Trial-based Economic Evaluation of the BrainACT Study

Sander Osstyn

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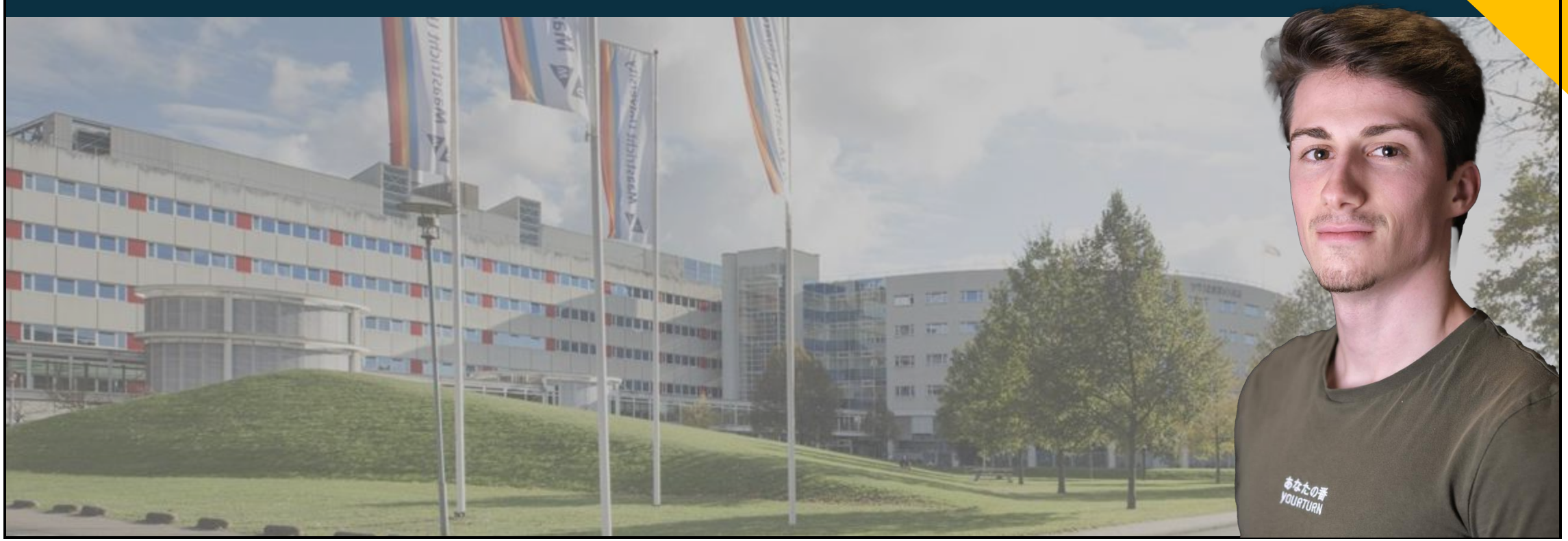

Maastricht University

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Research Team and More

In collaboration with

- *Johanne Rauwenhoff*
- *Ron Handels*
- *Marjolein de Vugt*
- *Silvia Evers*
- *Ghislaine van Mastrigt*
- *Caroline van Heugten*

No conflicts of interest

Maastricht University

Introduction

- Acquired Brain Injury (ABI) & anxiety/depression[1]
- **BrainACT**
  - Adapted form of Acceptance and Commitment Therapy
  - Proven to be feasible[2] and effective[3]
  - Missing: cost-effectiveness data

ACT helps:

- *Accept challenges*
- *Commit to values*
- *Live mindfully*

→ Cost-effectiveness of BrainACT

→ Important for reimbursement decision & informing policy makers

1 Rapoport MJ. Depression Following Traumatic Brain Injury. CNS Drugs. 2012.
2 Rauwenhoff JC, et al. Acceptance and Commitment Therapy is feasible for people with acquired brain injury: A process evaluation of the BrainACT treatment. Clinical Rehabilitation. 2023.
3 Rauwenhoff JCC, et al., Acceptance and commitment therapy for individuals with depressive and anxiety symptoms following acquired brain injury. Neuropsychol Rehabil. 2023.

