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Family Factors Predicting Medication Adherence in Adolescents with Bipolar Disorder

This project analyzed which family factors predict objective medication adherence in adolescents with bipolar disorder. Participants and their parents were recruited from the Child and Adolescent Bipolar Spectrum Services (CABS) clinic at Western Psychiatric Institute at the University of Pittsburgh for a 6-month randomized control trial investigating the effects of a Brief Motivational Interview (BMI) on medication adherence. The participants were age 12 years 0 months to 22 years 11 months, had a DSM-4 diagnosis of bipolar I, II or not otherwise specified (NOS) through semi-structured interview, were prescribed at least one psychotropic medication for bipolar, and no evidence of intellectual disability or autism spectrum disorder.

Both participants and their parent completed the Family Adaptability and Cohesion Scale-II (FACES-II; Olsen et al. 1985) and the Conflict Behavior Questionnaire (CBQ; Robin and Foster 1995). Another variable deemed parental involvement was derived from whether the parents completed the CBQ of FACES-II at any time point (0, 3, or 6 months) or not. Other factors assessed were living situation (with both biological parents or other), body mass index, bipolar symptom severity, medication type, dosage frequency, and dosage timing.

Objective medication adherence was tracked through MedTracker pillbox (Hayes et al. 2006). The MedTracker resembles typical weekly pillboxes available at pharmacies with separate, labeled compartments for each day of the week. The MedTracker records the time the user opens and closes the door, as well as which door was opened, through a plunger depressed by the lid upon opening that contacts a switch under the box upon closure. The switch sends a signal to the microcontroller that timestamps the data. Bluetooth wireless connectivity sends data from the MedTracker to an electronic data file.

Models were fit using a generalized linear mixed model approach All models controlled for days since visit, number of doses per day, weekday vs. weekend, time of dose, CGI (dichotomized at "Not at all ill" vs. otherwise), and BMI. Models fit using parent involvement (i.e., completion of CBQ or FACES) further controlled for age 18+ vs. age<18. To maximize the amount of usable MedTracker data, and because CBQ and FACES scores barely change within subject over follow-up, predictor variables were computed using within-subject means.

While there are slight trends such that lower CBQC scores for both parents and children were associated with greater adherence, none of these effects were statistically significant. Higher scores in all three parent-reported FACES scales were significantly associated with greater adherence, while scores of child-reported FACES scales were not. Living with both biological parents trended toward greater adherence, though not significantly so. Parent involvement (as indicated by parent(s)' completion of the CBQ or FACES) was significantly associated with greater adherence.

This work will be published as a poster and there are plans to publish as a paper. A similar project looking at the effect of family intervention on medication adherence in adolescents with bipolar disorder will continue as my scholarly project, but this specific project is completed.