

Journey to Better Care: Enhancing Patient Outcomes Through Research

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Introduction

- Lauri Virtanen
- Registered /Research nurse
- Researcher
 - Ongoing research on Effectiveness of Neuromodulation Therapies on Depression and Schizophrenia
- 12 years of ECT-experience, 8 years as ECT-practitioner
- Associate member of NACT board



Case 1



- 37 years, woman
- Moderate treatment resistant depressive symptoms for 2 years
- MÅDRS 17 p. - BDI 17 p. – GAD-7 8p.
- Diagnosis:
Bipolar disorder (hypomanic episode at age 21) , ADHD, Autism-spectrum
- Unemployed, unmarried, no children
- Reports a decline in daily functioning (e.g. ‘My house is a mess’) and memory problems
- MoCa 26/30
- Previously had some benefit from ECT (6 sessions) during a severe depressive episode with some memory side-effects
- Should we administer ECT?
- Are we missing something?
- What do we predict?
 - Effects?
 - Side-effects?

Case 1



After 12 sessions of unipolar ECT

- Feels better than she can remember
- MÅDRS 2 p. – BDI 8p. – GAD7 2 p.
- No side-effects
- Recollects no memory problems
- MoCa 30/30
- Just started a new hobby (Jewelry making)

Was your prediction correct?

How do we define a good outcome?



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Rank the most important ECT outcome goals



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Rank the most important ECT outcome goals



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Patient outcome

Select which slide to add

Rank the most important ECT outcome goals

Which outcomes do you consider to measure in your ECT practice?

What do you use to assess patient benefit after ECT?

How well do you know factors that affect the assessment of patient?

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Patient outcome

Select which slide to add

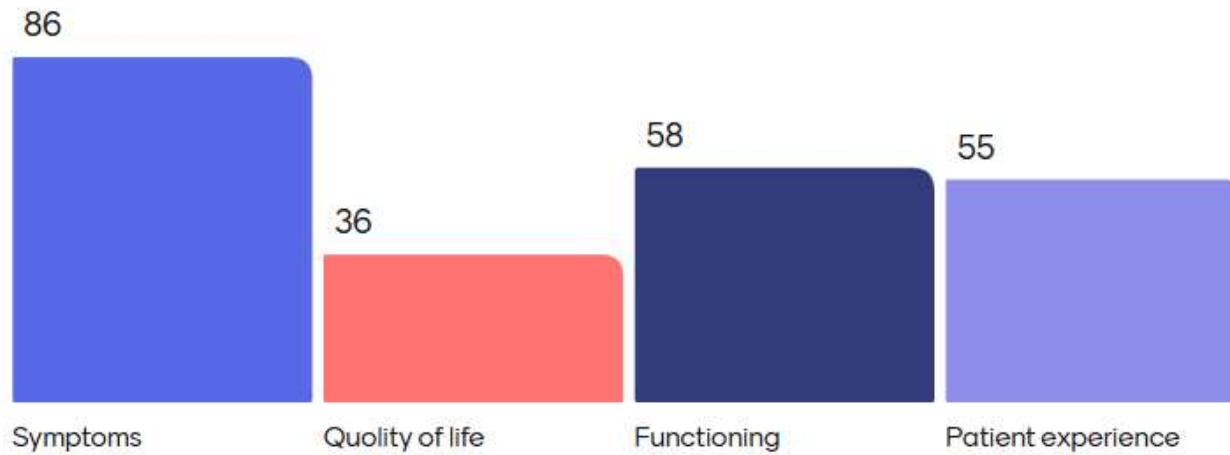
Rank the most important ECT outcome goals

Which outcomes do you consider to measure in your ECT practice?

What do you use to assess patient benefit after ECT?

How well do you know factors that affect the assessment of patient?

Which outcomes do you consistently measure in your ECT patients?