METHODS

1

RESULTS

2

DISCUSSION

3

CLINICAL IMPLICATION

4

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1. METHODS

- Multicenter **randomized controlled** two-armed parallel trial
  - BrainACT (N=36) vs active control condition (N=36)
- **Societal perspective** | 1-year follow-up
- Inclusion criteria:
  - 18+ with TBI or stroke
  - Experienced anxiety/depression (HADS)
- **Recruitment** from Dutch healthcare facilities

1. METHODS

EFFECTS

Cost-utility → ***Quality-adjusted-life years (QALY)***

EQ-5D-5L → *Utility score* → *QALYs (area-under-the-curve-approach)*

Cost-effectiveness → ***Anxiety & Depression***

Hospital Anxiety and Depression Scale (HADS)

1. METHODS

COSTS

Resource use (societal perspective)
measured with 15-item cost questionnaire

1. Intervention costs

BrainACT
Active control intervention

2. Healthcare costs

Care professionals
Care at home
Hospital/ER
Institutionalization

3. Non-healthcare costs

Informal care
Productivity losses

1. METHODS

- Multiple imputation for handling missing data
- Incremental outcomes with a mixed model
- Bootstrapping (1000 reps) to handle uncertainty
- WTP of €50,000/QALY
- Several subgroup and sensitivity analyses

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2. RESULTS

COSTS

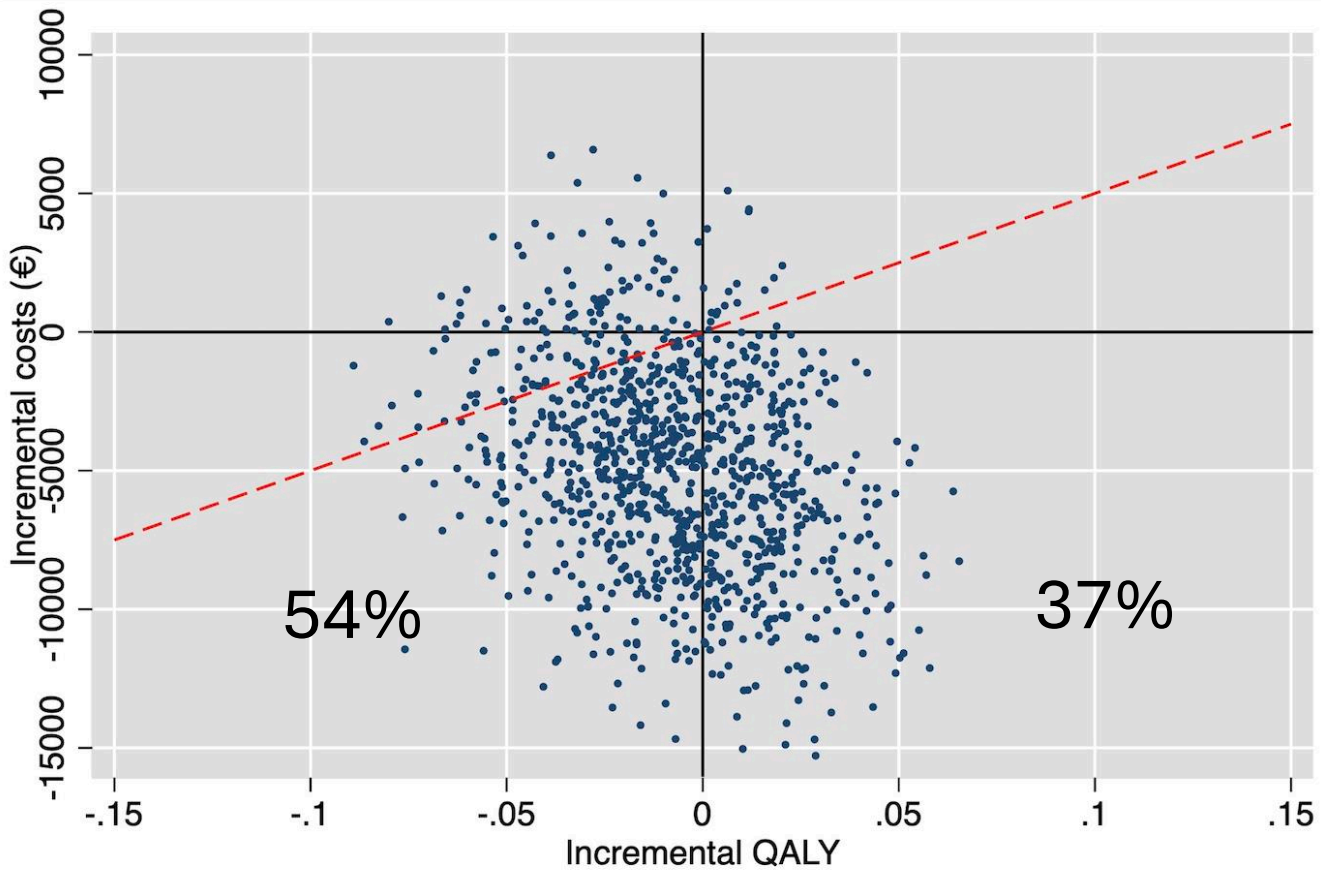
	BrainACT	Active control	
Intervention costs	€783	€437	=
Healthcare costs	€5,526	€5,661	=
Non-healthcare costs	€15,476	€21,809	<
Total costs	€21,003	€27,470	<

