



Drug tracer estimates of Parkinson's disease prevalence in British Columbia (Canada): Validation of specificity

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Background/Rationale

- Parkinson's disease:
 - Neurodegenerative illness precipitated by loss of dopaminergic neurons in *substantia nigra*.
- Estimating prevalence
 - Diagnosis records (denominator?)
 - Door-to-door survey (small N error?)
 - Drug usage rates

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Drug Tracer Analyses of Parkinson's Disease Prevalence

- Assume:
 - "Specific" drug use (drugs used primarily for one disease)
 - "Sensitive" drug use (most true cases treated)
- Methods and formulae developed in 1980s.
- Previously estimated that >60% of patients treated with antiparkinsonian drugs were true Parkinson's cases.
- Method has been used in several prevalence studies worldwide.
- A previous (2003) study in British Columbia estimated crude prevalence at approximately 135 per 100 000.

Study Questions

- What proportion of people traced by antiparkinsonian drug use actually have Parkinson's disease?
- What are the characteristics of non-Parkinson's users of antiparkinsonian drugs?

Methods

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Specificity?



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Methods

- Screen traced participants for actual Parkinson's disease.
 - Self-reported PD status.
 - PD status verified against clinical criteria in interview.
- Request self-report of:
 - Specific drugs taken.
 - Chronic conditions treated.

Results:

Overall Proportions

- Total eligible subjects contacted: 877
- Total true cases: 427
(Confirmed with clinical criteria)
- Total users without Parkinson's disease: 450
(Self-reported non-PD status)
- 51% of recruited anti-parkinsonian users were **not** true Parkinson's Disease cases.

Results:

