

A Large-Scale Cohort Study of Organic Catatonia: Demographics, Comorbidities, and Mortality

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Background

Catatonia is a neuropsychiatric disorder presenting with a wide range of clinical signs including stupor, mutism, and echophenomena. An estimated **20-39%** of catatonia cases have an underlying medical aetiology, termed **organic catatonia (OC)**, which are often under-diagnosed in non-psychiatric settings. OC was only recently recognized as distinct **catatonic schizophrenia (CS)**, reflecting the growing evidence that catatonia arises from diverse medical as well as psychiatric conditions. Despite this, current literature is limited to **case series/reports**, leading to a **biased** understanding of its causes, associated conditions, and outcomes.

Aims

To conduct the first large-scale population-level study of OC by addressing **three** key questions:

1. What are the **characteristics** (sex, ethnicity, age, etc) of patients with OC?
2. What are the **most common comorbidities** with OC, and how do they compare with comorbidities of CS in incidence?
3. How do **survival outcomes** in OC compare with those in CS?

Methods

Cohort

Retrospective, population-level analysis of organic catatonia in Swedish cohort of **251 patients** from Swedish National Patient Register. Swedish death and migration registers data was also used.

Analysis

1. Descriptive statistics at:
 - a. Patient level
 - b. Episode level
2. Sensitivity analysis
 - a. At least 2 episodes
 - b. At least 1 inpatient episode
3. GLM comparing odds ratio of comorbidities between OC & CS
4. Survival analysis

Adjusted for:

 - a. Sex
 - b. Year of diagnosis
 - c. Age at diagnosis

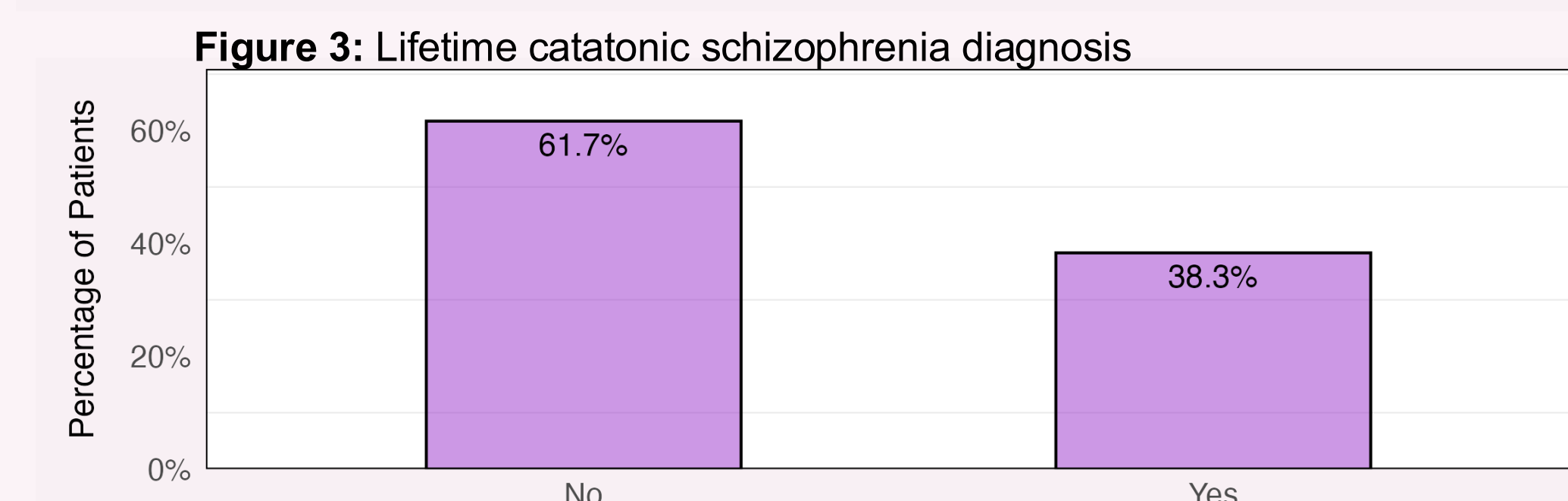
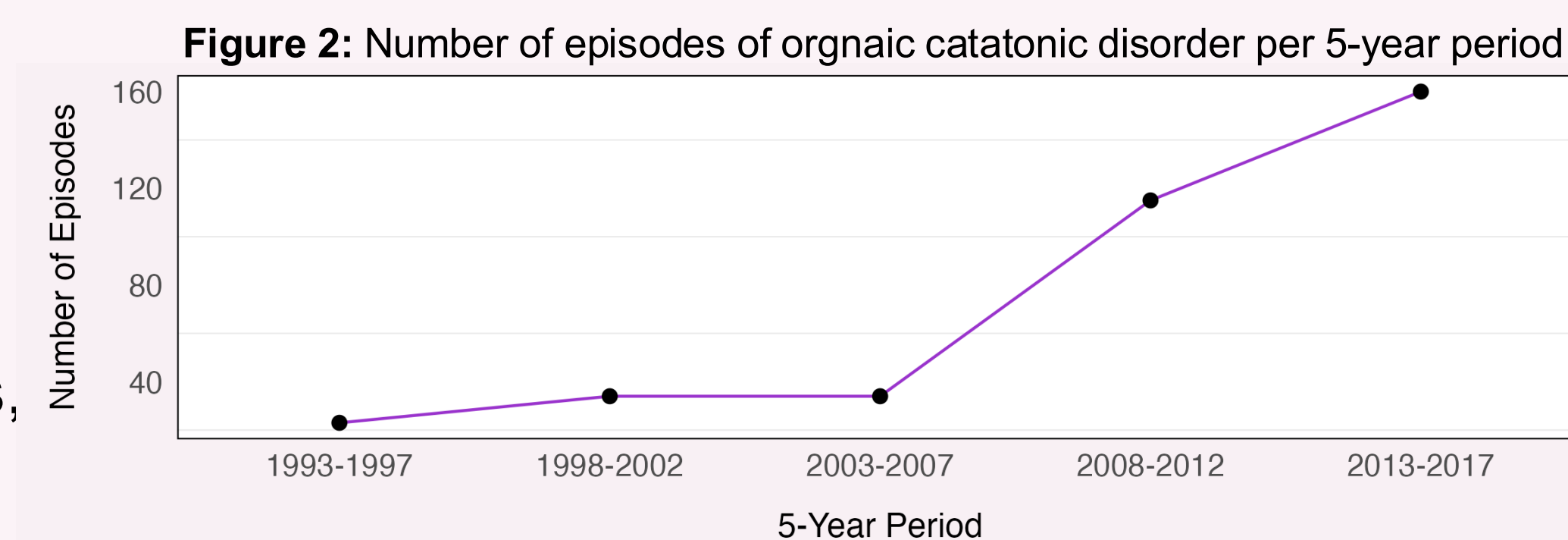
Figure 1: Cohort characteristics