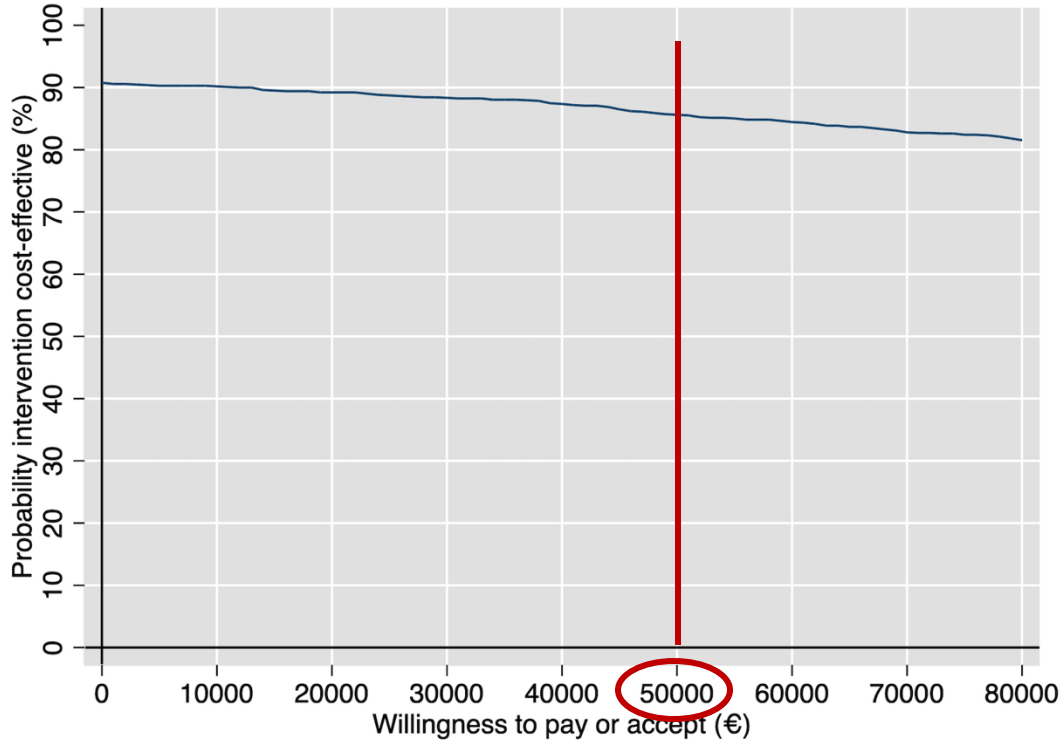
2. RESULTS

- **BrainACT vs Active Control**
  - Lower costs (€22,810 vs €27,859)
  - Small loss in QALY (0.67 vs 0.68)
  - Significant total anxiety/depression decrease (p=0.031)

2. RESULTS

a. Incremental cost-utility plane





→ Cost-effectiveness probability: 86%

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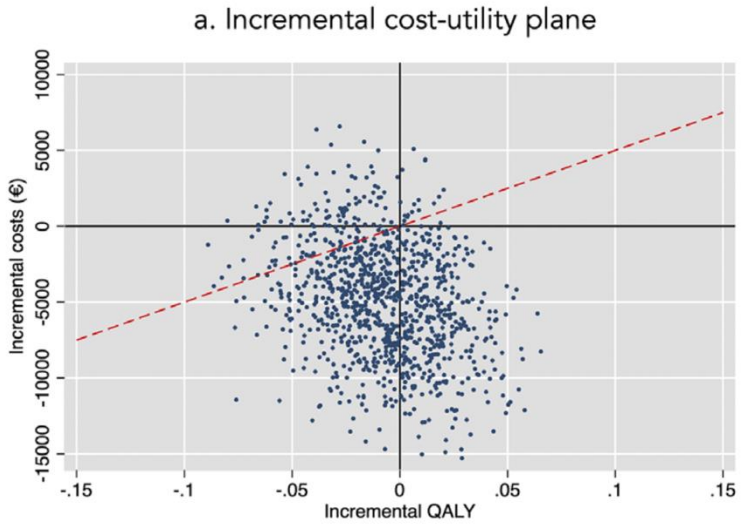

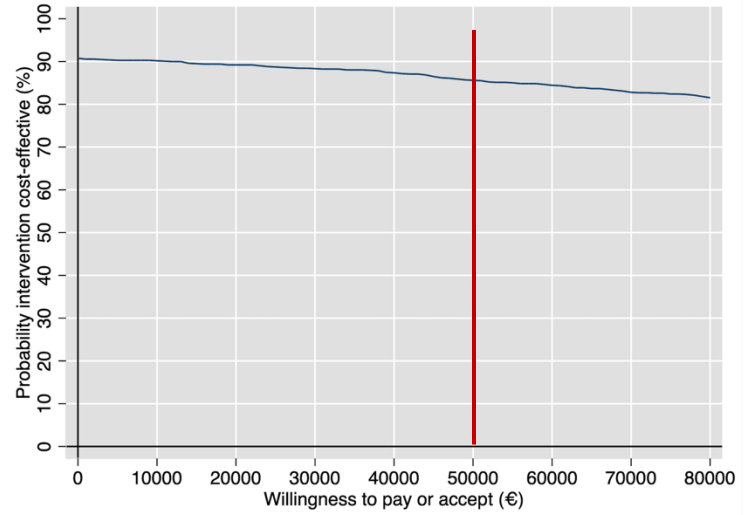

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3. DISCUSSION

- Total costs & productivity costs
- Limitations
  - Small sample size & relatively short follow-up period
  - Some uncertainty about productivity costs data collection
  - However, sensitivity analyses show enough certainty

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4. CLINICAL IMPLICATION

Despite some degree of uncertainty

Sufficiently reliable results

→ Recommend considering implementing BrainACT for Dutch ABI population

FULL PAPER

FULL OPEN ACCESS

Thank you for your attention

In collaboration with:

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