96 of 96 responded

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Patient outcome

Select which slide to add

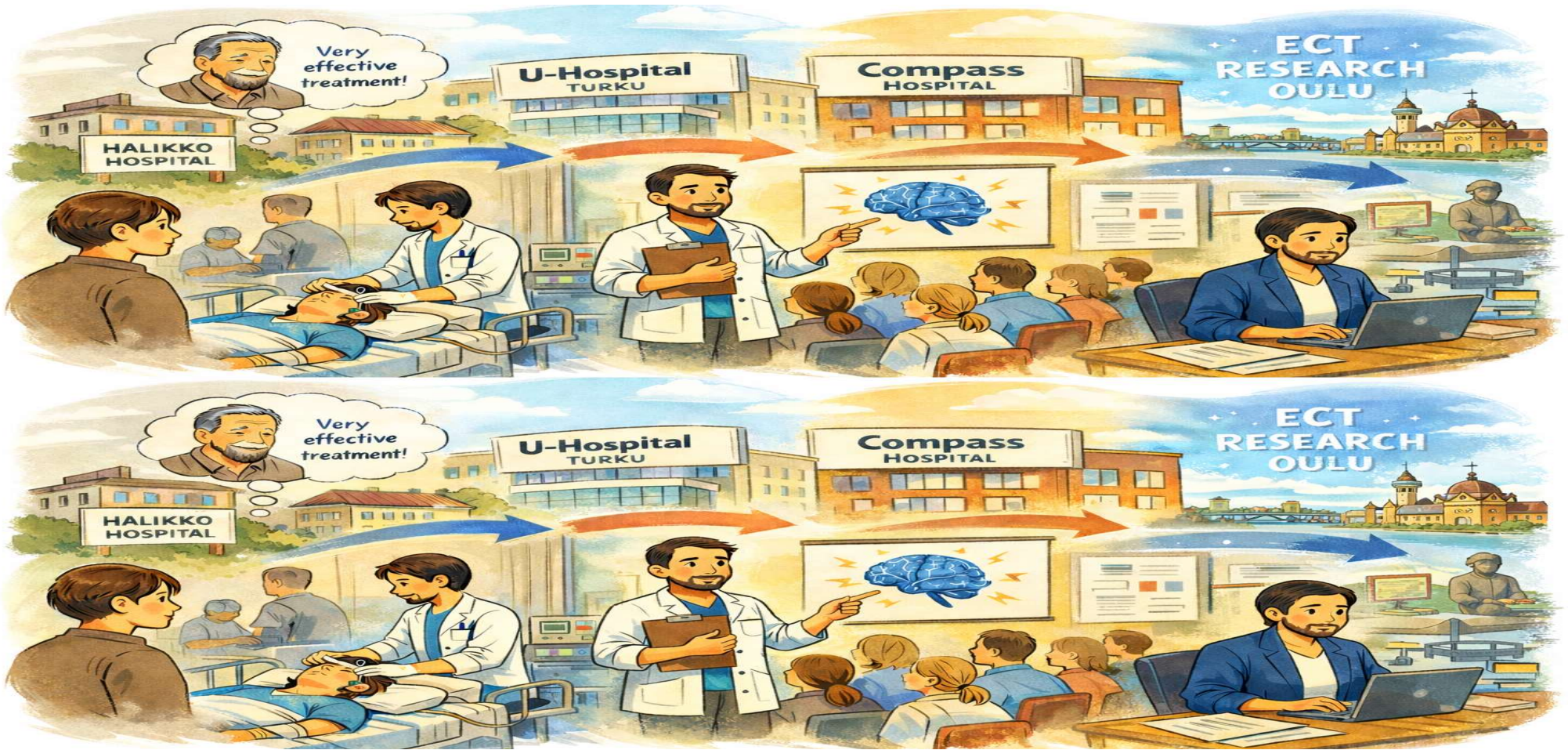
Rank the most important ECT outcome goals

What outcomes do you consistently measure in your ECT patients?

What do you use to assess patient benefit after ECT?

In your unit, do you have factors that affect the assessment of outcome?





