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

Hadeel Abed, B.Sc. Pharm

Supervisors:
Cheryl A Sadowski, PharmD, Faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta.
C. Allyson Jones, PT PhD, Faculty of Rehabilitation Medicine, University of Alberta
• 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)

Bolina et al, Drugs: Real World Outcomes - 2016
# Functional medication management (FMM)

<table>
<thead>
<tr>
<th>Functional ability</th>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical:</td>
<td>Ordering medications</td>
</tr>
<tr>
<td>Hand dexterity</td>
<td>Picking up medications</td>
</tr>
<tr>
<td>Grip strength</td>
<td>Organizing medications</td>
</tr>
<tr>
<td>Muscle weakness</td>
<td>Preparing medications</td>
</tr>
<tr>
<td>Swallowing abilities</td>
<td>Administering medications</td>
</tr>
<tr>
<td>Sensory:</td>
<td>Monitoring effect of medications</td>
</tr>
<tr>
<td>Vision</td>
<td></td>
</tr>
<tr>
<td>Hearing</td>
<td></td>
</tr>
<tr>
<td>Cognition</td>
<td></td>
</tr>
</tbody>
</table>

Bolina et al, Drugs: Real World Outcomes-2016
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

<table>
<thead>
<tr>
<th></th>
<th>Inclusion criteria</th>
<th>Exclusion criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study Design</strong></td>
<td>No restriction</td>
<td>None</td>
</tr>
<tr>
<td><strong>Setting</strong></td>
<td>Must occur within the home/self-administration</td>
<td>If administered by caregiver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If administered in care facility, hospital, nursing home.</td>
</tr>
<tr>
<td><strong>Participant/population</strong></td>
<td>Age 65+ years old</td>
<td>Under the age of 65 years old</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cognitive impairment</td>
</tr>
<tr>
<td><strong>Intervention/exposure</strong></td>
<td>Functional challenges or any measure assessing functional medication management</td>
<td></td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td>Impact of physical functional challenges</td>
<td>None</td>
</tr>
</tbody>
</table>
Records identified through database search: n = 4,332

Records identified through gray literature search: n = 41

Records identified through reference checking: n = 14

Records after duplicates removed: n = 4,387

Records screened by title and abstract: n = 4,387

Records excluded: n = 4,189

Full text records assessed for eligibility: n = 198

Full text records excluded: n = 156
  - Intervention: n = 62
  - Topic: n = 57
  - Population: n = 31
  - Duplicate: n = 6

Studies included in the scoping review: n = 41
  - Primary studies: n = 40
  - Systematic review: n = 1

Full text records about physical challenges and practical problems: n = 27

Available assessment tools to assess FMM: n = 14
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 = 10
- n = 4
- n = 2
Measures of Functional Medication Management

Functional medication management measures (n = 14)

Performance based measures (n = 10)
- Measures using patient real medications regimen (n = 4)

Self-report measures (n = 4)
- Measures using simulated regimen or a kit (n = 6)
### Measures of functional medication management

<table>
<thead>
<tr>
<th>Performance based measures</th>
<th>Self-report measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Drug Regimen Unassisted Grading Scale (DRUGS)</td>
<td>• Medication Management Capacity questionnaire (MMC)</td>
</tr>
<tr>
<td>• Medication Management Instrument Deficiencies in the Elderly (MedMaIDE)</td>
<td>• Practical Drug Management Capacity Questionnaire</td>
</tr>
<tr>
<td>• MedTake Test</td>
<td>• Medication knowledge and skills assessment questionnaire</td>
</tr>
<tr>
<td>• In-Home Medication Management Performance Evaluation (HOME-Rx)</td>
<td>• Medication Assessment Tool</td>
</tr>
<tr>
<td>• Hopkins Medication Schedule (HMS)</td>
<td></td>
</tr>
<tr>
<td>• Medication Management Ability /Administration Assessment (MMAA)</td>
<td></td>
</tr>
<tr>
<td>• ManageMed Screening</td>
<td></td>
</tr>
<tr>
<td>• Medication Management Performance Tests (MMPT)</td>
<td></td>
</tr>
<tr>
<td>• Medication Regimen Adherence Capacity Test</td>
<td></td>
</tr>
<tr>
<td>• Medication Management Evaluation instrument (MMEI)</td>
<td></td>
</tr>
</tbody>
</table>
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.
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


• Orwig D, Brandt N, Gruber-Baldini A. Medication Management Assessment for Older Adults in the Community. Gerontologist 2006;46(5):661-668.


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