Characteristic	CS N = 10 ¹	OC N = 251 ¹
Sex		
Male	6 (60%)	136 (54%)
Female	4 (40%)	115 (46%)
Birth Country		
Sweden	9 (90%)	220 (88%)
Europe Other	0 (0%)	16 (6.4%)
Other	1 (10%)	15 (6.0%)
Co-diagnosis		
No	10 (100%)	179 (71%)
Yes	0 (0%)	72 (29%)
Died During Follow-Up		
No	4 (40%)	149 (59%)
Yes	6 (60%)	102 (41%)
Age at First Diagnosis		
Alive	0	89
Age of Death	50 (39, 63)	57 (29, 76)

Results

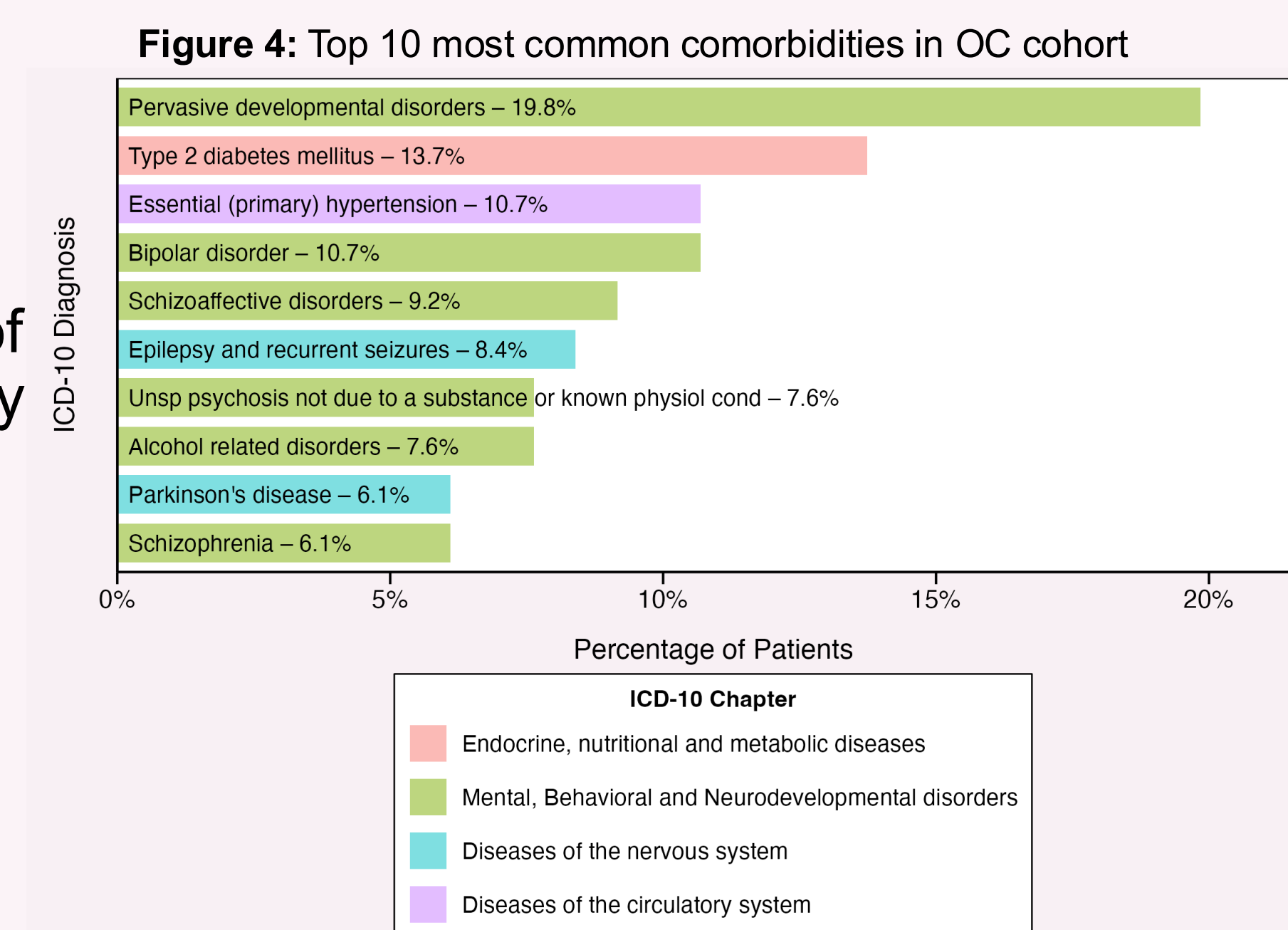
1. Descriptive statistics

- OC episodes surged in 2008-2012
- Sensitivity analysis excluding this period, patients who had at least two OC episodes, and one inpatient OC episode did not materially alter the overall findings
- CS and OC are **not mutually exclusive** – more than a third of OC patients had CS in their lifetime



