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# Predictors of labour market marginalisation in psychiatric patients following internet-delivered psychotherapy: A MULTI-PSYCH study with clinical, registry, and genetic data

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# Background

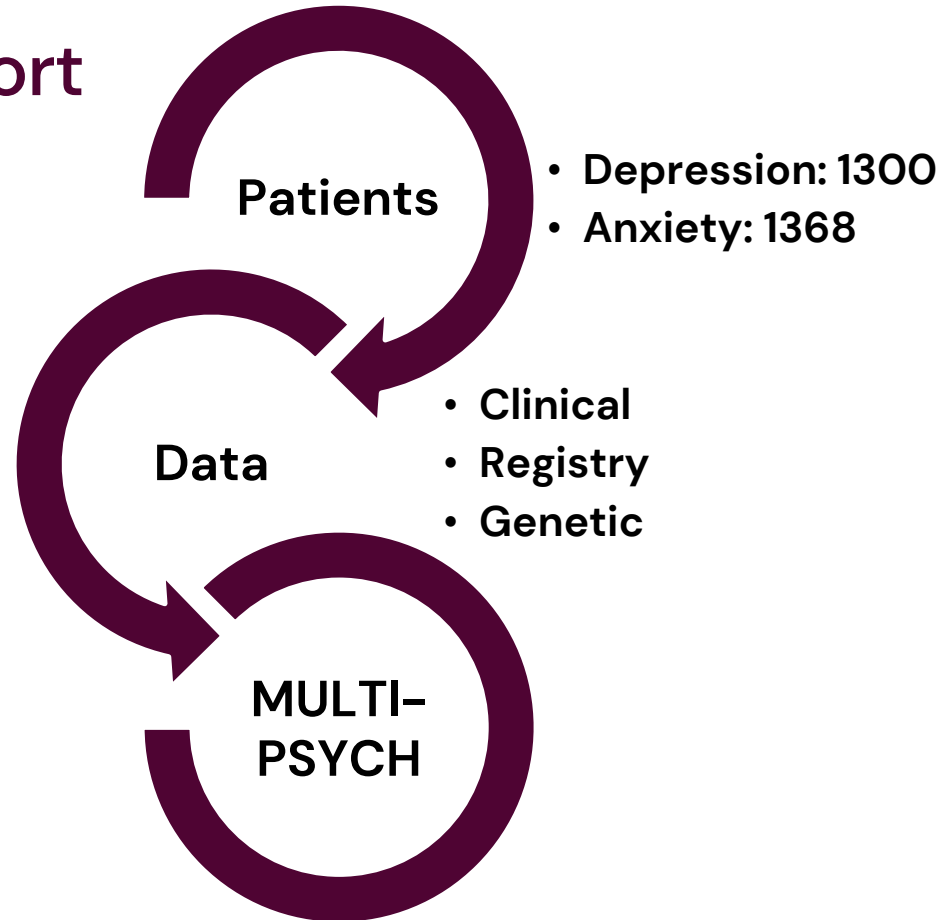
- Estimated global prevalence<sup>1</sup>
  - Depression: 246 million people
  - Anxiety disorders: 374 million people
- Internet-based Cognitive Behavioral Therapy (**ICBT**) is a cost effective first-line treatment<sup>2 3</sup>
- ICBT has mainly been evaluated using subjective self-rated symptom change
- Objective long-term socioeconomic outcomes are rarely considered

# Labour market marginalisation (LMM)

- **LMM**
  - long-term unemployed
  - long-term sickness absent
  - disability pension
- Individuals with psychiatric disorders constitute nearly half of people on long-term sickness absence in Sweden<sup>4</sup>
- Unemployment, sickness absence and disability pension is associated with adverse health outcomes<sup>5 6 7</sup>

