

Polypharmacy and 1-year prognosis in a Rural and Remote Memory Clinic cohort

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INTRODUCTION

Polypharmacy

- Concurrent use of 5 or more medications
- Common in older adults and those with dementia
- **Impact on function, cognition is currently unclear**

Rural and Remote Memory Clinic (RRMC)

- Established in 2004 at Saskatoon, SK, Canada
- Rural, remote patients with cognitive concerns
- Average travel distance to clinic = 252km
- Patients are referred by primary care providers
- Assessment by a neurologist, neuropsych team, and physical therapist
- Follow up via telehealth

OBJECTIVE

To investigate the following relationship:

Number of medications at initial visit

1-year change in measures of cognition, function, and behaviour

- A previous 2016 RRMC study found that **56.4% of patients were on ≥ 5 medications** [1]

METHODS

Design:

Retrospective cohort, RRMC (Saskatchewan)

- Patients seen from 2004-2020

Sample:

582 with medication lists \rightarrow 321 participants analyzed

- **176 with dementia, 145 no dementia**

Exposure:

Total # of medications, continuous variable

Outcomes:

1-year change in **FAQ, MMSE, NPI-S/D, CDR-SB scores**

Models:

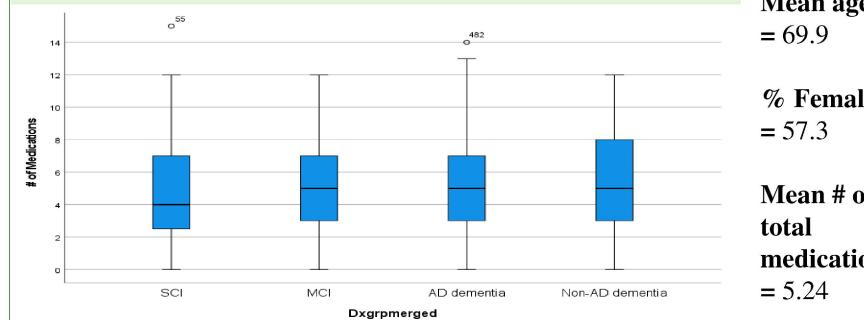
Univariable (only meds) and

Multivariable (meds, baseline FAQ score, age, sex, education)

Cognition	Function	Behaviour	Dementia Status	Medications
Mini Mental Status Exam (MMSE)	Functional Activities Questionnaire (FAQ)	Neuropsychiatric Inventory – Severity (NPI-S) And Distress (NPI-D)	Clinical dementia rating scale – sum of boxes (CDR-SB)	Prescribed (Rx) and Non-prescribed (Non-Rx)

RESULTS

Figure 1. Variance in number of total medications between groups



Total sample
Mean age = 69.9

% Female = 57.3

Mean # of total medications = 5.24

Outcome (1-year change)	Diagnostic grouping	n	B coefficient (slope)	95% CI	p value	R ²
FAQ score	Dementia – total meds	126	-0.429	-0.83 to -0.03	0.034	0.036
	Non-Dementia- total meds	94	0.119	-0.15 to 0.40	0.365	0.009

Figure 2. Univariable analysis of FAQ score for the dementia vs. non-dementia groups

- All other outcomes at 1-year (MMSE, NPI-S/D, CDR-SB) were NOT predicted by # of medications

DISCUSSION

- **Greater # of medications \rightarrow less functional decline over 1 year in dementia group**

- This result was **non-significant** after adjustment for baseline FAQ

Number of medications **did not** predict 1-year change in cognition, function, behaviour or global stage

- These results support targeted medication reviews rather than simple-count deprescribing in rural dwelling older adults with cognitive concerns

- Our findings are in contrast with Borda and colleagues, who found faster functional decline in those with polypharmacy than those without [2]

REFERENCES

- Verity, R., Kirk A, Morgan DG, Karunaratne C. Trends in Medication Use Over 11 Years in Patients Presenting to a Rural and Remote Memory Clinic. *Can J Neurol Sci.* 2016;43(6):815–818. doi:10.1017/cjn.2016.281
- Borda MG, Castellanos-Perilla N, Tovar-Rios DA, et al. Polypharmacy is associated with functional decline in Alzheimer's disease and Lewy body dementia. *Arch Gerontol Geriatr.* 2021;96:104459.

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