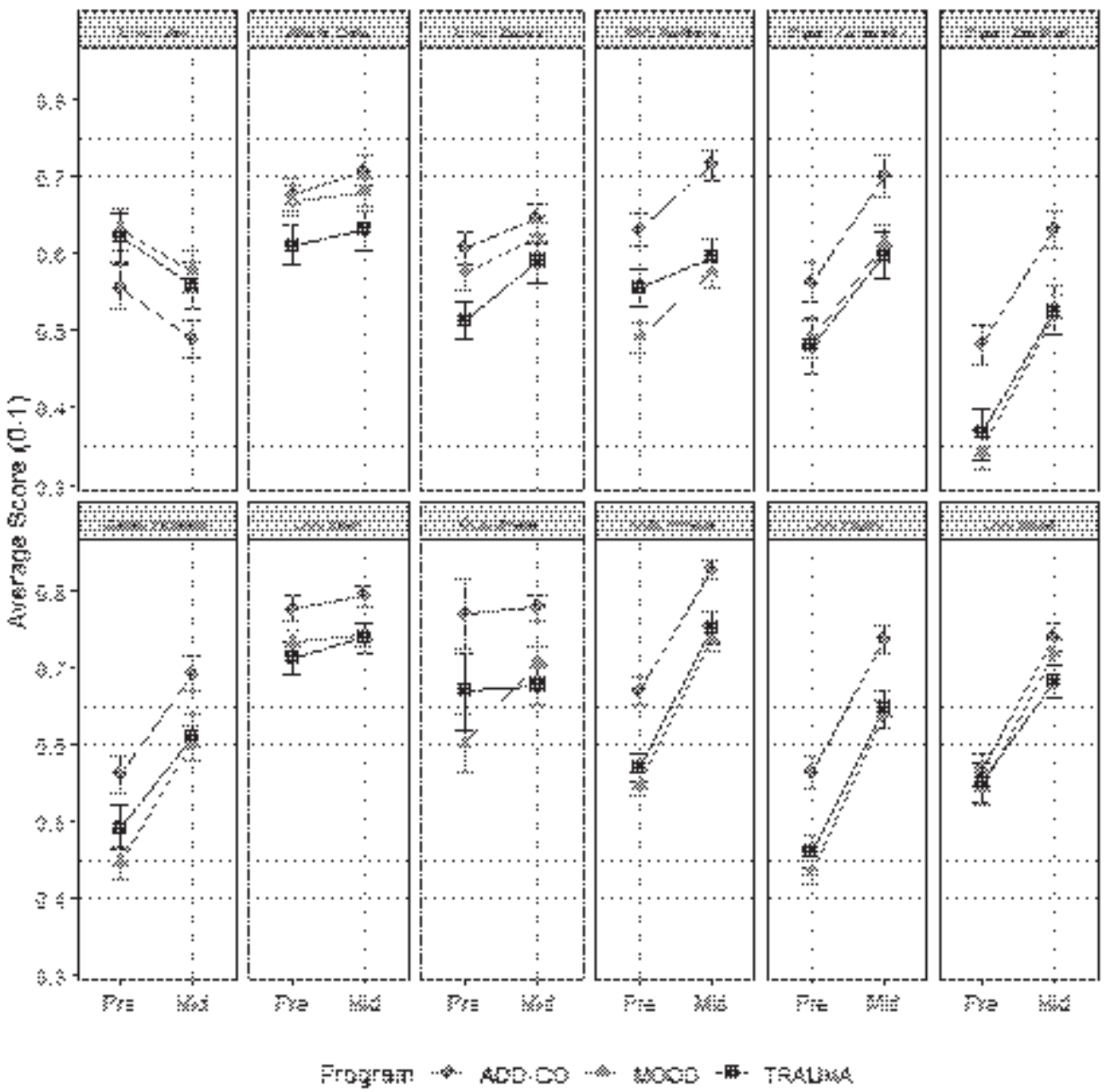


Figure 6: changes in positive functioning by program

Follow-up analyses were conducted to compare scores from patients in the three primary programs at Sierra Tucson. These tested for differences in positive functioning at baseline, and differences in the rate of change between individuals in these programs. Results of statistical testing indicate that there was no reliable difference between the programs in how quickly patient functioning improved.

