

Functional medication management in older adults living at home: a scoping review

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Conflict of interest

- We have no actual or potential conflict of interest in relation to this topic or presentation.

Functional medication management (FMM)

- Defined as having the ability to perform different steps related to medication.
- Regarded as one component of Instrumental Activity of Daily Living (IADL)



Functional medication management (FMM)

Functional ability	Steps
<ul style="list-style-type: none">• Physical:<ul style="list-style-type: none">Hand dexterityGrip strengthMuscle weaknessSwallowing abilities• Sensory:<ul style="list-style-type: none">VisionHearing• Cognition	<ul style="list-style-type: none">Ordering medicationsPicking up medicationsOrganizing medicationsPreparing medicationsAdministering medicationsMonitoring effect of medications

Research questions

What **functional** challenges do **older adults** experience administering their medications?

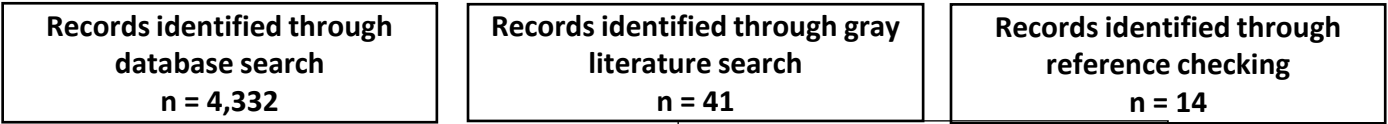
What **measures** are available to **assess functional medication management** in older adults

What **domains** of functional medication management are **assessed** by these measures?

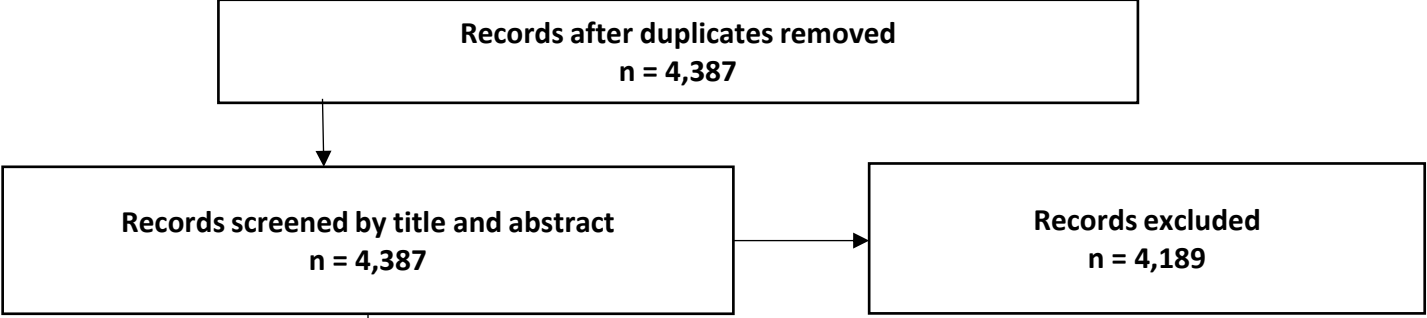
Finding Relevant Studies

	Inclusion criteria	Exclusion criteria
Study Design	No restriction	None
Setting	Must occur within the home/self-administration	If administered by caregiver If administered in care facility, hospital, nursing home.
Participant/population	Age 65+ years old	Under the age of 65 years old Cognitive impairment
Intervention/exposure	Functional challenges or any measure assessing functional medication management	
Outcomes	Impact of physical functional challenges	None