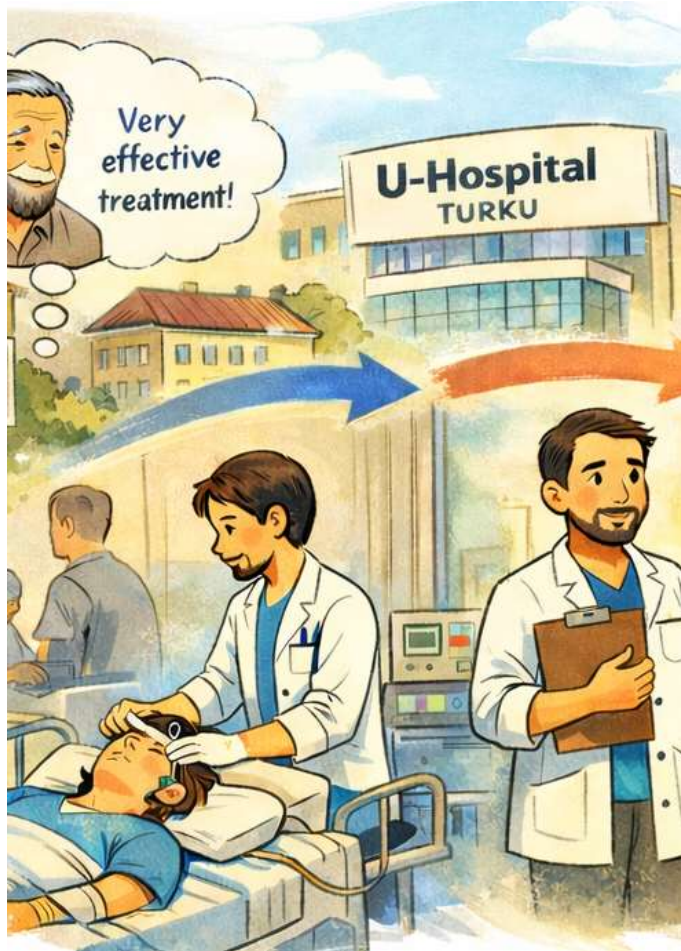
ChatGPT (GPT-5.3) [AI-generated image].

My Journey with ECT



Halikko Hospital 2014-2018

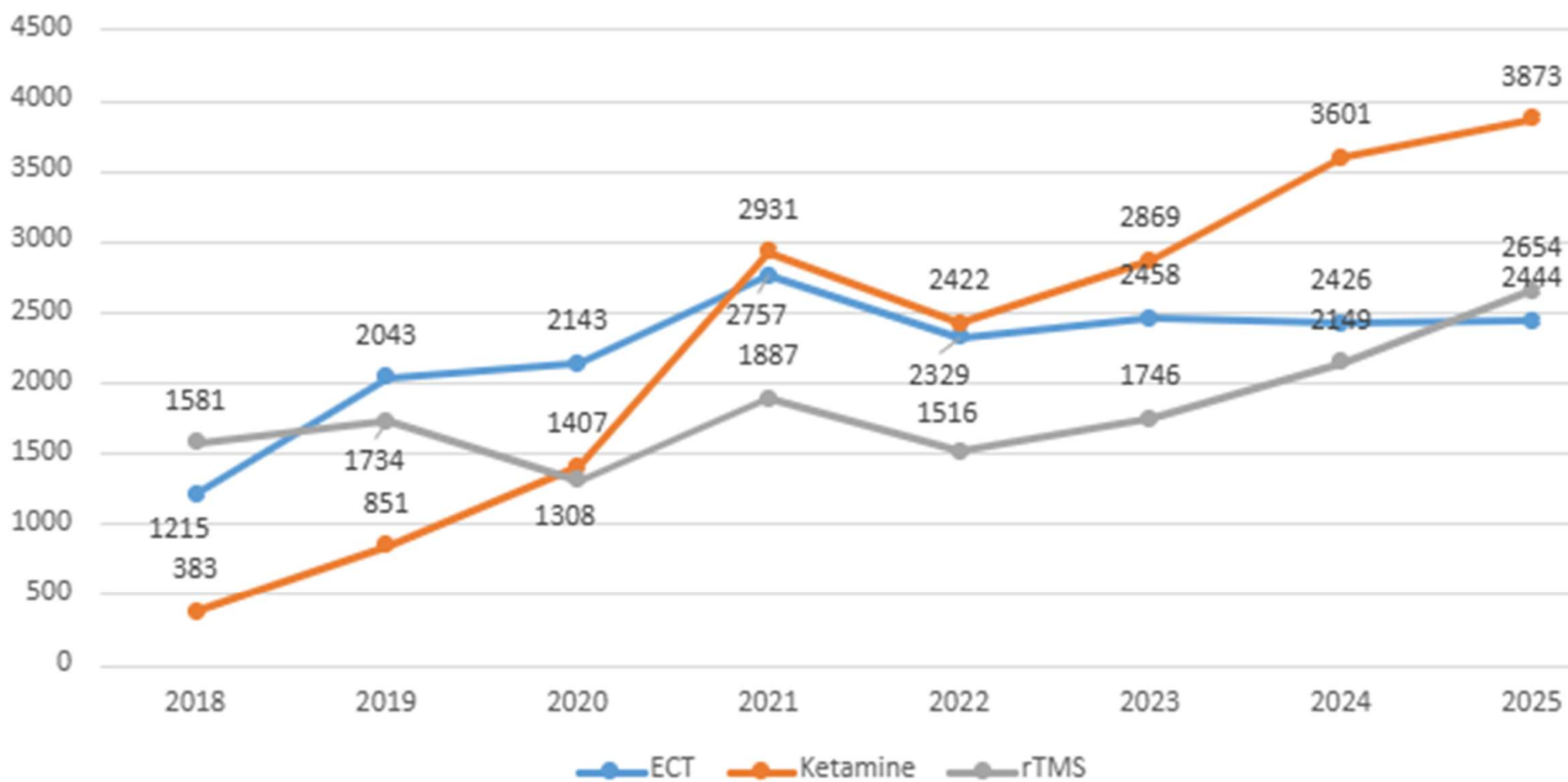
- Old cozy B-type hospital (60 beds) with a small ECT-unit
- Rotating psychiatrist, 2 nurses, anesthetist (All from wards)
- 2-4 treatments, 3 times a week
- Mainly inpatients from elderly ward
- Assessment of treatment response was based on the treating physician's clinical judgment
- Weekly BDI
- Focus was on functioning and whether patient could be discharged



