Evidence voor medicatiebeoordelingen

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Disclosures

- Grants from ZonMW, KNMP and NUFFIC.
- No other conflict of interest

Medication reviews

Kaders in NL:
- Multidisciplinaire Richtlijn Polyfarmacie bij ouderen (NHG)
- KNMP-richtlijn Medicatiebeoordeling

Implementatie slepend

Evidence that medication reviews work?

![Cochrane Library — Cochrane Database of Systematic Reviews]

Medication review in hospitalised patients to reduce morbidity and mortality (Review)

Christensen M, Lundh A

10 RCTs (3575 participants)

- all-cause mortality RR 1.0, 95% CI 0.9-1.2
- hospital readmissions RR 1.0, 95% CI 0.9-1.0
- RR 0.7; 95% CI 0.5 - 1.0: 27% relative reduction in emergency department contacts

Medication reviews for nursing home residents to reduce mortality and hospitalization: systematic review and meta-analysis

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Meta-analyses of 7 RCTs
- mortality RR 1.03 (95% CI 0.85–1.23, 5 trials)
- hospitalization RR 1.07 (95% CI 0.61–1.87, 2 trials)

Medication review and reconciliation with cooperation between pharmacist and general practitioner and the benefit for the patient: a systematic review

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3/9 studies significant decrease in hospital (re)admissions
1/9 studies increase in hospital (re)admissions
Majority of studies show positive results on:

- Satisfaction of patients and health care professionals
- Decrease in number of drug-related problems/improved quality of prescribing
- Important for success: cooperation between healthcare providers

Possible explanations

- Medication reviews really do not work
- Medication reviews do work, but
  - Interventions not carried out
  - Too much variation how medication reviews, only some types of medication reviews work
  - Wrong target group included, patients with few medication related problems
  - Outcome measures not suitable/appropriate

Complex health care interventions are complex to evaluate

BMJ Open Discontinuing Inappropriate Medication in Nursing Home Residents (DIM-NHR Study): protocol of a cluster randomised controlled trial

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Aim: To examine whether multidisciplinary medication reviews in nursing home residents

- effectively optimise prescribing by considering overprescribing and underprescribing
- reduce harm
- are cost effective

Study design

- Cluster randomised controlled trial
- Inclusion criteria:
  - Wards: long stay wards
  - Patients: life expectancy of >4 months

- Inclusion of 420 patients

Intervention

Multidisciplinary multistep medication review (3MR)

5-step approach based on NHG and KNMP:

Step 1: Pharmacotherapeutic anamnesis

Step 2: Pharmacotherapeutical analysis: partly electronic check using accepted criteria and clinical knowledge

Step 3: Multidisciplinary meeting

Step 4: Pharmaceutical action plan

Step 5: Follow-up

Available as toolbox after completion of the project

Outcome measures

- Primary outcome: Difference in proportion of residents who successfully discontinued inappropriate medication between the intervention and control group.
- Secondary outcomes:
  - Changes in medication: start, change in dose, switch, DBI
  - Quality of life (EQ5D-3L, DQI)
  - Cognitive function:
    - Severe Impairment Battery (SIB)
    - Mini Mental Stage Examination (MMSE)
  - Neuropsychiatric symptoms: Neuropsychiatric Inventory (NPI)

KNMP

Aim: To evaluate whether a Multidisciplinary Multistep Medication Review (3MR) is an effective intervention to reduce a patient's Drug Burden Index (DBI)

- Drug Burden Index: to calculate load for medications with anticholinergic and sedative effects

$$DBI = \Sigma \frac{D}{D+\delta}$$

(Hilmer et al, 2007)

D: daily dose of the medication
δ: minimum recommended daily dose

Methods

- RCT of 3MR in community pharmacies in Groningen
- Inclusion criteria:
    - 65 years and older, living at home
    - DBI $\geq$ 1
    - Polypharmacy (5 $\geq$ medications), ATC N05/ N06
- Primary outcome: Difference in proportion of patients with decrease of DBI $\geq$ 0.5 at 3 months follow-up
- Secondary outcomes: Cognitive function, risk of falls, sedative/anticholinergic side effects, quality of life, activities of daily living