However, results do indicate that there were **differences in baseline functioning levels** between groups. Statistically significant differences at baseline include:

- **Feeling comfortable depending on others in close relationships**, which is a facet of attachment style, was lower for patients in the Trauma Program than for patients in the other two programs.
- **Feeling like you are able to bounce back after difficult times**, measured by the Brief Resilience Scale, was higher for patients in the Addiction Program than for patients in the Mood Program. Patients in the Trauma Program were in between the two, and not significantly different from either.
- **Feeling confident in your ability to cope with difficult emotions**, which is a part of our coping skills assessment, was higher for patients in the Addiction Program than for patients in the other two programs.
- **Feeling confident in your ability to cope with daily life problems**, which is a part of our coping skills assessment, was higher for patients in the Addiction Program than for patients in the Mood Disorders Program. There was not a statistically significant difference in scores between the Addiciton Recovery Program and the Trauma Recovery Program.
- **Overall Quality of Life** was higher for patients in the Addiction Recovery Program than for patients in the other two programs.
- **Physical Quality of Life** was higher for patients in the Addiction Recovery Program than for patients in the other two programs.
- **Psychological Quality of Life** was higher for patients in the Addiction Recovery Program than for patients in the other two programs.

Progress in the First Year After Care at Sierra Tucson

Progress after discharge from Sierra Tucson is tracked through the Connect 365 program. This program is free to all residents, and involves regular contact from Recovery Coaches who help patients meet their treatment goals after leaving. This helps Sierra Tucson alumni maintain the gains they make while in residential treatment. As part of this program, the Recovery Coaches ask alumni to report on a series of eight treatment outcomes at Months 1, 3, 6, and 12 post-discharge. For this report, data from all individuals who responded to any survey (1, 3, 6, or 12 month follow-up) in Q1 2023 were included.

The data was analyzed by considering the number of days since an individual left treatment. This is in contrast to an approach where all people who completed the 3-month follow-up were treated the same, regardless of whether they completed the survey 90 days, 100 days, or 110 days after discharging. Analyzing the exact number of days since an individual has left treatment gives a slighlty more detailed picture of change over time.

After individuals leave Sierra Tucson, our goal is for them to maintain the gains that they have made in treatment. In the graphs below, that means that a better outcome is a straight line (the gains are maintained), and a worse outcome is a line tilted down (the gains are being slowly lost over time). Similarly, in the statistical analyses, a result that is not significant is better. This indicates that there is not a statistically significant decline in gains over time. Note, however, that there are a few cases where this is flipped (e.g., a line tilted up for days using substances of abuse is a worse outcome, because it indicates increasing number of days using substances).

Changes in Subjective Indicators of Mental Health

Three self-report questions are used to assess subjective mental health. Each is rated on a scale from 1 to 5. These are:

- Your overall quality of life
- Your ability to manage stress
- Your satisfaction with your primary relationships

Results of statistical analyses revealed no significant trends over time in any of the subjective indicators measured. There were also no significant differences in the trend over time across the three core programs.

Note, however, that there was a slight downward trend in quality of life and satisfaction with relationships over time. Based on the analyses, these results indicate:

- It would take over 1000 days to register a one-point drop in Quality of Life.
- It would take approximately 2000 days to register a one-point drop in Satisfaction with Relationships.