Turku Neuromodulation unit U-Hospital 2018-2024

- All new neuromodulation unit (rTMS, tDCS, Ketamine)
(A separate general medical hospital, detached from the psychiatric unit)
- Chief physician, rotating psychiatry resident, 6-10 nurses, rotating anesthetist
- 8-12 ECT, 3-4 times a week
- Nurses were trained to administer and evaluate ECT
- 50-50 in- and outpatients
- Limited information regarding the patients' daily well-being and functioning on the ward
- The evaluation of patient outcomes was reliant on scores from different symptom assessment tools
- MÅDRS-score <50% + patients experience = Efficacy

Number of treatments 2018-2025



Did we improve the patient outcome?

- The possibility to assess patients systematically allowed us to compare our treatments with research and possibly with other hospitals
- Swedish quality register had published its first reports
- Could we get our own quality register in Finland?
- Shout out to Kaija Järventausta and Niko Seppälä who actively started the project

Symptom Assessment in Finland: 2019 Survey Results

Note: All respondents reported that clinical judgment is used in conjunction with these assessment tools

Indication	Turku	Helsinki	Tampere	Oulu	Kuopio	Lahti	Seinäjoki	Pori
Depression	BDI MÅDRS	BDI (MÅDRS) PHQ-9	BDI MÅDRS	BDI (MÅDRS)	BDI MÅDRS	BDI MÅDRS	BDI MÅDRS	BDI (MÅDRS)
Depression in older adults (65+)	GDS-30				GDS-15	GDS-30		
Psychosis	Calgary depression scale BPRS PANSS							
Obsessive-Compulsive Disorder (OCD)	Y-BOCS		Y-BOCS		Y-BOCS			
Schizophrenia								
Anxiety	BAI HAM-A			BAI				
Mania	YMRS							
Catatonia	Bush-Francis catatonia rating scale							
Bipolar depression	BDI MÅDRS YMRS					BDI MÅDRS	BDI MÅDRS	
Dissociative disorder	DES							
Increased suicide risk	C-SSRS							

