

The Prevalence of Tic Disorders in Poland: Regional, Sex and Age-Related Differences

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Introduction

- Tic disorders are one of the most frequent movement disorders in childhood.
- Depending on the type of tics and age groups, prevalence of tics is estimated to be between **11-20%** in case of transient tics in childhood age (Cubo et al. 2011) to about **1%** for Tourette syndrome (TS) in the adult population (Levine et al. 2019).
- So far, there has been no studies on the prevalence of tic disorders in **Poland**.

Methods

- We analyzed the prevalence of tic disorders and its trend between 2010 to 2023 based on data from the National Health Fund in Poland.
- We specifically examined sex and age differences in tic disorders prevalence, as well as differences across Polish regions.
- The diagnosis was provided by doctors working in public system who must provide primarily reason for the visit following **ICD-10** classification.

Results

Trends in tic prevalence

- During the period investigated, the prevalence of tic disorders in pediatric population in Poland **increased** from 1.92 per 1000 to 5.88 per 1000 inhabitants in females (Figure 1) and from 3.66 per 1000 to 4.72 per 1000 in males (Figure 3).
- In adults, prevalence of tics increased from 0.09 per 1000 to 0.36 per 1000 inhabitants in females (Figure 2) and from 0.1 per 1000 to 0.25 per 1000 inhabitants in males (Figure 4).

Regional differences

- There were significant differences between regions in the rate of prevalence increase
- The highest increase in pediatric population in **Świętokrzyskie** region (both in males and females, Figures 1 and 3)
- In adults the highest increase was in **Lubuskie** region (both in males and females, Figures 2 and 4).

Age at tic diagnosis

Tic disorders were more frequently diagnosed between the age of **10-18** years of age, when worst-ever tic severity usually occur and this trend was consistent across both sexes.

Number of visits

The average number of visits (both ambulatory and inpatient) per year was between **4.6-8.4**.

Figure 1. Trends in prevalence of tic disorders in females over time and different regions in pediatric population. The average trend is presented in black.

