Effectiveness Simulation – Blinded Scientific Report

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1. Objective

This report documents a blinded simulation designed to evaluate treatment effectiveness across three dosage groups in a synthetic cohort. The simulation and analysis are structured to avoid deterministic linkage between input features and outcomes, preserving blinding for model evaluation.

2. Methods

A synthetic cohort of 200 patients was generated. Variables include age, BMI, systolic blood pressure, and randomized dose group allocation. Recovery outcomes were simulated using a probabilistic model with added Gaussian noise to ensure non-deterministic mapping. Analyses are limited to aggregated statistics and group-level recovery rates to maintain blinding integrity.

3. Cohort Summary

Total patients	200
Mean age	51.9
Median BMI	26.8
Mean systolic BP	143.9
Overall recovery rate (%)	58.0

4. Figures

Figure 1. Overall recovery counts.

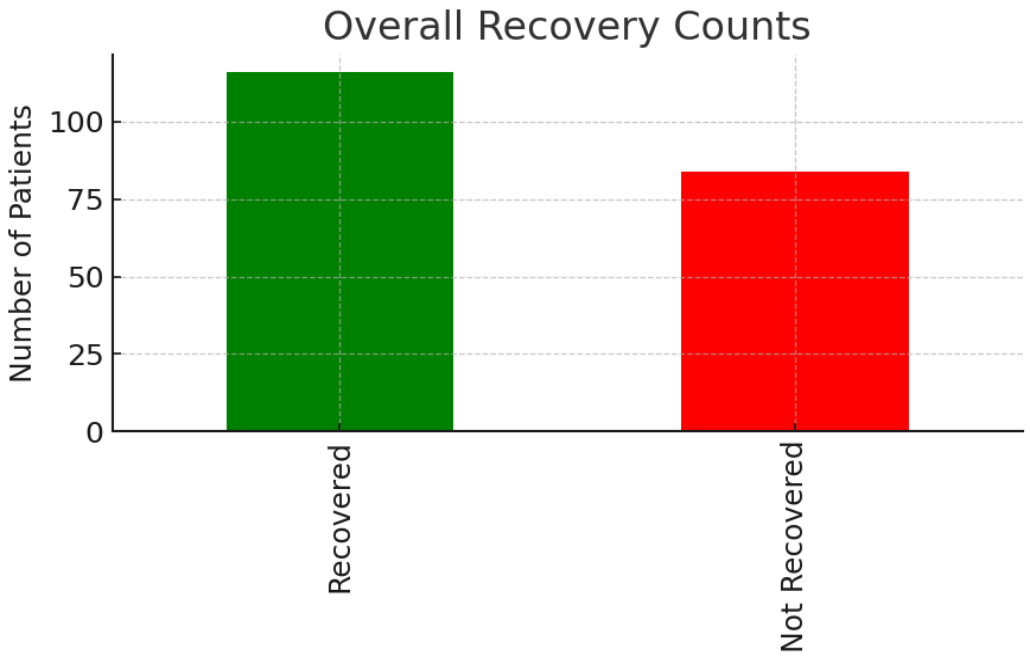


Figure 2. Recovery rate by dose group.