Finnish Quality Register -project

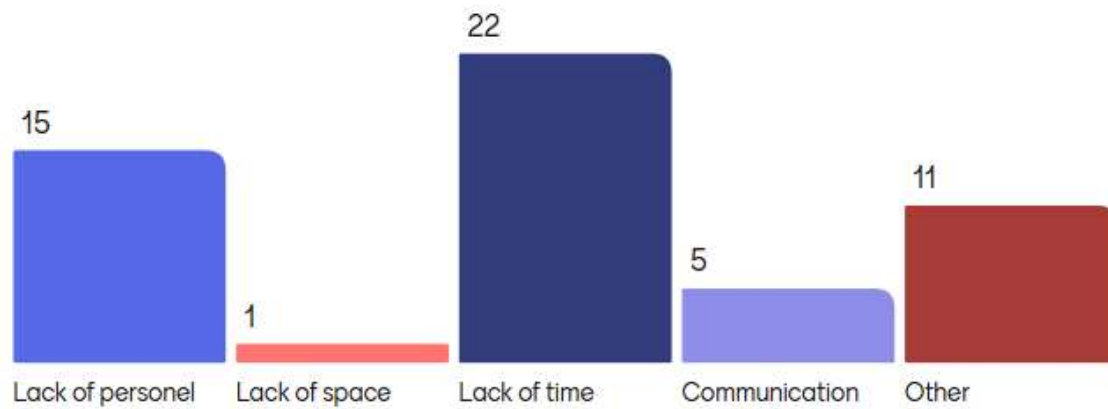
- The idea was to improve Finnish ECT-outcomes by promoting the use of quality register to more systematically gather data on ECT-treatment parameters and patient outcomes
- At the same time promote the use of unified assessment tools: MÅDRS, BDI, 15-D, Y-BOCS exc.
- The quality register was created together with Finnish experts from several hospitals and piloted in Turku University Hospital in 2020
- Unfortunately, the quality register project essentially collapsed because the ECT units couldn't secure funding for the integration. Currently, the register is only in use in two wellbeing services counties.



Turku Neuromodulation unit Compass-Hospital 2024-2025

- All new psychiatric hospital
- Most of the wards and clinics under one roof
- Chief physician, psychiatrist, rotating psychiatry resident, 12 nurses, rotating anesthetist
- 10-12 ECT-treatments, 5 times a week
- The evaluation of patient outcomes continued as before despite the possibility to also include treating staff in the evaluation process

In your unit, do you have factors that affect the assessment of patients?



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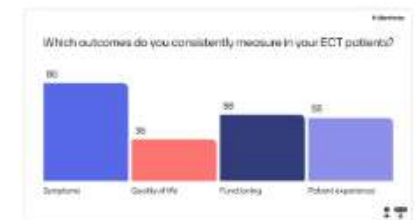
Patient outcome



Select which slide to add

Rank the most important ECT outcome goals

- Complete remission
- Complete recovery
- Quality of life
- Patient satisfaction



What do you use to assess patient benefit after ECT

Planning and organizing ECT in Finland

Karttunen S., Virtanen L.,
Holm A., Seppälä N.,
Sumia P., Jääskeläinen E.,
Järventausta K. 2024
Psychiatria fennica

