



Predicting OCD Symptom Duration with Machine Learning

This presentation explores using machine learning to predict the duration of OCD symptoms. We aim to improve treatment strategies and patient outcomes. The research question is: Can machine learning accurately predict OCD symptom duration? This could lead to personalized treatment planning.

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Understanding Obsessive-Compulsive Disorder (OCD)

OCD Overview

OCD is characterized by obsessions and compulsions. The prevalence is about 2.3% of US adults. OCD significantly impairs daily functioning. There is variation in symptom presentation.

Impact and Heterogeneity

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The Challenge of Predicting OCD Symptom Duration



Limitations of Current Methods

Current methods include clinical assessments. There are subjectivity issues and recall bias. There is a need for objective, data-driven approaches.



Potential of New Approaches

Personalized treatment planning is possible. Data driven approaches offer predictive power.

Data Collection and Preparation



Sample

300 patients diagnosed with OCD per DSM-5 criteria.



Features

Demographics, clinical history, symptom severity, comorbidities.



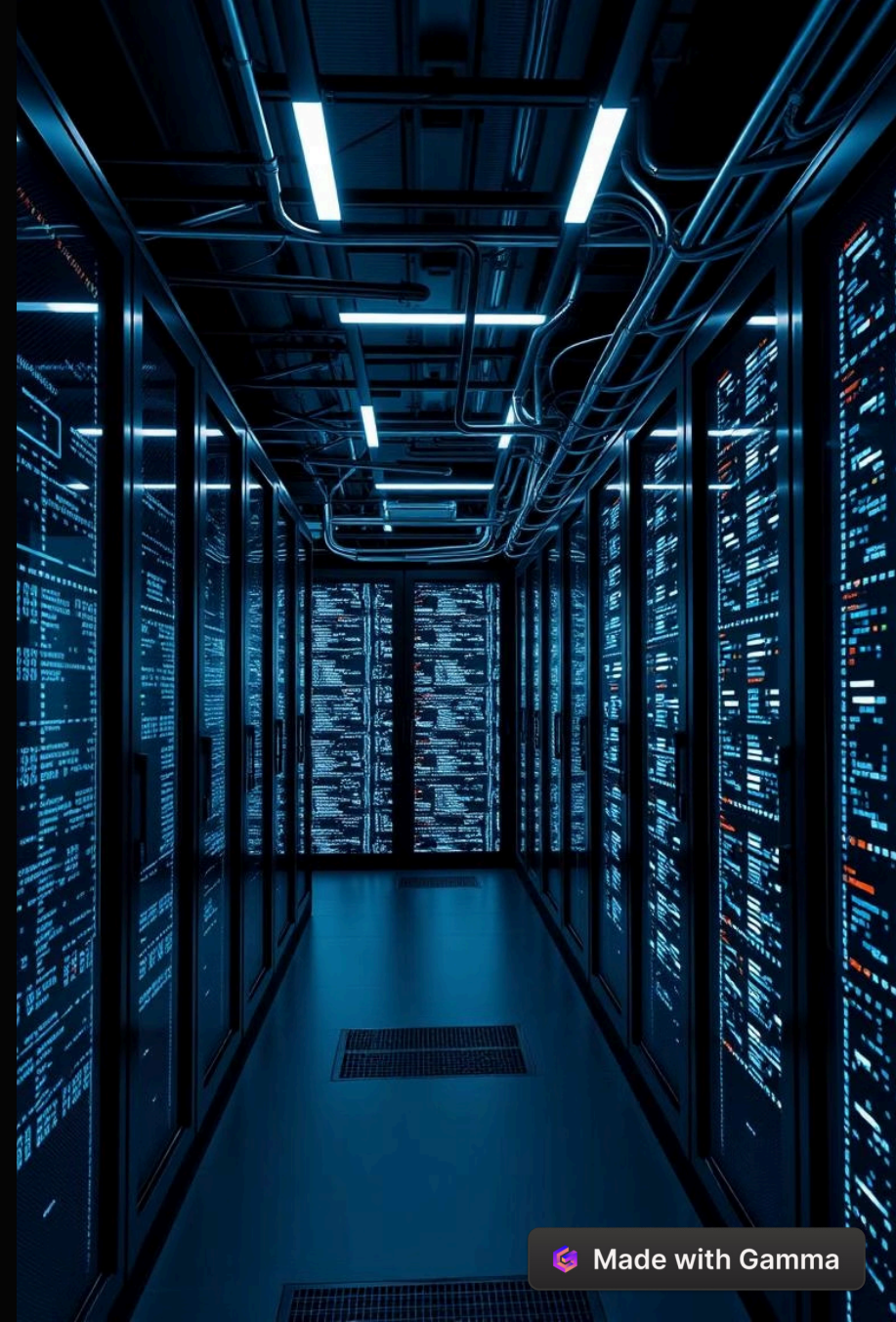
Data Sources

Electronic health records, structured interviews.



Preprocessing

Cleaning, normalization, feature selection.



Machine Learning Methods



Feature Importance Analysis

1

Key Predictors

Y-BOCS total score at baseline.

2

Other Factors

Age of onset, comorbid anxiety disorders.

3

Treatment

Prior treatment resistance.



Model Performance and Comparison

1

Random Forest
Highest F1-score (0.82).

2

AUC
AUC was (0.88).

3

Significance
Outperformed other algorithms ($p < 0.05$).

Visualizing Predictions and Uncertainty

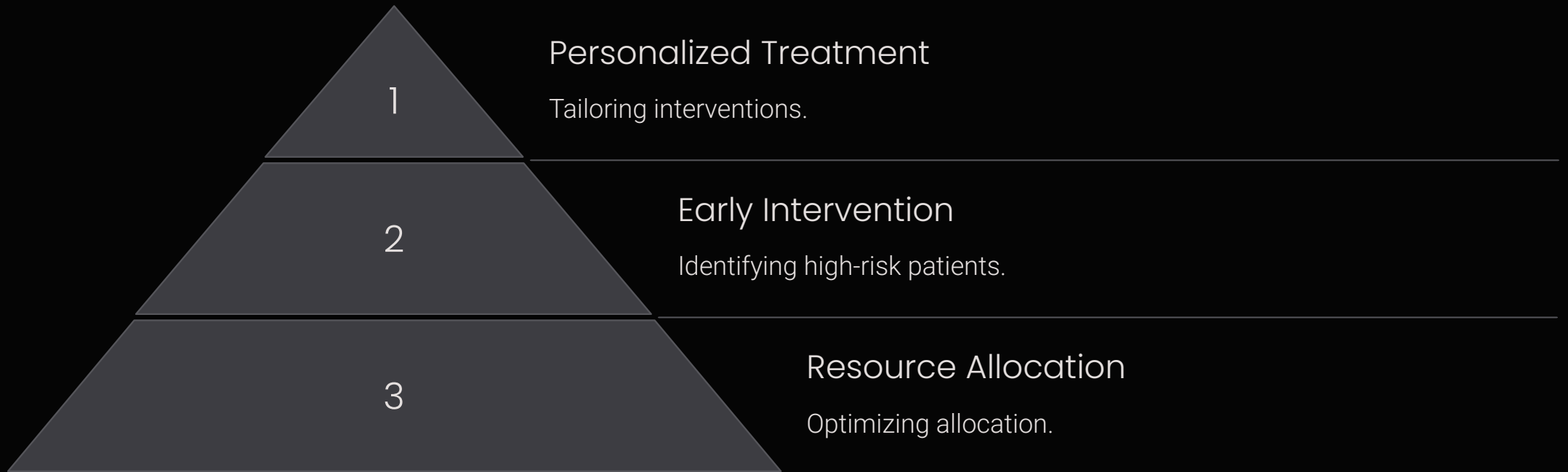
Calibration Curves
Assessing reliability.



Confidence Intervals
Quantifying uncertainty.

Decision Boundaries
Visualizing feature influence.

Clinical Implications and Applications



Conclusion and Future Directions

Summary

Machine learning can predict OCD symptom duration.

Limitations

Sample size, generalizability.

Future Work

External validation, genetic data.