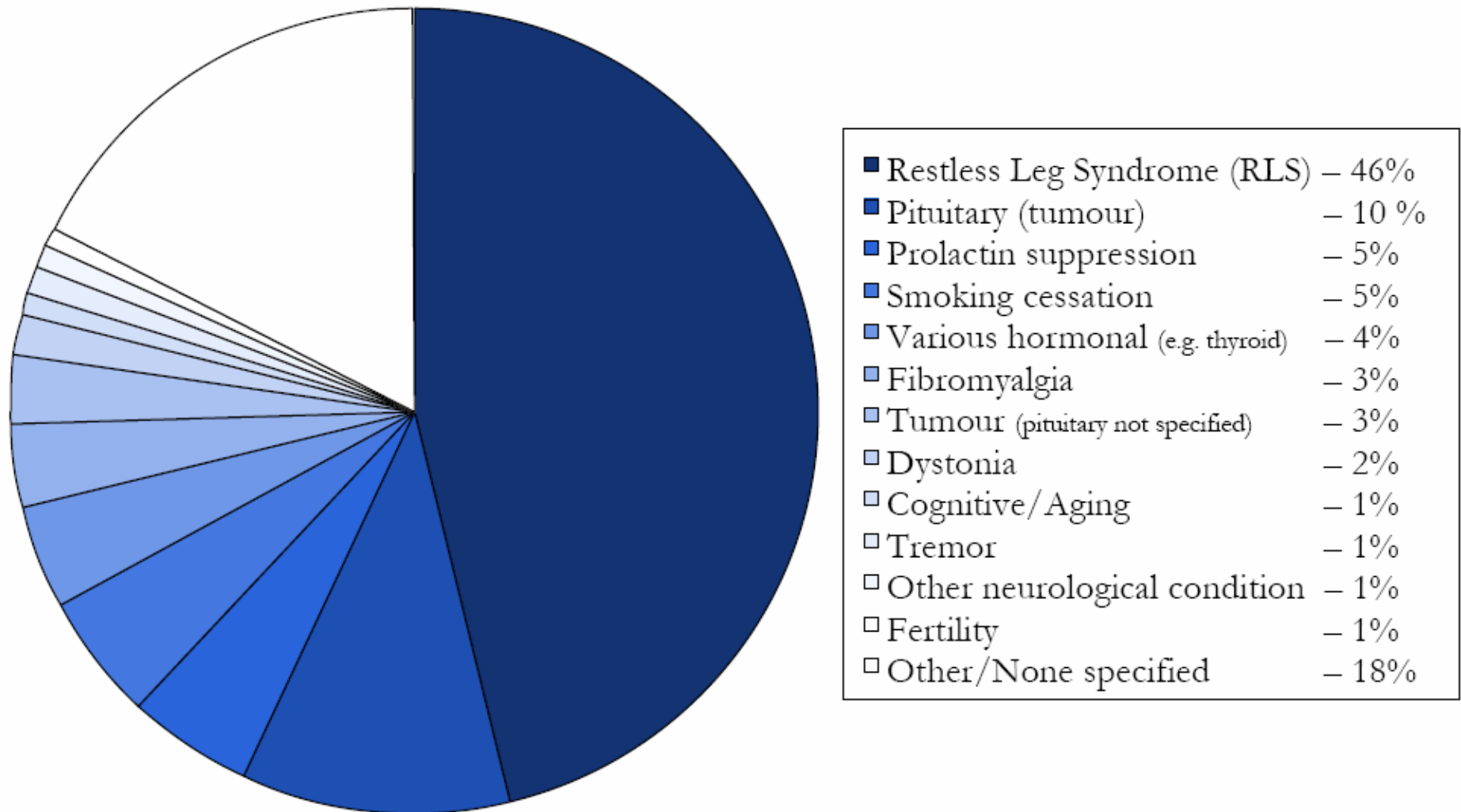
Drugs Use by Non-Cases

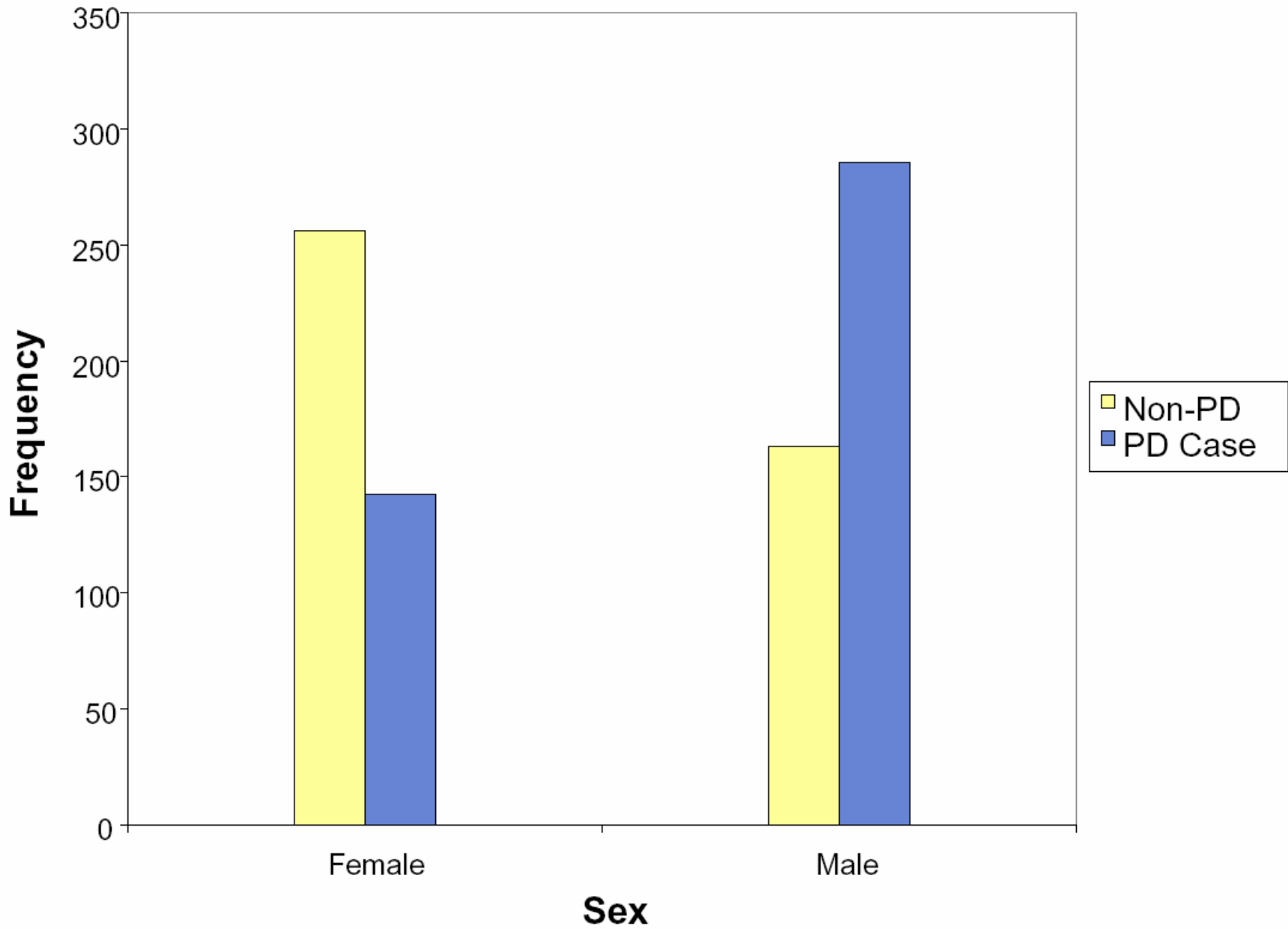
Drug use reported by 450 people reporting antiparkinsonian drug use but NOT Parkinson's disease:

