

BACKGROUND

- Bipolar disorders are psychiatric conditions marked by recurrent mood episodes, involving fluctuations in mood, energy levels, and functional ability, lasting days to weeks¹.
- Bipolar disorders affected nearly 46 million people globally²⁻³, with an estimated 2.8% of U.S. adults affected⁴ in 2024.
- Bipolar disorders treatment¹ aims to stabilize mood and prevent recurrence through medications like first-generation typical antipsychotics (FGAntipsy) and second-generation atypical antipsychotics (SGAntipsy) , psychotherapy, and, in severe cases, electroconvulsive therapy (ECT).
- Family support and individualized approaches are key to managing this chronic condition.
- Treatment adherence is critical, requiring appropriate metrics.
- Proportion of Days Covered (PDC) is a quantitative medication adherence measure, calculated as the proportion of days a patient has access to prescribed medication within a specified period⁵⁻⁶.

OBJECTIVE

To estimate PDC within 180 days after the first medication fill using two assumptions.

METHODS

- Second-generation atypical antipsychotics (see Table 1, assumptions 1):
 - Patients are assumed to commence medication on the same day they fill the prescription.
 - In instances of a new medication fill, patients are presumed to discard any remaining medication from their previous fill and initiate the new course immediately.
 - At the conclusion of the 180-day follow-up period, any remaining pills in the possession of patients will not be considered in the calculation of the Proportion of Days Covered (PDC).
- First-generation atypical antipsychotics (see Table 2, assumptions 2):
 - Patients are assumed to commence medication on the same day they fill the prescription.
 - In instances of a new medication fill, patients are presumed to discard any remaining medication from their previous fill and initiate the new course immediately.
 - At the conclusion of the 180-day follow-up period, any remaining pills in the possession of patients will not be considered in the calculation of the Proportion of Days Covered (PDC)..
- Statistical analyses were performed using R 3.6.0 software.
 - Developed two algorithms to estimates of adherence as PDCs were calculated for these two scenarios.
 - $PDC = (days\ covered) / (total\ days\ in\ period) \times 100$.

RESULTS

- The dataset included bipolar disorders patients taking:
 - Second-generation atypical antipsychotics (SGAntipsy, 150,402) follow assumptions 1.
 - First-generation typical antipsychotics (FGTAntipsy, 100,362) follow assumptions 2.
- The PDC was 0.82 [95% CI:0.65–0.99] for SGAntipsy
- The PDC was 0.78 [95% CI:0.62–0.94] for FGTAntipsy.

LIMITATIONS

- Generalizability of the findings.
- Findings were extracted from a synthetic stimulated data; further research should be conducted using real-world data (RWD).
- Study algorithms would require strong validations.

CONCLUSIONS

- These algorithms that we develop are accurate in evaluating pharmacy services and patients' adherence in real-world databases.
- Accurately identifying adherence issues enhances patient experience, improves outcomes, and reduces medication wastage.
- It is more likely that patients are more adherent to second-generation antipsychotic therapies.

