

doMESTIC RISK – Development of a quantitative assessment tool for the identification of home care patients at risk for drug related problems



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BACKGROUND

The request for home care services is increasing in Switzerland due to

- the demographic development,
- shift from inpatient to ambulatory care
- and patients desire to stay at home as long as possible.

RESULTS

1. Literature review and subsequent Delphi process

Core review question:

"Which risk factors where identified, when clinical pharmacy-interventions in the home care setting took place?»

- n=311 initial hits in Pubmed, n=158 in EMBASE
- Abstracts screened: n=114/n=29

Compared to inpatients, drug-related problems (DRPs) are much more common in patients in the home care setting.¹ Consequently, improvements in medication safety are urgently needed.

Due to limited resources in the public health system, the optimal and economical use of resources is of particular importance.

Those clients who are at the highest risk for DRPs should be prioritized for pharmaceutical interventions.

OBJECTIVES

Based on Home Care specific risk factors for medication safety, a **risk tool for the** identification of vulnerable high-risk patients for DRPs was

- developed,
- optimized and

• Full texts included: n=21

Delphi process with 15 experts from medicine, pharmacy, nursing Task: prioritization of 73 potential risk factors (derived from the literature) in a structured Excel®-sheet

2. Assessment tool "doMESTIC RISK"

The final, optimized risk assessment tool consists of 10 weighted risk factors, displayed in Table 1.

| Abbreviation | Score | Risikfactors | | | |
|----------------------------|----------|---|--|--|--|
| S8 | 1 point | Home-bound in combination with - cognitive problems or | | | |
| | | lacking social support | | | |
| G4 | 2 points | Frequently changing providers or several prescribers at the same time | | | |
| G15 | | (e.g., hospitals, rehab, primary care provider, specialist) | | | |
| G11 | 1 point | t hospital discharge to home care | | | |
| DIA7 | 2 points | _imited renal function (GFR < 30ml/min) | | | |
| V3 | 2 points | Number of medications ≥ 7 | | | |
| M1 M9 M24 | 1 point | High-risk medications or medication groups or medications with a narrow therapeutic range (e.g. neuroleptics specifically lithium, digoxine, amiodarone and other antiarrhythmics, phenobarbital, carbamazepine, oral anticoagulants specifically phenprocoumone, DOACs, insuline, methotrexate, theophylline, etc.) and/or ≥ 3 medications with effects on the central nervous system | | | |
| | | (centrally active analgesic drugs, antinevchotic drugs, antiepressants, henzodiazenines) | | | |
| M3 | 3 points | Potentially inadequate medication for the elderly (z.B. Priscus®-Liste) | | | |
| M23 | 3 points | Duplicate prescription of a specific substance (e.g., generic and original product) | | | |
| DIA13 AG5 MM12 S4 | 1 point | Patient – limited comprehension of therapy and/or illness, limited medication literacy (cognitive impairement and/or communication difficulties, e.g., foreign language, hearing problems) | | | |
| MM9 MM10 | 1 point | Non-adherence/lacking compliance (e.g., incorrect medication administration) and/or self-medication without provider knowledge | | | |

• piloted.

METHODS

- 1. In a structured literature search in PubMed and EMBASE, risk factors were sought for medication safety in home care.
- 2. As part of a **Delphi process**, the risk factors found in the literature review as well as factors from a 1st Delphi round were assessed by a panel of 15 experts from pharmacy, nursing and medicine for their relevance in identifying patients at risk for DRPs, using a 7-point scale.
- **3. Validation:** The resulting tool was applied to a patient population of 150 patients aged >64 years and treated with ≥4 prescribed drugs during a pilot

Table 1: doMESTIC RISK – 10-item assessment tool for DRPs in home care patients

Item categories: D=demographic information, S=social situation, G=provision of care, D=diagnosis, V=prescription, AG=age-related health problems, M=therapeutic class, MM=medication management

Recommendations for use

- Interprofessional completion (nursing, pharmacy) of the tool
- High-risk cut-off value: 5 points

3. Statistical validation

| Figure 1: Corre | The Spearman rank | | | | |
|-----------------|-------------------|-------------------------|---------------------|---------------------------|--|
| | | | TOTALRisikot ool | Anzahlpotent ielleDRPs | correlation yielded a positive correlation |
| Spearman_Pho | TOTAL Risikotool | Korrelationskoeffizient | 1 000 | 314* | coefficient rSp(50)=.31. |

study. Based on a structured medication analysis, the tool was analyzed with regard to the correlation between the number of score points from the risk tool and the number of potential DRPs identified by a clinical pharmacist,

using Spearman rank correlation and multiple regression analysis.

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CONCLUSIONS

- The results showed that the developed risk tool was statistically significant in identifying patients at high-risk for DRPs.
- In order to establish the tool's benefits, further tests well be conducted in a bigger study population in the scope of the me@home project (NFP74).
- Furthermore, concrete models of pharmacy care must be worked out as to how the risk tool could be integrated into the medication use process in the home care setting.