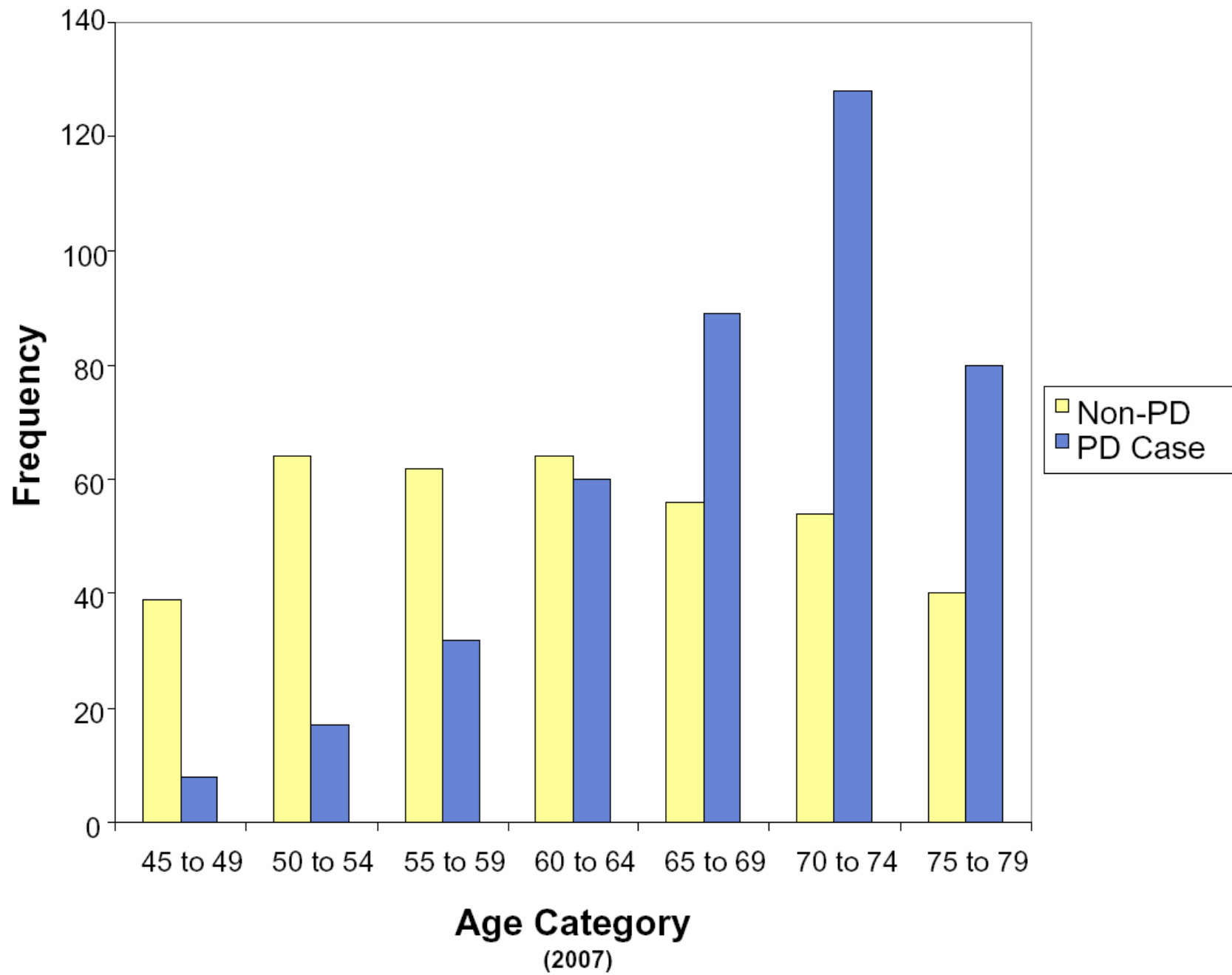
	Carbidopa-levodopa (Sinemet®)	Bromocriptine (Parlodel®)	Pergolide (Permax®)	Selegiline (Eldepryl®)
Number	171	143	30	29
Percentage	41%	34%	7%	7%

Results:

Chronic Conditions of Non-Cases







Interpretation

- Increasing diagnosis and treatment of Restless Leg Syndrome (RLS) may interfere with drug tracer estimates of Parkinson's prevalence.
- RLS unlikely to be a subtype of Parkinson's disease (distinct epidemiology).
- Future studies could:
 - Restrict tracer criteria to patients taking >1 anti-PD drug.
 - Validate traced cases with physician billing records?

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PD Study Team

Members:

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