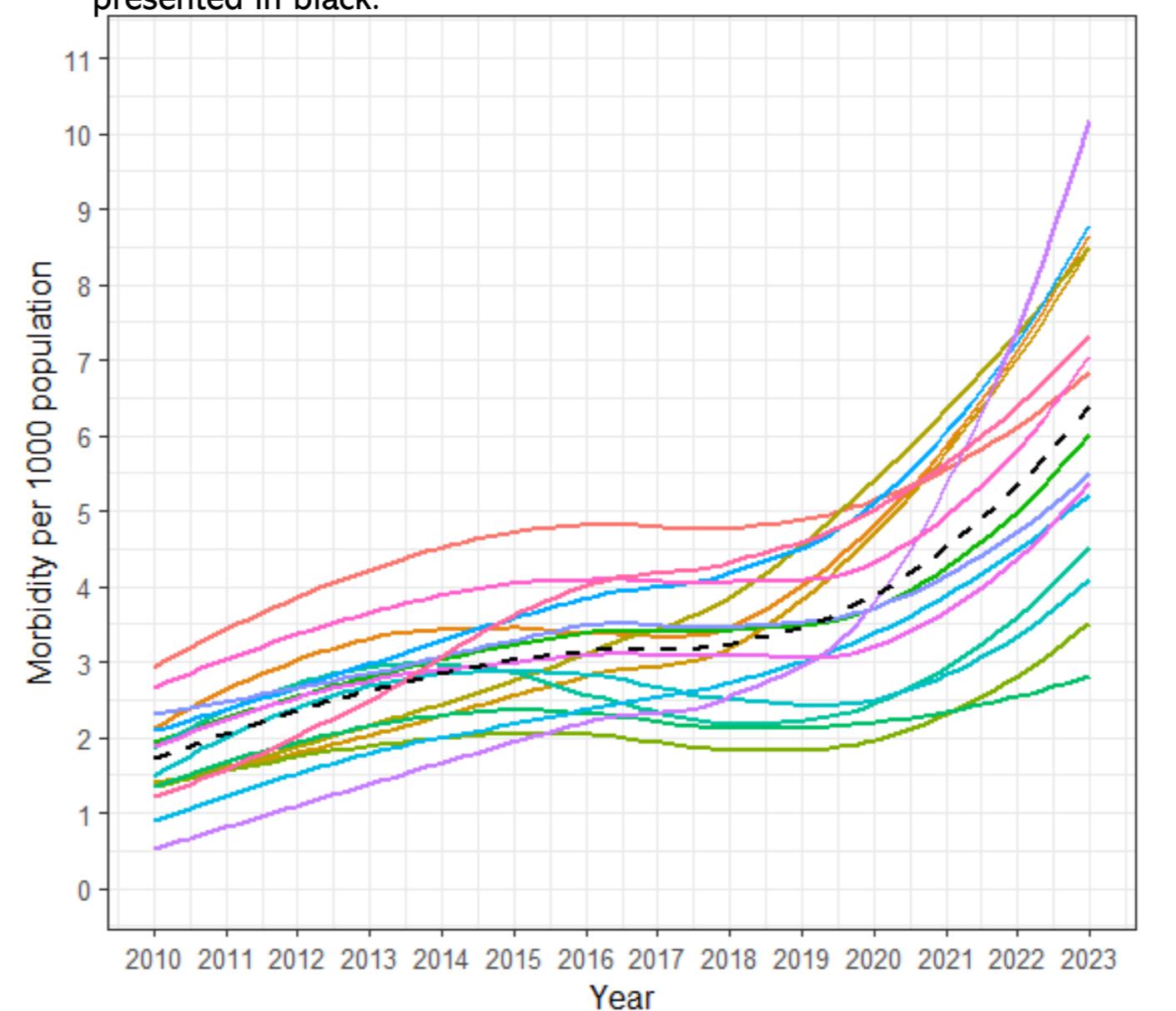


Figure 3. Trends in prevalence of tic disorders in males over time and different regions in pediatric population. The average trend is presented in black.

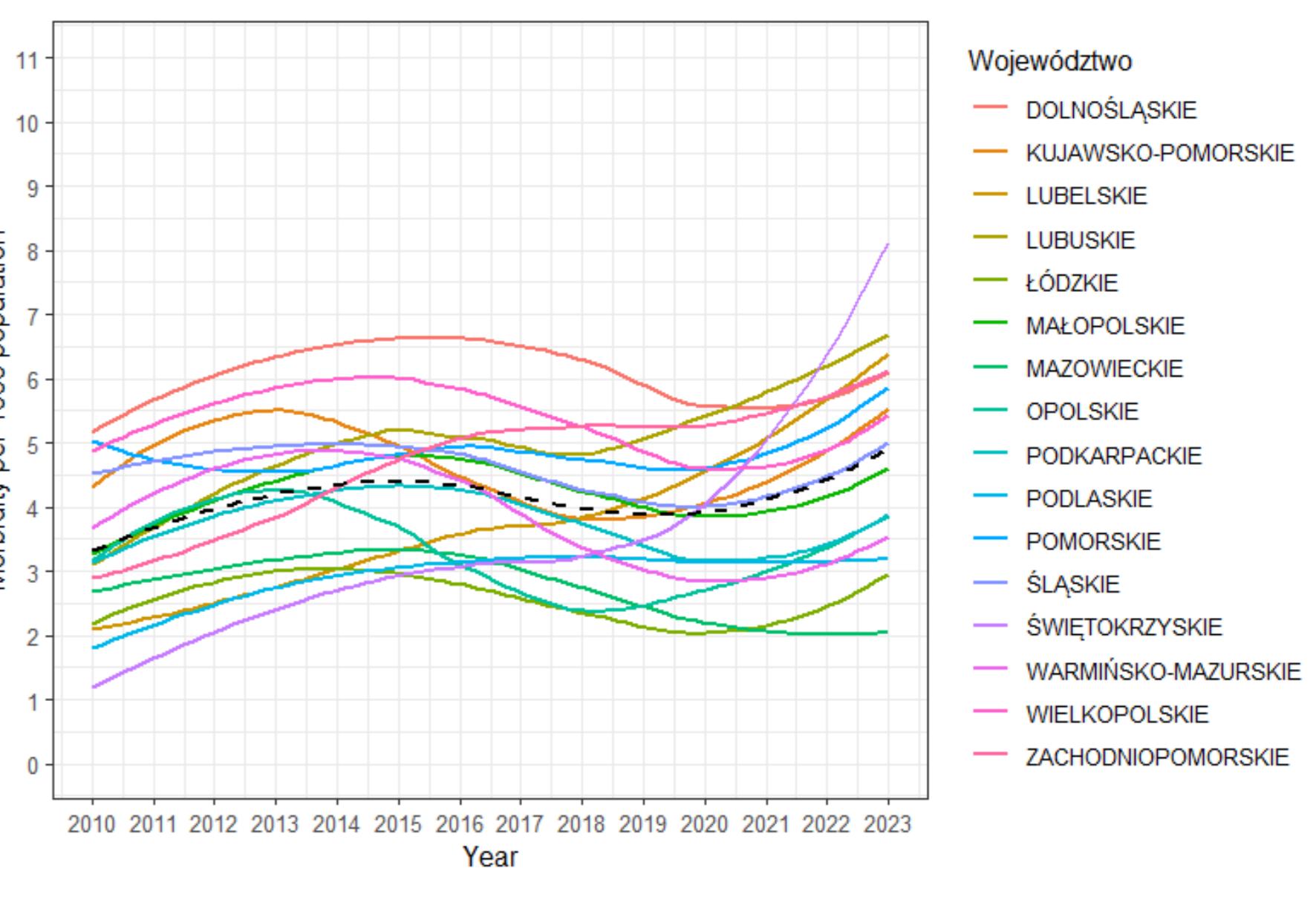


Figure 2. Trends in prevalence of tic disorders in females over time and different regions in adult population. The average trend is presented in black.