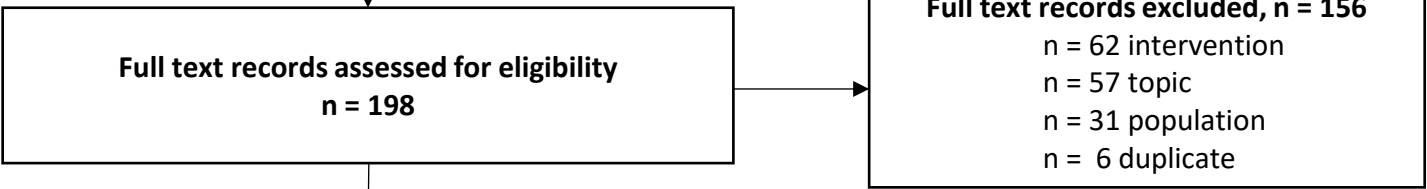
IDENTIFICATION



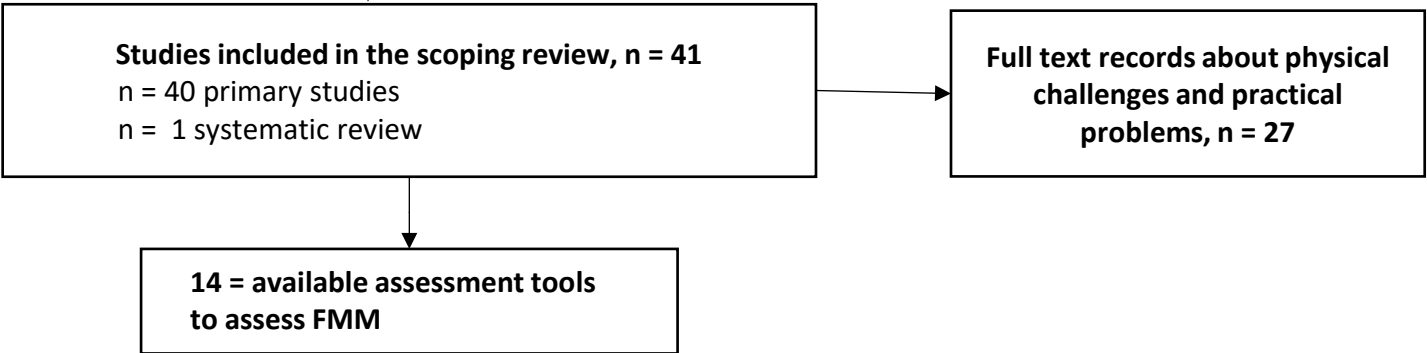
SCREENING



ELIGIBILITY



INCLUDED



Results

- **Year of publication**

- 23 2000-2010
- 18 2010-2018

- **Study design**

- 19 Cross sectional design
- 8 Qualitative study design
- 6 Randomized controlled trial
- 5 Prospective cohort
- 2 Clinical trials
- 1 Systematic review
- 1 Case control

