Content validation of a modified translated version of the medication discrepancy tool

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Moving patient between different health care settings is a high risk period for medication related problems

27%–54% patients had at least 1 medication history error - 19%–75% unintentional discrepancies

14% patients have 1 or more unexplained medication discrepancy after discharge at home

Medication errors/patients were: 2,4 at admission and 1,8 at discharge

Tam 2005
Coleman 2005
Midlöv 2005
Background

Unintentional medication discrepancies are:
- unexplained differences among documented regimens across different sites of care
- medication errors related to the transfer of patients between different settings of care
### Medication Discrepancy Tool (MDT)

MDT is designed to facilitate reconciliation of the medication regimen across settings and prescribers.

#### Medication Discrepancy Event Description

Complete one form for each discrepancy.

#### Causes and Contributing Factors—check all that apply

**Patient Level**

- □ 1. Adverse drug reaction or side effects
- □ 2. Intolerance
- □ 3. Didn't fill prescription
- □ 4. Didn't need prescription
- □ 5. Money/financial barriers
- □ 6. Intentional nonadherence
  
  "I was told to take this but I choose not to."
- □ 7. Nonintentional nonadherence (e.g., knowledge deficit)
  
  "I don't understand how to take this medication."
- □ 8. Performance deficit
  
  "Maybe someone showed me, but I can't demonstrate to you that I can."

**System Level**

- □ 9. Prescribed with known allergies/ intolerances
- □ 10. Conflicting information from different informational sources
  
  For example, discharge instructions indicate one thing and pill bottles say another.
- □ 11. Confusion between brand and generic names
- □ 12. Discharge instructions incomplete/inaccurate/illegible
  
  Either the patient can't make out the handwriting or the information is not written in legible terms.
- □ 13. Duplication
  
  Taking multiple drugs with the same action without any rationale.
- □ 14. Incorrect dosage
- □ 15. Incorrect quantity
- □ 16. Incorrect label
- □ 17. Cognitive impairment not recognized
- □ 18. No caregiver/need for assistance not recognized
- □ 19. Sight/dexterity limitations not recognized

#### Resolution—check all that apply

- □ Addressed to stop medication taking/change the way in which medications are administered
- □ Discussed potential benefits and the harm that may result from nonadherence
- □ Encouraged patient to call PCP/specialist about problem
- □ Encouraged patient to schedule an appointment with PCP/specialist to discuss problem
- □ Encouraged patient to talk to pharmacist about problem
- □ Addressed performance/knowledge deficit
- □ Provided resource information to facilitate adherence
- □ Other __________________________
Background

Limitation of MDT

- Inter-rater reliability was modest (Kappa=0,56)

\[
0.81 \geq K \geq 1.00 : \text{excellent} \\
0.61 \geq K \geq 0.80 : \text{good} \\
0.41 \geq K \geq 0.60 : \text{fair} \\
K \leq 0.40 : \text{poor}
\]


Solution?

- Addition of detailed specifications, definitions & examples
Objectives

Improve inter-rater reliability of the instrument with definitions and examples

⇒ New content validation of the instrument
Design

1. Translation of MDT in French
2. Addition of specifications based on
   - MDT’s authors specifications
   - Literature review
   - Local adaptation
3. Content validation

Two-stage process [*] :

- Development-stage: literature review to determine if additional items or sections should be included
- Judgment quantification stage: recruitment of a panel of experts to assess different aspects of the content of the tool

=> questionnaire sent by mail

Participants have to rate on scales different content aspects:

- **Clarity**
  - 1: Not at all clear
  - 2: Somewhat clear
  - 3: Mostly clear
  - 4: Very clear

- **Representativeness**
  - 1: Not at all repr.
  - 2: Somewhat repr.
  - 3: Mostly repr.
  - 4: Very repr.

- **Uniqueness**
  - 1: Yes
  - 2: No

- **Helpfulness**
  - 1: Not at all help.
  - 2: Somewhat help.
  - 3: Mostly help.
  - 4: Very help.