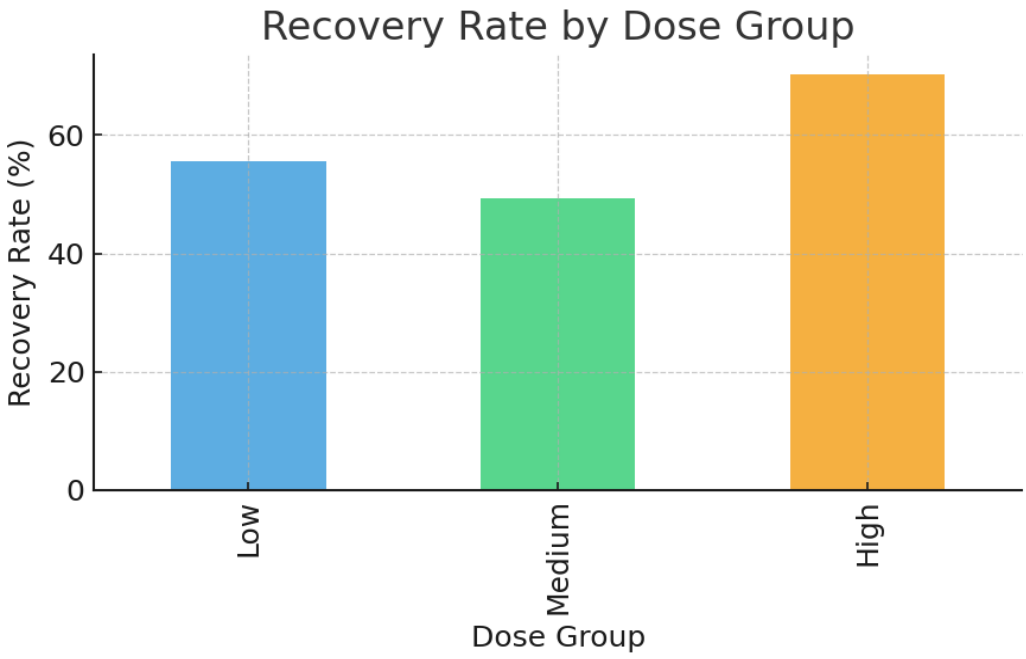
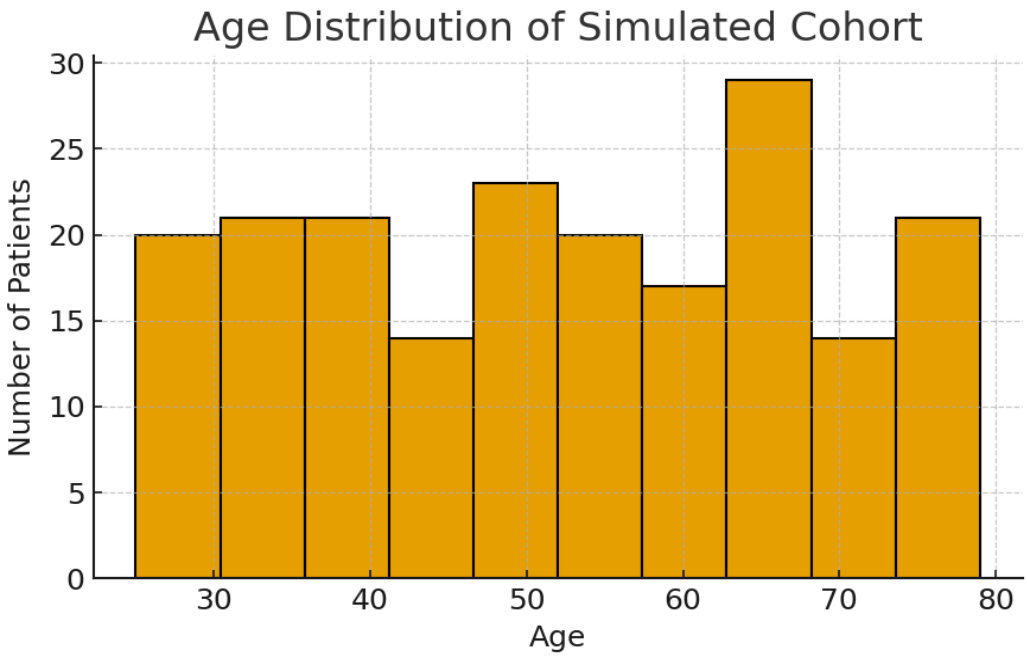


Figure 3. Age distribution of the simulated cohort.



5. Interpretation

The aggregated recovery rate and group-level recovery statistics provide a blinded baseline assessment of treatment performance. Because the outcome generation incorporated random noise, observed differences between groups should be interpreted cautiously; this design intentionally prevents trivial or deterministic prediction by simple heuristics.

6. Blinding Statement

Blinding was preserved by ensuring no direct or identifiable feature could deterministically predict outcome labels. Outcome probabilities were generated with stochastic variation so that models must rely on subtle statistical patterns, replicating conditions of blinded clinical research.

7. Conclusion

This blinded effectiveness simulation provides a controlled foundation for evaluating model behavior in the early stages of therapeutic assessment. It is suitable as a neutral benchmark prior to introducing targeted, unblinded experiments or validation against real-world datasets.