Types of functional challenges



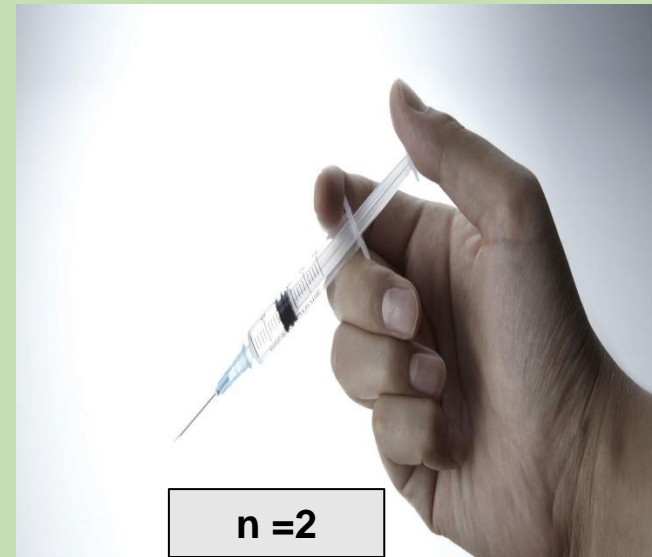
n = 11



n = 4

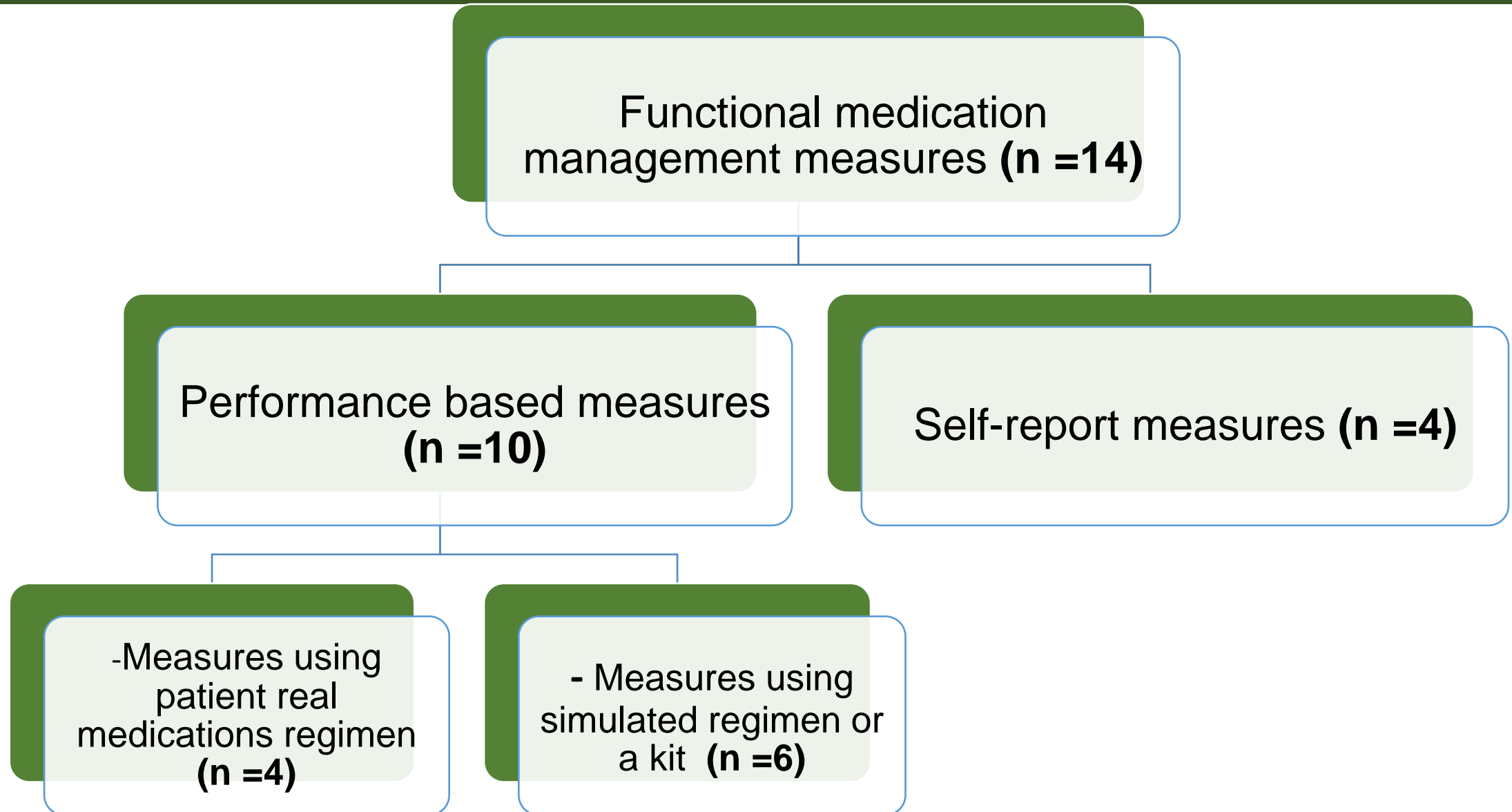


n = 10



n = 2

Measures of Functional Medication Management



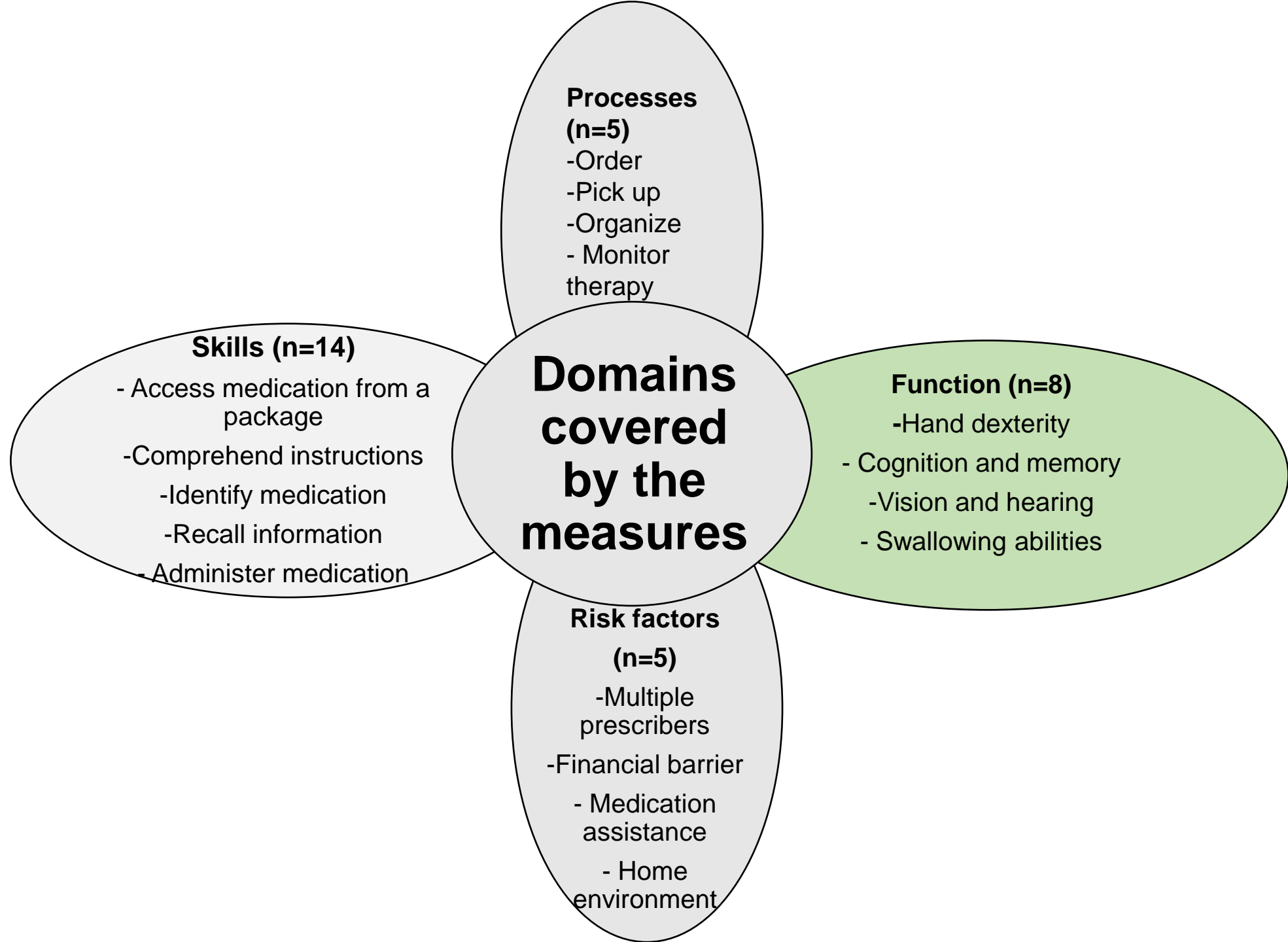
Measures of functional medication management

Performance based measures

- Drug Regimen Unassisted Grading Scale (DRUGS)
- Medication Management Instrument Deficiencies in the Elderly (MedMaIDE)
- MedTake Test
- In-Home Medication Management Performance Evaluation (HOME-Rx)
- Hopkins Medication Schedule (HMS)
- Medication Management Ability /Administration Assessment (MMAA)
- ManageMed Screening
- Medication Management Performance Tests (MMPT)
- Medication Regimen Adherence Capacity Test
- Medication Management Evaluation instrument (MMEI)

Self-report measures

- Medication Management Capacity questionnaire (MMC)
- Practical Drug Management Capacity Questionnaire
- Medication knowledge and skills assessment questionnaire
- Medication Assessment Tool



Summary

- Older adults experience many functional challenges with medications.
- Measures were not robust.
- Although measures cover different domains; one domain in particular, **function**, was not assessed extensively .