Results

28.9% response

Total: 157 patients
4.3% drop-out
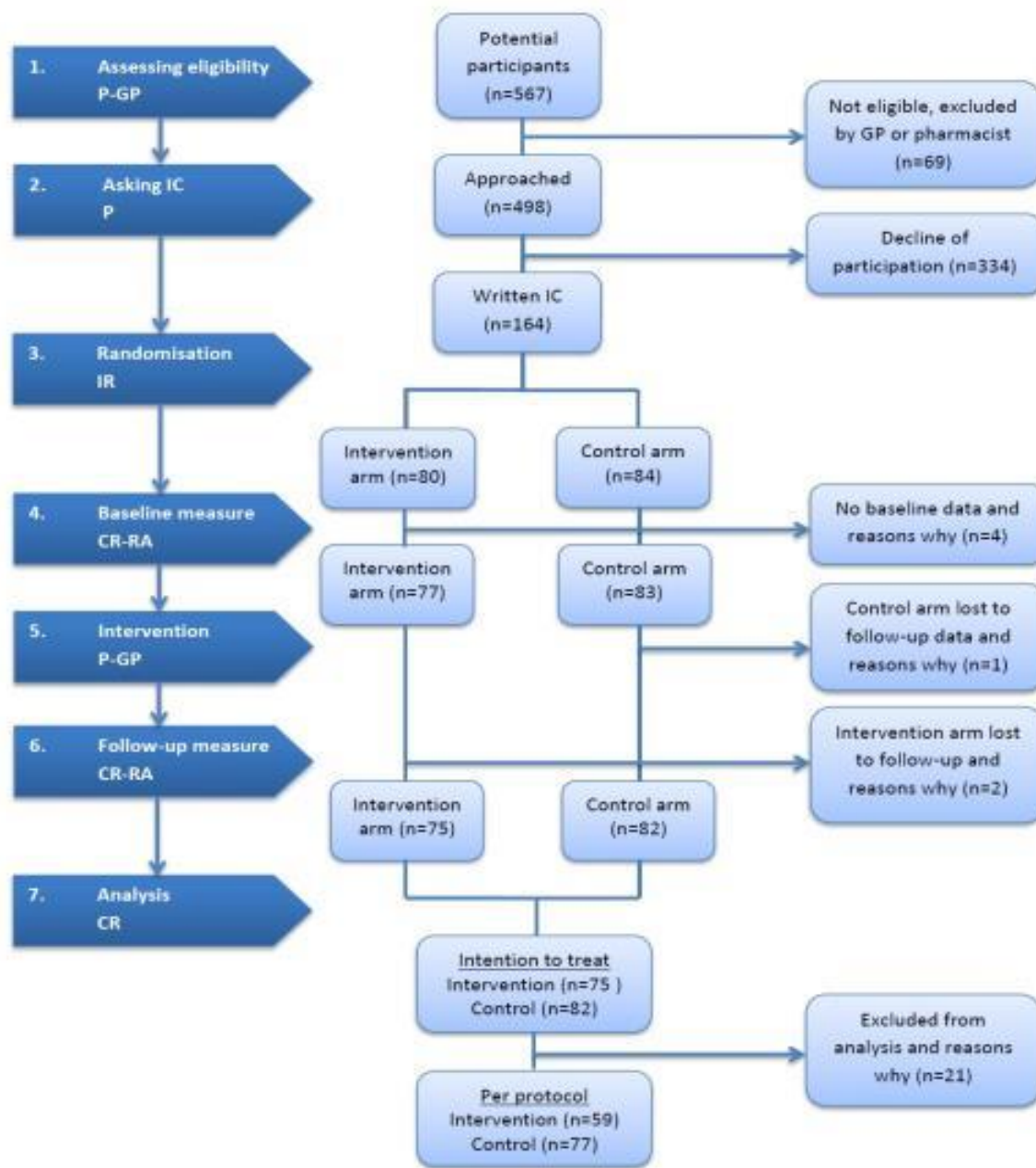
Patient characteristics

Characteristic at baseline	Intervention (n=75)	Control (n=82)
Age [years]	75 (6.8)	77 (6.7)
Sex [female]	70%	72%
Mean number of medicines	8.4 (2.3)	9.3 (3.3)
Mean DBI	2.6 (1.0)	2.6 (0.9)