- **Completeness**
  - 1: Yes
  - 2: No
Design

Determination of the Content Validity Index (CVI)

CVI = proportion of members who endorsed an element as content valid at item-(I-CVI) and tool-level (S-CVI) \( \rightarrow \) CVI \( \geq 0.78^{[1]} \)

Determination of Average deviation mean index (ADm) to evaluate inter-rater agreement\(^{[2]}\)

\( \rightarrow \) I-CVI, S-CVI, ADm and free comments to determine items to revise or to discard and items to add to the instrument.

A second round was conducted to assess modifications of the instrument resulting from the first validation round

## Design

### Content validation of the item «incorrect label »

<table>
<thead>
<tr>
<th>NAME OF ITEM</th>
<th>REPRESENTATIVENESS OF ITEM (n = 11)</th>
<th>CLARITY OF THE NAME OF ITEM (n=11)</th>
<th>CLARITY OF DEFINITION (n=11)</th>
<th>UNIQUENESS OF ITEM (n=11)</th>
<th>COMMENTS OF EXPERTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incorrect label</td>
<td>0 0 3 8</td>
<td>1 0 3 7</td>
<td>1 1 0 9</td>
<td>5 6</td>
<td></td>
</tr>
<tr>
<td>CVI</td>
<td>1</td>
<td>0,9</td>
<td>0,81</td>
<td>0,45</td>
<td></td>
</tr>
<tr>
<td>ADm (p-value)</td>
<td>0,39 (0,02)</td>
<td>0,69 (0,1)</td>
<td>0,74 (0,16)</td>
<td>0,49 (1)</td>
<td></td>
</tr>
</tbody>
</table>

n: number of participants
Setting

1st round: 11 health care professionals (HCPs) (nurse, doctors and pharmacists) interested in the field of patient transfer or having clinical experience in managing patient transition

2nd round: 3 HCPs (nurse, doctor, and pharmacist)
Results

1. Translation of the instrument in French
2. Addition of specification
   ✓ Definition to each section
   ✓ Definition + example to item
   ✓ Addition of example describing the use of the tool
3. Content validation
   3.1. Development-stage
       ✓ 45 items included in 3 sections

- Type of unintentional medication discrepancy identified
  e.g.: omission, frequency of administration
- Cause at patient level
  e.g.: financial barriers, self-medication
- Cause at system level
  e.g.: instruction to patient inaccurate/incomplete/illegible,
       instruction to doctor inaccurate/incomplete/illegible
- Intervention to solve medication discrepancy
  e.g.: advise the patient to refer to an HCP
3.2. Judgment quantification stage

- Sections: CVI ≥ 0.78 & ADm NS for clarity of definition of “intervention”
- Items

<table>
<thead>
<tr>
<th>Content aspect</th>
<th>Number of item with CVI ≥ 0.78</th>
<th>ADm Stat.Signif. (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representativeness</td>
<td>42/45</td>
<td>41/45</td>
</tr>
<tr>
<td>Clarity of name</td>
<td>43/45</td>
<td>36/45</td>
</tr>
<tr>
<td>Clarity of definition</td>
<td>32/32</td>
<td>27/32</td>
</tr>
<tr>
<td>Helpfulness of example</td>
<td>24/25</td>
<td>11/25</td>
</tr>
<tr>
<td>Uniqueness of item</td>
<td>31/45</td>
<td>21/45</td>
</tr>
</tbody>
</table>

- Completeness: 2 items suggested for section « intervention »
Results

- Modification resulting from the first round:
  - Modification of definitions of the three sections modified
  - 9 items pooled with another item
  - 2 items added
  - 30 items modified at title-, definition- or example-level

- Validation of modifications during the second round:
  S-CVI accepted
Conclusion

Content validation of the modified translated MDT was realized.

Next objective: calculate the inter-rater reliability of this new version of the instrument
Thank you for your attention

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