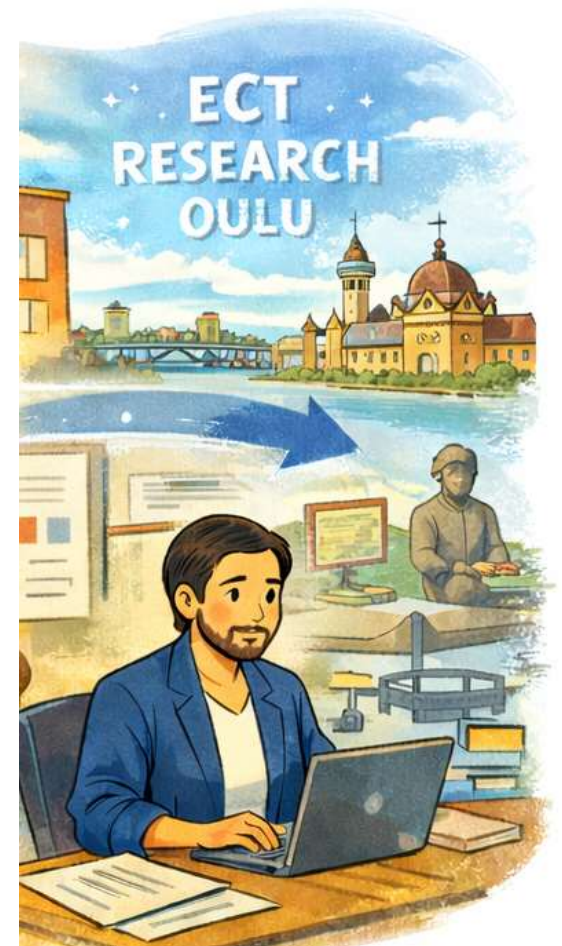
	Yes / no of answers (%)
Factors affecting the need for ECT	
Has the indication for ECT changed during the past 5 years	9/22 (41%)
ECT used to fill in for the lack of other treatment forms	6/20 (30%)
Factors affecting the capacity of the ECT unit	
Closure days in the unit*	6/22 (27%)
Does the guarantee of the treatment time concern ECT	10/22 (46%)
The strike in 2022 affected ECT services	5/22 (23%)
Balance of demand and resources	
Demand for ECT has increased more than resources	10/22 (46%)
Difficulties in prioritizing the patients	11/22 (50%)

How to improve patient outcome when staff and resources are limited?

- Digital patient pathways
 - Automated systems to gather information with self-assessment tools
 - Integrations with electronic patient records
- Start a research project and externalize evaluation to research group

Oulu Neuromodulation unit 2025-2026

- 100 years old hospital building
- Most of the wards close by
- 3 part-time psychiatrists, rotating psychiatry resident, 6 nurses, rotating anesthetist
- 14 ECT-treatments, 5 times a week (+rTMS, tDCS, Ketamine)
- Assessment of treatment response is based on the treating physician's clinical judgment during treatment sessions and self-assessment tools (BDI, GAD7)





What sort of outcomes should we focus on?

- Symptoms?
- Quality of Life?
- Functioning?
- Who's point of view?
- Something else?



Quality of life

- EQ-5D-5L
- 15D
- WHOQOL-BREF

Quality of life

Example WHOQOL-BREF Item

Question 1 of 26

1. How would you rate your quality of life?

Very poor

Poor

Neither poor
nor good

Good

Very good

WHO-5 Well-Being Index

- Most clinics assess patients' symptoms
- Should we focus more on the well-being rather than symptoms of depression?

		All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
1	I have felt cheerful and in good spirits	5	4	3	2	1	0
2	I have felt calm and relaxed	5	4	3	2	1	0
3	I have felt active and vigorous	5	4	3	2	1	0
4	I woke up feeling fresh and rested	5	4	3	2	1	0
5	My daily life has been filled with things that interest me	5	4	3	2	1	0

Exp-ECT (Expectations vs. results)

Krech, L., Belz, M., Besse, M. *et al.* Influence of depressed patients' expectations prior to electroconvulsive therapy on its effectiveness and tolerability (Exp-ECT): a prospective study. *Eur Arch Psychiatry Clin Neurosci* **268**, 809-817 (2018). <https://doi.org/10.1007/s00406-017-0840-8>

- On a 4 step likert scale patients were asked if they felt that:
 - In general, ECT is an effective treatment for depression—independently from single cases
 - ECT is/was an effective treatment for my depressive disorder
 - ECT will improve/has improved my depressive disorder
- Patients were also asked about their predictions about the side-effects
- “Patients’ pre-treatment expectations as measured by the Exp-ECT Questionnaire did not show any significant influence on the outcome of ECT treatment (MADRS reduction), and patients were not able to predict the effectiveness of ECT. ”



Conclusion

- To be able to improve the patient outcomes, we must first understand:
 - Our working-environment
 - What we want to know about our patients
 - What our patients hope from the treatment

**To quote every scientific paper ever:
We need further research...**