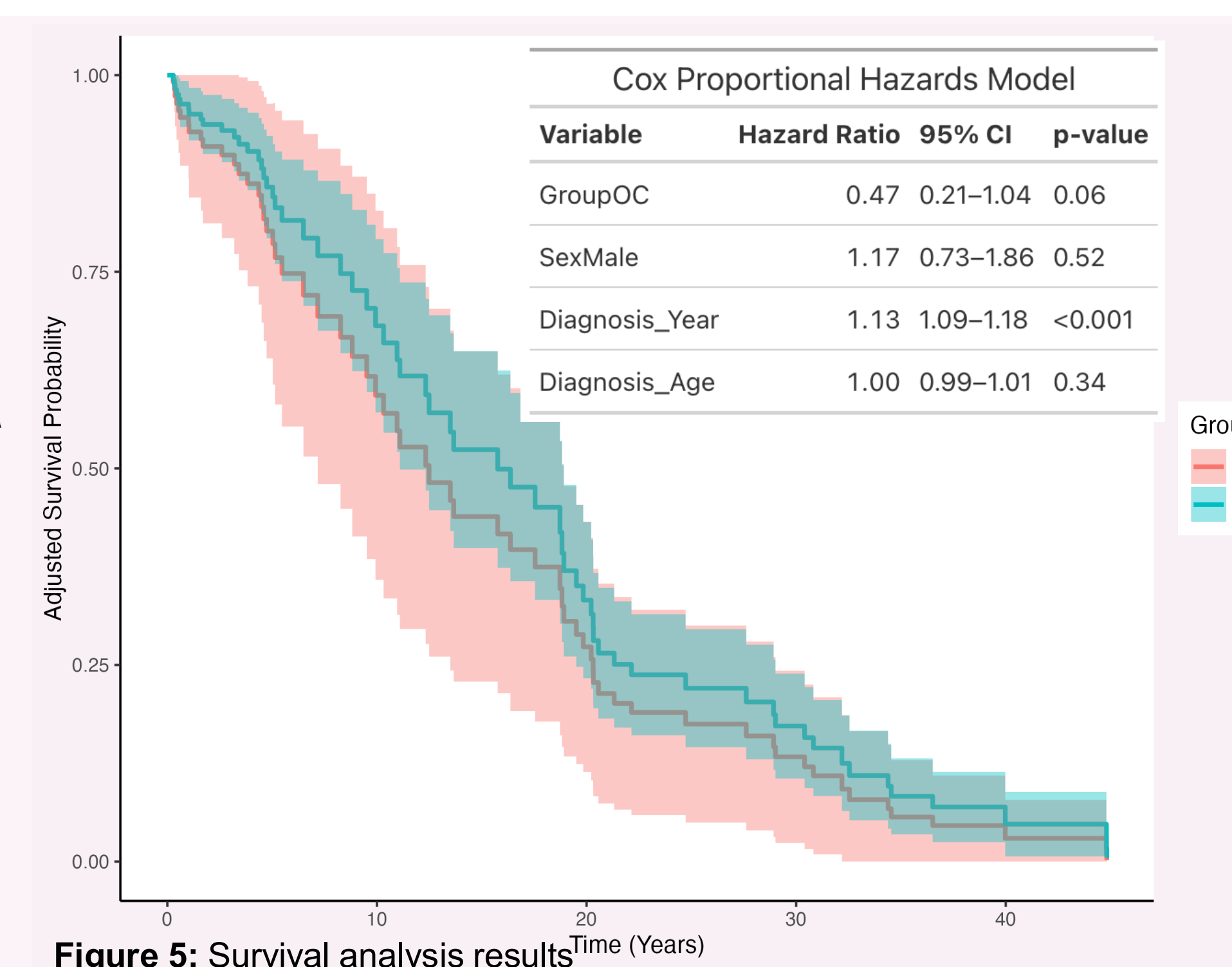
2. Comorbidity analysis

- **Pervasive developmental disorder** was the most common comorbidity amongst OC patients
- **Psychiatric disorders** were comorbid to **46.5%** of all OC episodes, being the most common category
- Preliminary GLM analysis suggests that OC patients had **higher odds** of having psychiatric disorder, movement disorders, CNS inflammation, epilepsy, sepsis, and developmental disorders



3. Survival analysis

- **39.5%** of OC patients were deceased during follow-up; the leading cause of death involved diseases of the circulatory system
- Adjusting for covariates, OC patients showed a trend toward **improved** long-term survival compared with CS patients
- Survival curves diverged within the first years, though differences did **not** reach statistical significance ($p = 0.06$)



Discussion

- The 2008–2012 spike likely reflects increased recognition and coding changes following ICD-10; findings remained robust after sensitivity analyses
- The significant overlap between OC and CS suggests that organic catatonia can simultaneously have medical and psychiatric aetiology
- Comorbidity analysis corroborates the common medical causes identified by the only systematic review in the literature (Oldham, et al), but psychiatric comorbidities were more frequent than expected, risking misattribution and subsequently misdiagnoses
- OC patients showed a trend toward better survival than CS patients, though not statistically significant, warranting further validation

Limitations

- Predominantly European population (94.4%)
- Limited external validation of diagnoses
- Heterogenous reporting standards
- Limited diagnostic history prior to ICD-10 (1997)

Conclusion

- This study represents the first large-scale, population level analysis of OC, providing novel insights into its causes, comorbidities, and long-term outcomes
- Given the high psychiatric comorbidity and overlap with CS, clinicians should routinely investigate both medical and psychiatric causes when assessing catatonia; early recognition of organic causes may enable timely treatment & improve survival outcomes

Future Directions

- Conduct subgroup analysis based on aetiology to identify factors influencing prognosis
- Validate findings in multi-ethnic, international cohorts
- Develop new clinical guidelines to improve early diagnosis and management of organic catatonia in non-psychiatric settings

