

A Flexible Program Compared to Algorithm-Guided Treatment Program for Depression: A Cost-Effectiveness Analysis

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Background

- In the north of the Netherlands, two different programs for treatment of patients with major depression have been applied: one uses a flexible, fixed-duration, shared-decision strategy, and the other is algorithm-guided based on guidelines.
- Insight into the cost-effectiveness of these two different treatment programs can optimize treatment allocation and enhance the quality of care for depression in a cost-efficient manner.

Objective

- To compare the real-world cost-effectiveness of two different depression treatment programs in daily practice

Methods

Study Design: A naturalistic cohort study

Source of Data: Data were from two Dutch specialist mental healthcare providers from 2012 to 2019 (n=4,363).

Subjects:

- Patients who present with unipolar depression as their primary diagnosis.
- Patients whose first routine outcome monitoring score was taken +/-30 days around intake date.
- Patients whose last routine outcome monitoring score was taken +/-30 days around treatment termination date.
- Patients whose treatments are completed within two years.
- Patients who did not appear at both healthcare providers.

Propensity score matching: was conducted to correct for selection bias and confounding by indication. Matching was done in a 3:1 ratio based on gender, age and baseline-symptom score.

Costs: were calculated from the healthcare perspective.

Effects: were measured by quality-adjusted life years (QALYs) derived from depression-free days^[1].

Nonparametric bootstrap with replacement methods were used to generate an empirical joint distribution of incremental costs and QALYs and acceptability curves.

Results

- The flexible program resulted in fewer QALYs (0.028) at a lower cost (€ 2491) than the algorithm-guided program.
- The incremental cost-effectiveness ratios (ICERs) was € 88,928 per QALY, which is above their ICER thresholds for implementation, suggesting that the flexible program was more cost effective than the algorithm-guided program.
- Uncertainty analysis shows a circa 84% probability that the flexible program is cost-effective at a threshold of € 50,000 per QALY.
- Without matching, the flexible program resulted in more QALYs (0.047) at a lower cost (€ 2609) than the algorithm-guided program with an ICER of € -55,510 per QALY, which was much lower than in the matched analysis.

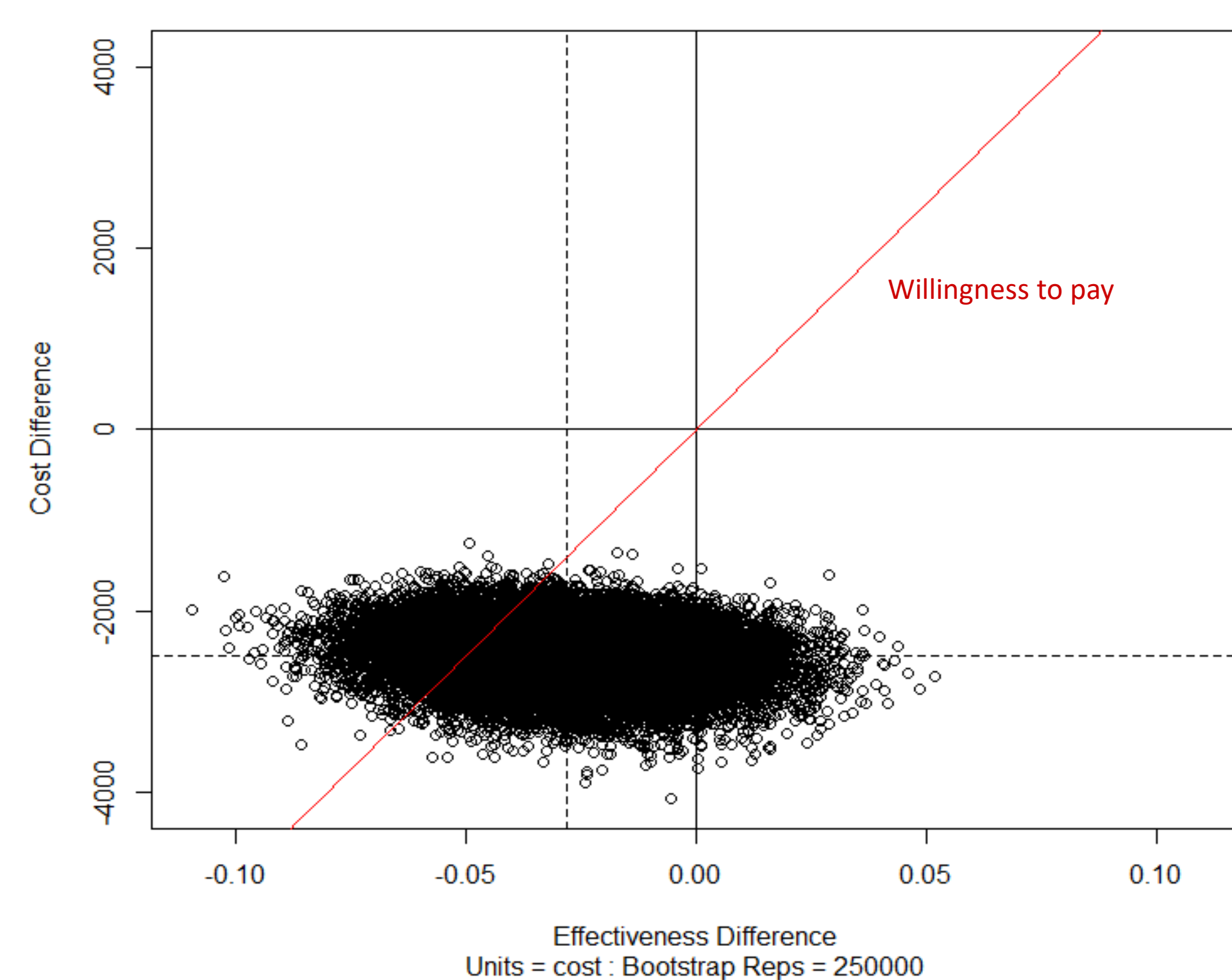


Figure 1. The Joint distribution (scatter plot) of incremental costs and QALYs of flexible program versus algorithm-guided program