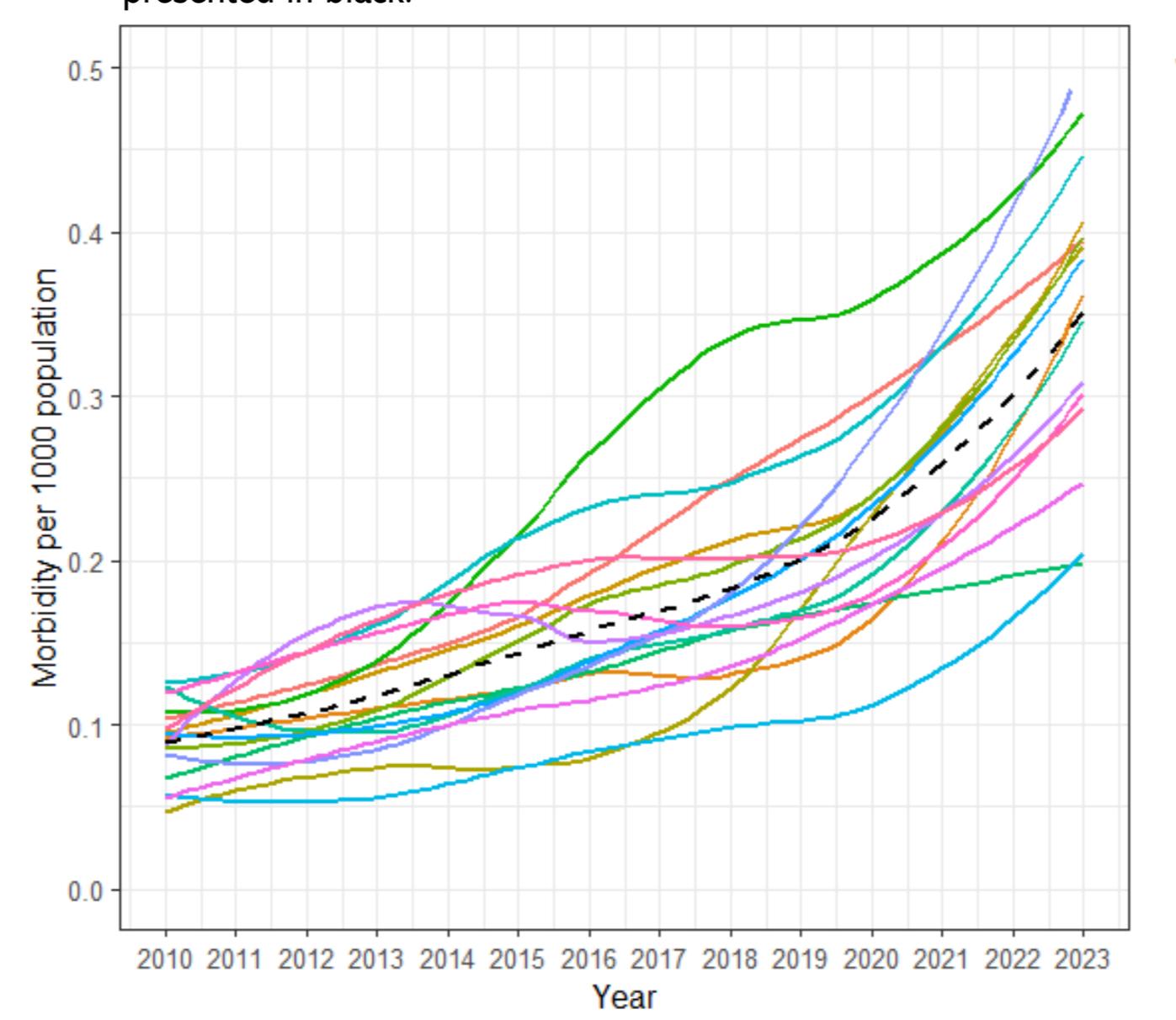
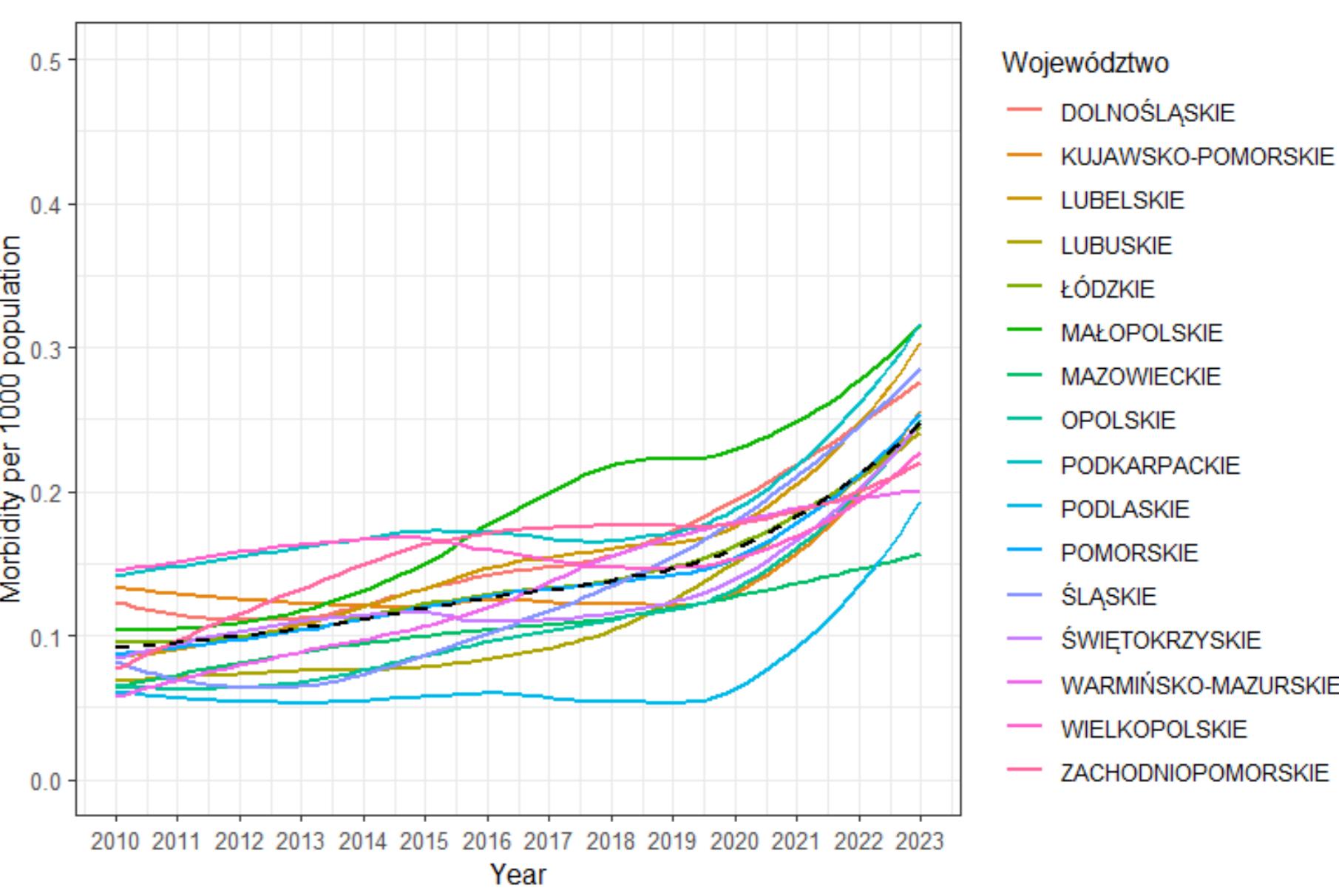


Figure 4. Trends in prevalence of tic disorders in males over time and different regions in adult population. The average trend is presented in black.



Access to specialist care

- Significant differences between access to specialists per 100 patients with tics, with **2.9%** for **neurologists**, **2.92 %** for **adult psychiatrists**, **0.35%** for **child psychiatrists** and **0.31%** for **child neurologists**.
- Significant regional differences, with the highest availability of specialists in **central Poland** where big centers are located.
- Here, the percentage was as high as **23.8%** while in underrepresented regions (Lubuskie region) was only between **1.6-1.9%** depending on specialty

Summary

- The **prevalence** of tic disorders in Poland is in line with previously reported prevalence rates.
- Overall, tic recognition is increasing among clinicians.
- As expected, diagnosis of tic disorders is usually made at **worst-ever tic severity** period.
- There are significant **regional differences** in disease recognition and **specialists** availability.
- Future endeavors should focus on **training of specialists**
- Moreover, it is vital to create **network** of tic disorders centers across different regions which will allow care standardization.