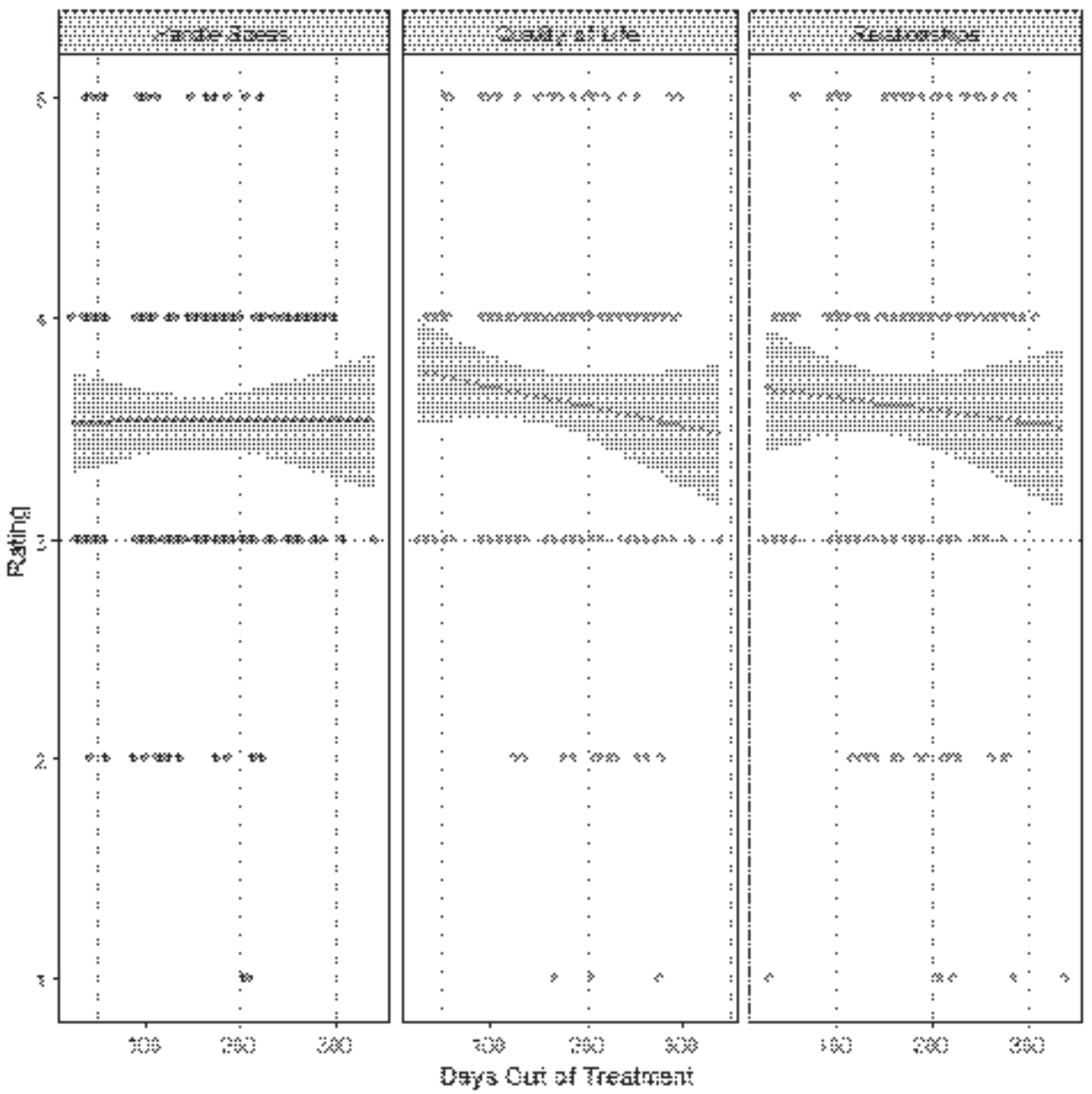


Figure 7: Changes in Subjective Measures

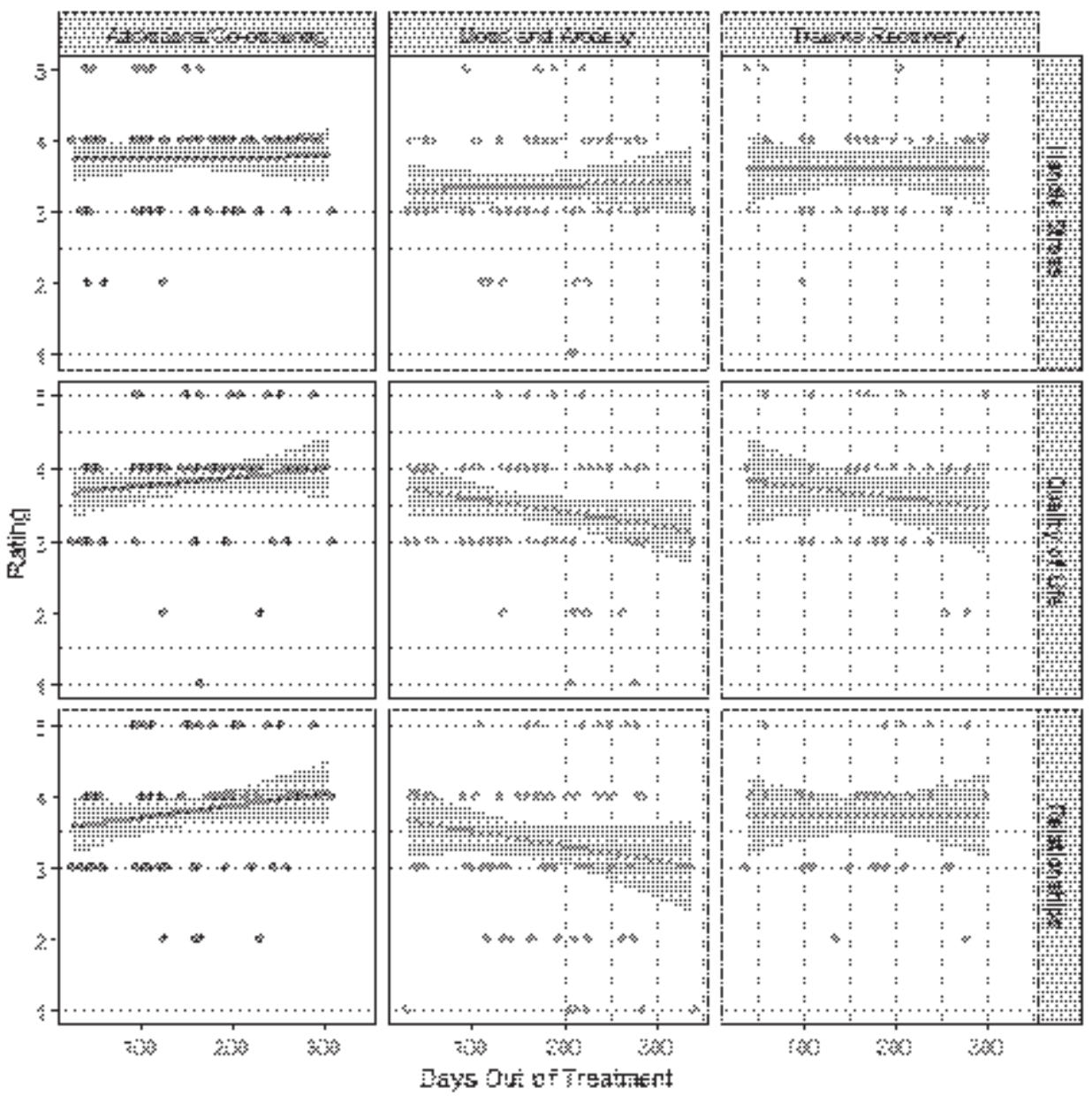


Figure 8: Changes in Subjective Measures by Program

Changes in Objective Indicators of Mental Health

Five self-report questions are used to assess objective indicators of mental health. These questions are objective in the sense that they involve reporting on concrete events, such as the number of days you went to the hospital or ER in a month. Since they are self-reported, they do rely on the patients' ability to accurately recall and report their experiences. These questions are:

- Have you been compliant with your continuing care plans?

In the last 30 days, how many days have you:

- Attended self-help groups for support?
- Received medical treatment at a hospital/ER?
- Gotten paid for working?
- Used alcohol or other non-medical drugs?

Results of statistical analyses revealed only one significant trend in the objective indicators measured. Alumni attended fewer support groups per month the longer they had been out of treatment. Based on the statistical model, people would be predicted to start by attending 9 sessions a month. Every 100 days, that number would be expected to go down by one, so that by the end of the first year out, an individual would be only attending 5 to 6 sessions a month.

There was also one statistically significant difference between groups. Patients in the Trauma Recovery Program had slightly more days spent using medical services over time, as compared to the other groups. Patients in the Addiction Recovery Program and Mood Disorders Program both had a slight decline in the number of days needing medical care over time. For patients in the Trauma Recovery Program, there was a slight increase. This corresponded to one extra day a month needing medical care after over 1000 days being out of treatment.