Primary outcome

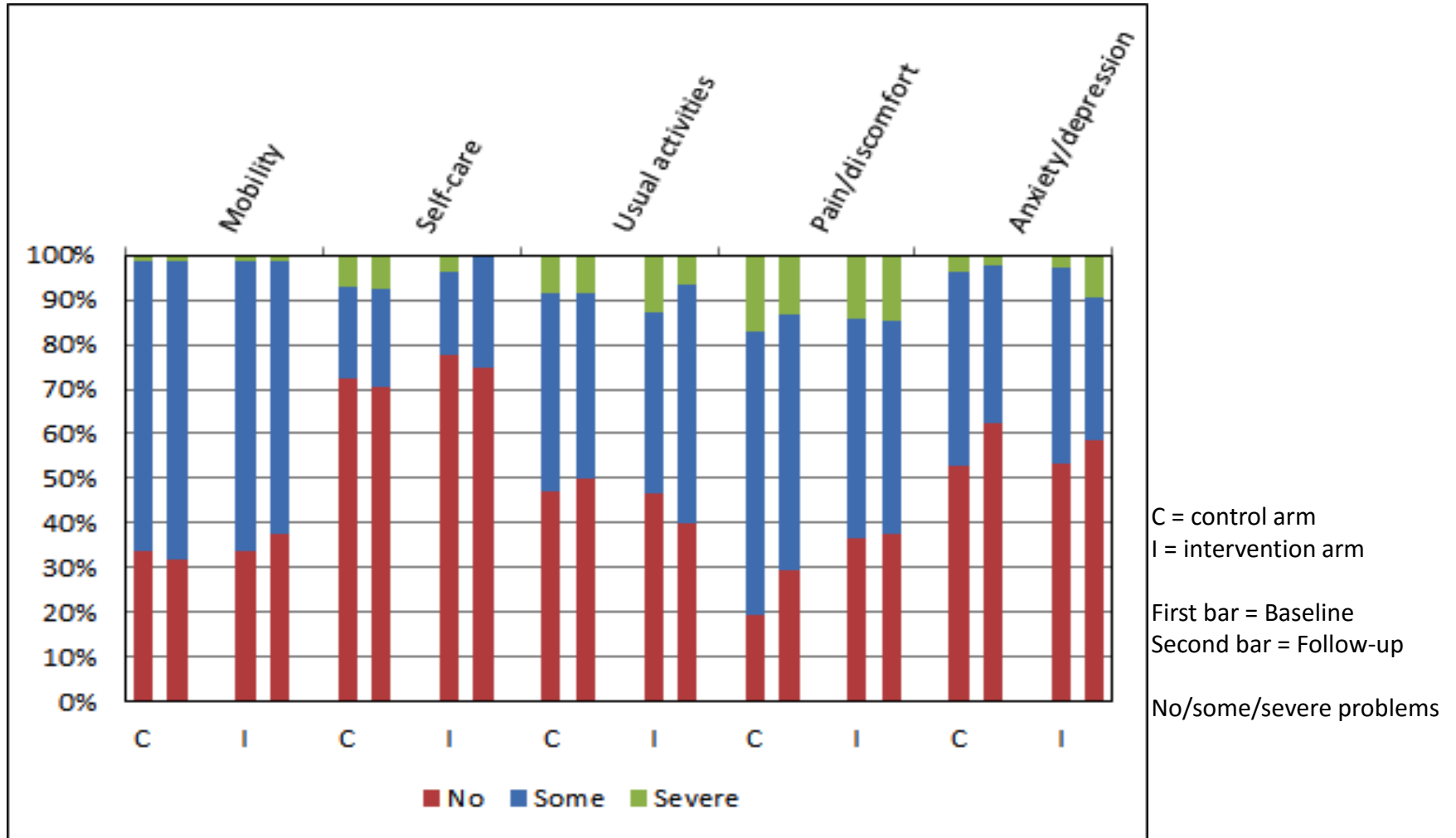## % patients having a decrease in DBI ≥ 0.5

	Intervention	Control	OR (95% CI)	P value
Intention to treat (n=157)	14.7%	15.9%	0.91 [0.38-2.18]	0.8
Per protocol (n=136)	15.2%	16.8%	0.88 [0.35-2.24]	0.8

Multilevel logistic regression

Results - Secondary outcomes

	Values at baseline		Difference
	Intervention (n=75)	Control (n=82)	P-value
UKU: Total[†]	21.4 (16.3)	23.4 (19.7)	> 0.05
Sedative side effects[†]	3.1 (2.9)	2.7 (2.3)	0.002
GARS[†]	30.5 (11.0)	31.1 (12.4)	> 0.05
EQ-VAS[†]	6.4 (1.8)	6.7 (1.4)	> 0.05
7 MS: orientation[*]	0.0 (106.0)	0.0 (43.0)	> 0.05
7MS: recall (total)[†]	14.9 (2.0)	15.3 (1.2)	> 0.05
7MS: clock[†]	6.2 (1.1)	6.3 (1.2)	> 0.05
7MS: verbal fluency[†]	15.9 (5.4)	15.9 (5.0)	> 0.05
DSST[†,°]	35.9 (13.4)	36.5 (13.5)	> 0.05
Trail making A[†]	1:07 (0:29)	1:05 (0:27)	> 0.05
Trail making B[†,°]	3:06 (1:49)	2:59 (1:44)	> 0.05
Up&Go	8/61/6	9/65/8	> 0.05

Quality of Life: EQ-5D

C = control arm
I = intervention arm

First bar = Baseline
Second bar = Follow-up

No/some/severe problems

Conclusion

- Multidisciplinary multistep medication reviews not effective in reducing the Drug Burden Index (DBI).

- DBI a good tool to identify vulnerable high risk patients.

- Prospective monitoring of patients to prevent high load of anticholinergic/sedative medication.

- The future of medication reviews in primary care?
  - Develop target criteria
  - Use a tailored approach

Acknowledgements

Dr Hans Wouters
Dr Elise Quik
Prof Sytse Zuidema
Dr Froukje Boersma
Heleen van der Meer
all members of the the DimNHR study group

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