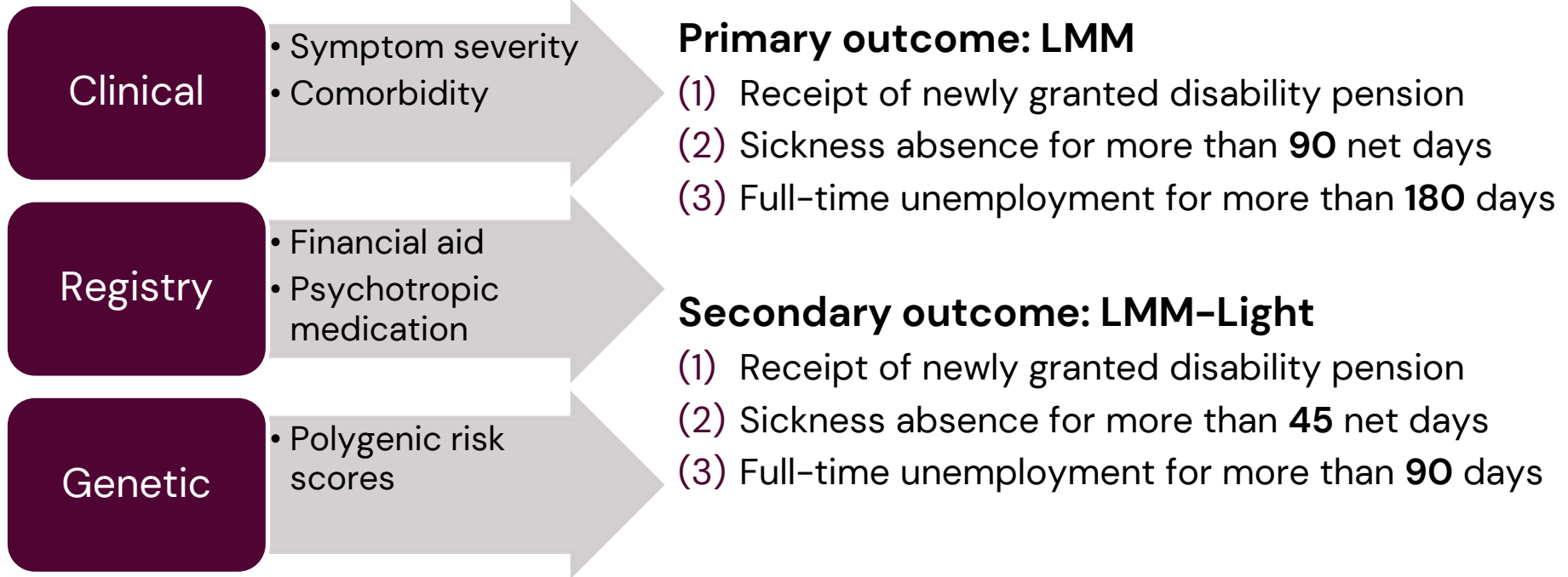
# The MULTI-PSYCH cohort

- 2668 patients diagnosed with:
  - depression
  - panic disorder
  - social anxiety disorder
- Recruitment: 2009–2019
- Treatment: 12 weeks of ICBT
- Participants were blood sampled and genotyped
- Data was linked to several Swedish registers



# Predictors

# Outcomes



# Results

## – Descriptives

- **LMM:** 233 (10%) patients
  - 53 (23%) unemployed
  - 165 (71%) sickness absence
  - 23 (10%) disability pension
- **LMM-L:** 334 (14%) patients

Stratified by LMM	No LMM	LMM	Missing (n)
n	2145	233	290
Mean age	35.6 (11.4)	40.2 (10.9)	0
Psychiatric comorbidity (%)	656 (31.9)	94 (42.0)	98
Psychiatric heritability (%)	1421 (69.1)	167 (74.6)	101
Prior psychiatric diagnosis (%)	275 (12.8)	49 (21.0)	0
Mean symptom severity	46.65 (17.69)	54.65 (18.58)	91
Woman (%)	1301 (60.7)	164 (70.7)	1
Financial aid (%)	382 (17.8)	122 (52.6)	6
Anxiolytics (%)	783 (36.5)	140 (60.1)	0
Antidepressants (%)	1038 (48.4)	168 (72.1)	0
Hypnotics and sedatives (%)	524 (24.4)	108 (46.4)	0

# Crude results

## – LMM

### Clinical predictors

- Psychiatric comorbidity
- Psychiatric heritability
- Symptom severity
- Sex
- Education
- Marital status
- Children

### Registry predictors

- Income
- Financial aid
- Psychotropic medication
  - Anxiolytics
  - Antidepressants
  - Hypnotics and sedatives
- Prior psychiatric diagnosis

### Genetic predictors

#### Polygenic risk scores

- Depression
- ADHD
- Autism
- Bipolar
- Education
- IQ
- Schizophrenia
- Cross-disorder



# Crude results

## – LMM

(+) Positive association with LMM  
(-) Negative association with LMM

### Clinical predictors

- **Psychiatric comorbidity (+)**
- Psychiatric heritability
- **Symptom severity (+)**
- **Woman (+)**
- **No university education (+)**
- Unmarried
- **Having children (-)**

### Registry predictors

- Income
- **Financial aid (+)**
- **Psychotropic medication**
  - **Anxiolytics (+)**
  - **Antidepressants (+)**
  - **Hypnotics and sedatives (+)**
- **Prior psychiatric diagnosis (+)**

### Genetic predictors

#### Polygenic risk scores

- Depression
- ADHD
- Autism
- Bipolar
- **Education (-)**
- IQ
- Schizophrenia
- Cross-disorder

# Adjusted results

## – LMM

(+) Positive association with LMM  
(-) Negative association with LMM

### Clinical predictors

- Psychiatric comorbidity
- Psychiatric heritability
- **Symptom severity (+)**
- Woman
- No university education
- Unmarried
- Children

### Registry predictors

- Income
- **Financial aid (+)**
- **Psychotropic medication**
  - **Anxiolytics (+)**
  - **Antidepressants (+)**
  - **Hypnotics and sedatives (+)**
- Prior psychiatric diagnosis

### Genetic predictors

#### Polygenic risk scores

- Depression
- ADHD
- Autism
- Bipolar
- Education
- IQ
- Schizophrenia
- Cross-disorder

# Adjusted results

## – LMM-Light

(+) Positive association with LMM  
(-) Negative association with LMM

### Clinical predictors

- Psychiatric comorbidity
- Psychiatric heritability
- **Symptom severity (+)**
- Woman
- No university education
- Unmarried
- Children

### Registry predictors

- Income
- **Financial aid (+)**
- **Psychotropic medication**
  - **Anxiolytics (+)**
  - Antidepressants
  - **Hypnotics and sedatives (+)**
- Prior psychiatric diagnosis

### Genetic predictors

#### Polygenic risk scores

- Depression
- ADHD
- Autism
- Bipolar
- Education
- IQ
- Schizophrenia
- Cross-disorder

# Conclusions

- LMM is common in this patient group
- Predictors of LMM
  - more severe symptoms of depression or anxiety
  - financial aid
  - psychotropic medication
- Clinical implications:
  - could help identify patients at risk for LMM
  - could help develop preventive measures for LMM

# References

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