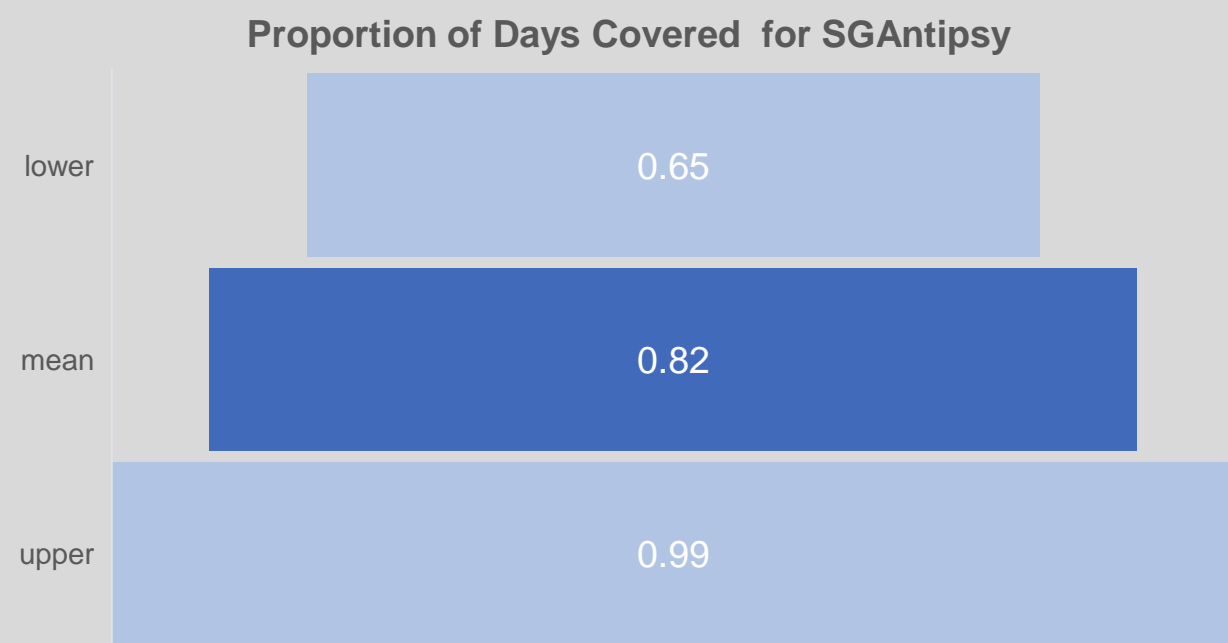


Figure 1: Displays results of PDC for Second-generation antipsychotic therapies.

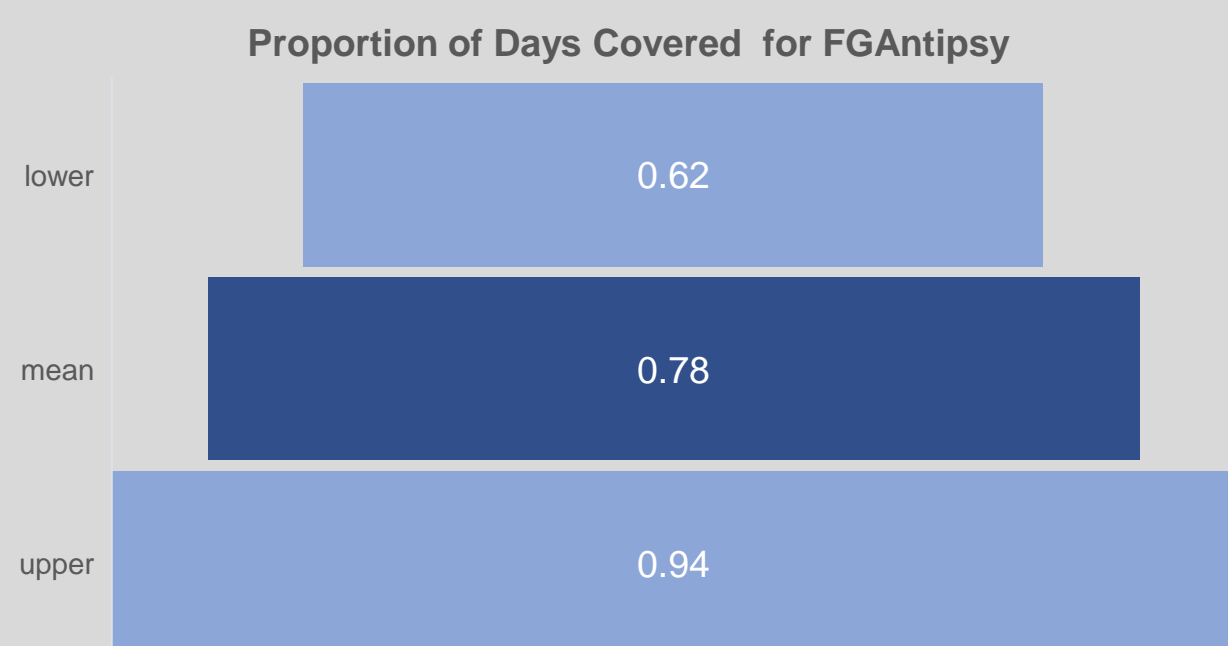


Figure 2: Displays results of PDC for First-generation antipsychotic therapies.