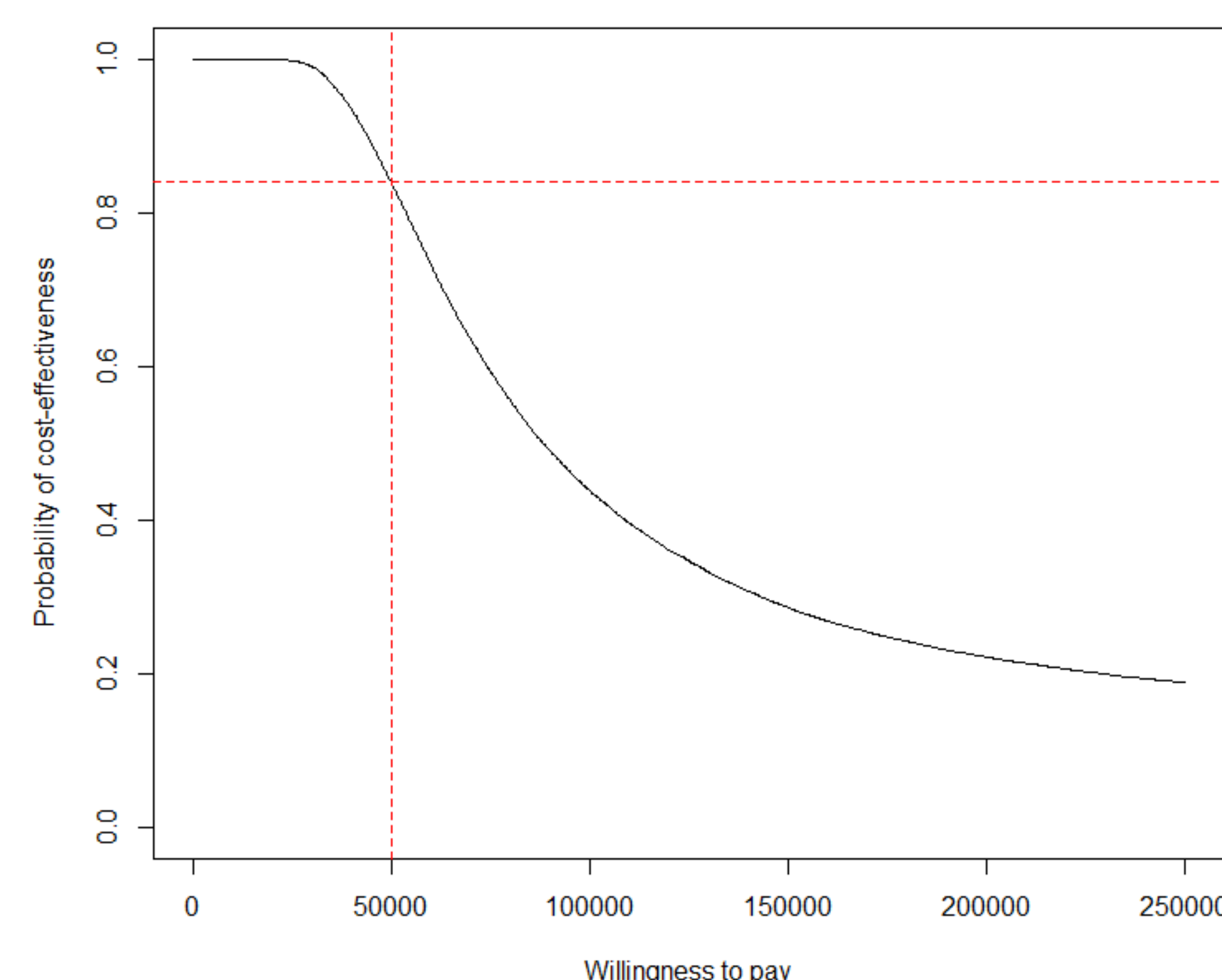


Figure 2. Acceptability curves representing the probability that incremental cost-effectiveness ratios comparing flexible program and algorithm-guided program ranging from € 0 to €250,000 per QALYs

Discussion

- These findings indicate that the program with a flexible, fixed-duration, shared-decision strategy is more cost-effective than the algorithm-driven program.
- The results obtained without matching indicate that selection bias, in which less severe patients requiring shorter treatment are more likely to be treated at the flexible program, may have an effect on the cost-effectiveness analysis.
- While matching resulted in comparable groups, only limited matching covariates were available. Also the risk of relapse was not compared between the two treatment programs.

[1] Vannoy, S.D., Arean, P., Unützer, J., 2010. Advantages of using estimated depression-free days for evaluating treatment efficacy. Psychiatr. Serv. 61, 160-163