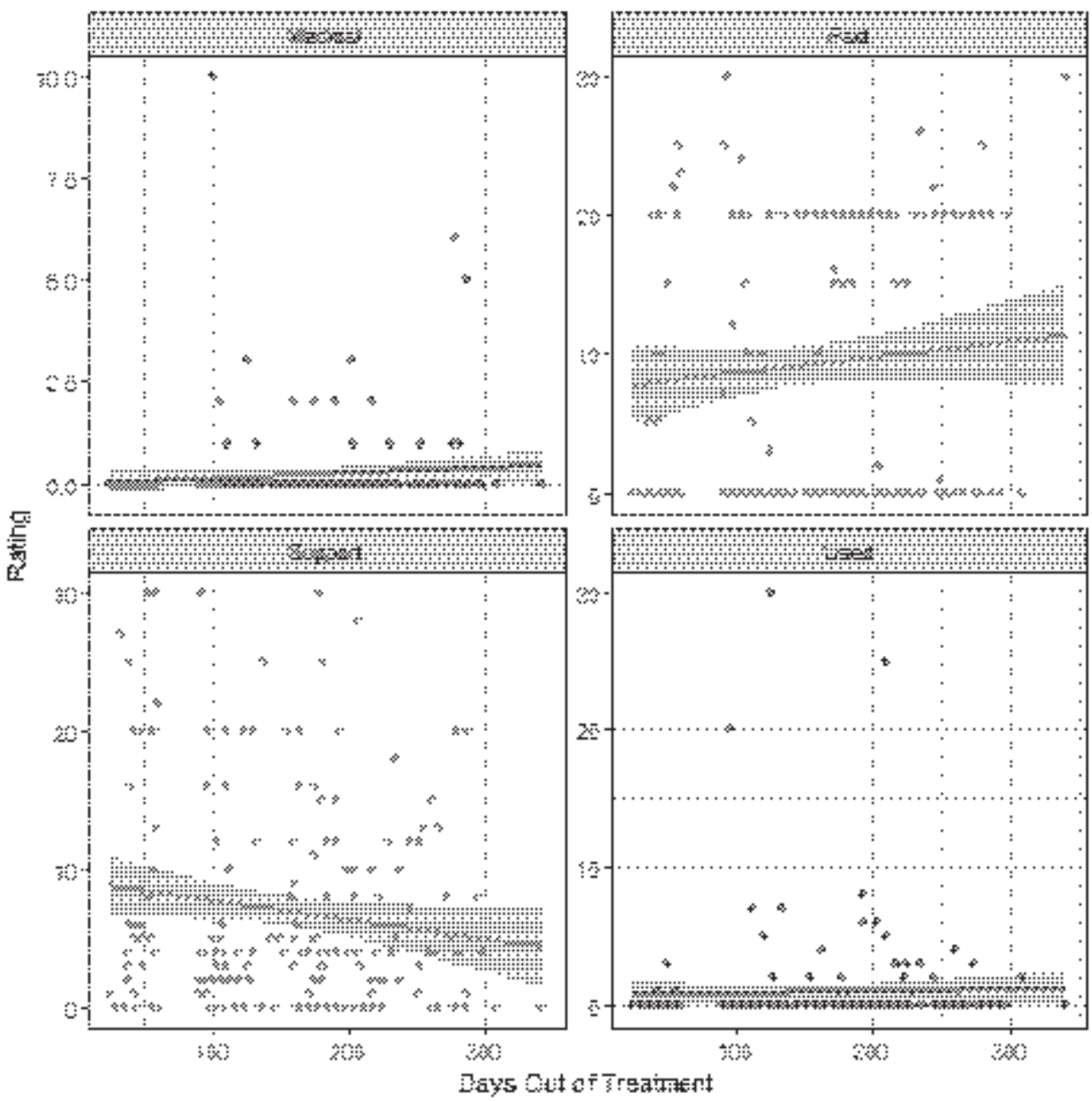


Figure 9: Changes in Objective Measures

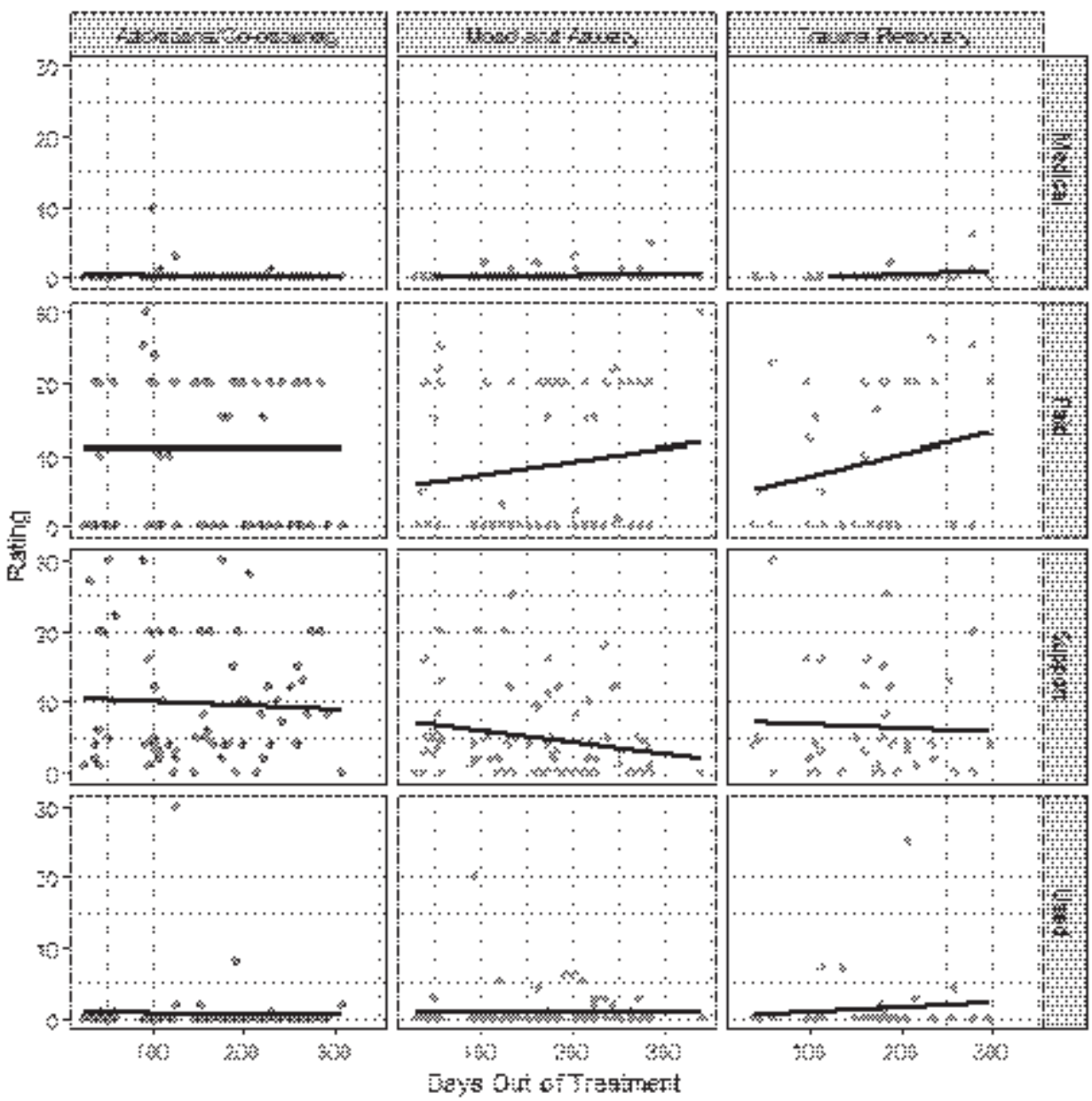


Figure 10: changes in objective measures by program

Methodological Notes

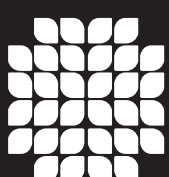
Immediate Treatment Response

As part of the Comprehensive Psychological Profile (CPP) given at pre-treatment and mid-treatment, the following measures were used:

1. PROMIS Pain Interference (PIQ 6b)
2. Center for Disease Epidemiological Depression Scale-Revised (CESD-R)
3. Anxiety (GAD-Q-IV)
4. The PROMIS Sleep Questionnaire
5. Perceived Stress Scale (PSS)
6. Post-Traumatic Stress Disorder Checklist (PCL-5)
7. World Health Organization, Brief Quality of Life survey (WHOQOL-BREF)
8. Confidence in Coping Skills Scales
9. Revised Adult Attachment Style questionnaire (RAAS)
10. Brief Resilience Scale (BRS)

Post-Discharge Treatment Response

At both pre-treatment and post-discharge, several questions from the Substance Abuse and Mental Health Services Administration (SAMHSA) National Outcome Measures (NOM) scale were assessed. These questions are the source of data for the pre-treatment to post-discharge comparisons.



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