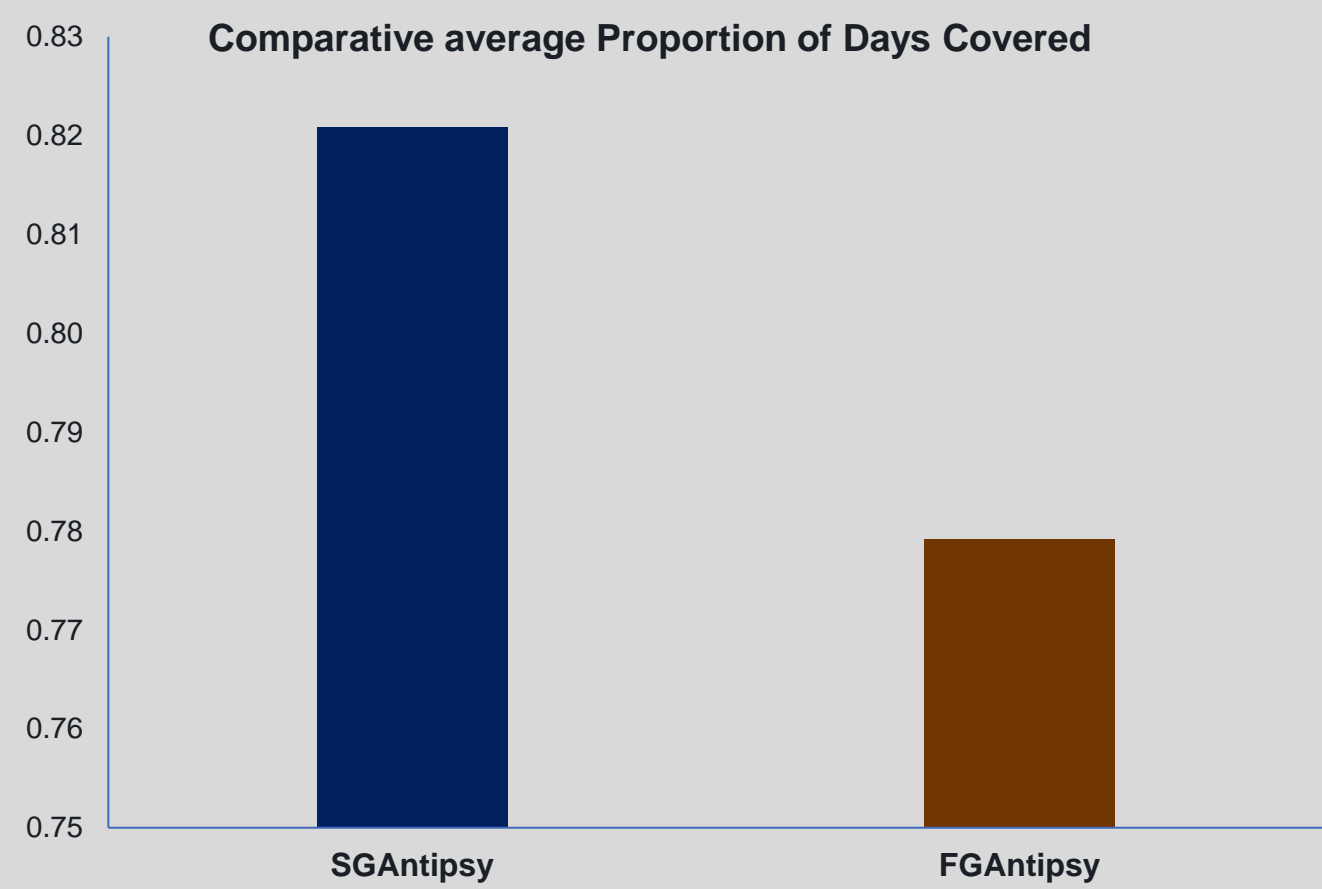


Figure 3: Comparison PDCs. between First- and Second-generation antipsychotic therapies.

References

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