Acknowledgments and Funding

Acknowledgements

- Mark Makowsky, BSP, PharmD
- Liza Bialy, BSc, MPH
- Robin Featherstone, MLIS

This project is funded, in part, by

- Alberta SPOR SUPPORT Unit KT Platform
- Faculty of Pharmacy and Pharmaceutical Sciences at University of Alberta

References

- Bolina M, C. Jones A, Koshman S, Heintz E, Sadowski C. Documentation of Functional Medication Management in Older Adults: A Retrospective Chart Review in Acute Care Hospitalization. *Drugs - Real World Outcomes*. 2016; 3(4), 401-407
- Giannotti C, Nencioni A, Odetti P, Monacelli F. Medication management ability in older patients: time for a reappraisal. *Journal of the Italian Society of Gerontology and Geriatrics*. 2019;67:8-12
- Beckman A, Bernsten C, M Parker, M Thorslund, J Fastbom. The Difficulty of Opening Medicine Containers in Old Age: A Population-Based Study. *Pharmacy World and Science*. 2005; 27 (5), 393–398
- LAKEY SL, GRAY SL, BORSON S, MONSANTO HA, MALLET L. Assessment of Older Adults' Knowledge of and Preferences for Medication Management Tools and Support Systems. *Ann Pharmacother* 2009(6):1011.
- Orwig D, Brandt N, Gruber-Baldini A. Medication Management Assessment for Older Adults in the Community. *Gerontologist* 2006;46(5):661-668.
- RAEHL CL, BOND CA, WOODS T, PATRY RA, SLEEPER RB. Individualized drug use assessment in the elderly. *Pharmacotherapy* 2002(10):1239.
- Murphy MC, Somerville E, Keglovits M, Hu Y-, Stark S. In-home medication management performance evaluation (HOME-Rx): A validity study. *American Journal of Occupational Therapy*. 2017; 71(4).
- Carlson MC, Fried LP, Xue Q, Tekwe C, Brandt J, Carlson MC, et al. Validation of the Hopkins Medication Schedule to identify difficulties in taking medications. *J Gerontol A Biol Sci Med Sci* 2005 02;60(2):217-223.
- Hutchison LC, Jones SK, West DS, Wei JY. Assessment of medication management by community living elderly persons with two standardized assessment tools: A cross-sectional study. *American Journal of Geriatric Pharmacotherapy* 2006;4:144-153.
- ROBNETT RH, DIONNE C, JACQUES R, LACHANCE A, MAILHOT M. The managed screening: An interdisciplinary tool for quickly assessing medication management skills. *Clin Gerontol* 2007(4):1.
- Beckman AGK, Parker MG, Thorslund M. Can elderly people take their medicine? *Patient Educ Couns* 2005; 59:186-191.
- MacLaughlin EJ, Raehl CL, Treadway AK, Sterling TL, Zoller DP, Bond CA,. Assessing Medication Adherence in the Elderly: Which Tools to Use in Clinical Practice? *Drugs Aging* 2005(3):231.
- Elliott Rohan A, Marriott Jennifer L. Standardised assessment of patients' capacity to manage medications: a systematic review of published instruments. *BMC Geriatrics*. 2009; 9:27.
- SINO CGM, SIETZEMA M, EGBERTS TCG, SCHUURMANS MJ. Medication Management Capacity in Relation to Cognition and Self-Management Skills in Older People on Polypharmacy. *J Nutr Health Aging* 2014(1):44.
- MEHUYS E, DUPOND L, PETROVIC M, CHRISTIAENS T, VAN BORTEL, L., ADRIAENS E, et al. Medication Management among Home-Dwelling Older Patients with Chronic Diseases: Possible Roles for Community Pharmacists. *J Nutr Health Aging* 2012(8):721.
- Hope CJ, Wu JW, Tu WZ, Young J, Murray MD. Barriers to adherence in elderly heart failure patients. *Drug Inf J* 2004;38(4):331-340.
- Jennings-Sanders A. Examining medication knowledge and behavior of older African-American adult day care clients. *J Natl Black Nurses Assoc*. 2001;12(2):23-29.

Thank you

Arksey and O'Malley Scoping Review methods

Stage 1

- **Development of the research question**

Stage 2

- **Identifying relevant studies**

Stage 3

- **Screening and selection of publications**

Stage 4

- **Charting the data**

Stage 5

- **Collating, summarizing, and reporting the results**