What Patients Think Doctors Know: Beliefs About Provider Knowledge as Barriers to Safe Medication Use

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Acknowledgements:

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Background

• One half of all US adults take daily prescription medications

• Medication non-adherence, misunderstanding and misuse are extremely common

• Patients at highest risk for adverse medication events are older adults and those with low health literacy
Background

Safe medication use starts at the point of prescribing and depends on:

1) *Patient* disclosure of all medications in their regimen to the physician

2) *Physician* counseling on proper use and side effects

3) Effective two-way *patient* and *physician* communication
Background

- Known gaps in patient-provider communication about medications
- Precise reasons for the gaps are not well-known

Patient and/or provider behavior

Patient preferences and beliefs
Objective

To assess:

1) Patient beliefs about provider knowledge of their medication regimen

2) Patient-reported rates of communication about medications with physicians and pharmacists

3) The impact of electronic health record (EHR) on these outcomes
Study Design

- Cross-sectional study of adult patients who attended one of four outpatient primary care clinics in Shreveport, LA and Chicago, IL
- Participants were recruited between June and August of 2007
Exclusion criteria: (N=30)
1. Limited English proficiency
2. Inability to participate in a survey due to severe illness
3. Severely impaired hearing or vision

Subset of patients (N=190) with recent prescriptions asked additional communication outcomes
Assessment

- Baseline and Demographic Information (N=500)
- Age
- Gender
- Race
- Education
- Number of current prescriptions and prescribing physicians

- Health Literacy (N=500)
- Test of Functional Health Literacy in Adults
Assessment

1) Beliefs about provider knowledge of their medication regimen (N=500)

2) Medication-related communication with physicians and pharmacists (N=190)
Analysis

- Descriptive statistics calculated for each variable
- Chi-square tests were used to evaluate the association between sample characteristics and item responses
- Multivariable logistic regression models performed for each belief and communication outcome found in bivariate analyses to be significant at p<0.10
### Sample Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Patients (N=500)</th>
<th>Patients with Recent Prescription (N=190)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, Mean (SD)</strong></td>
<td>48.9 (14.4)</td>
<td>48.0 (14.2)</td>
</tr>
<tr>
<td><strong>Male, %</strong></td>
<td>39.6</td>
<td>35.1</td>
</tr>
<tr>
<td><strong>Race, %</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>63.6</td>
<td>58.4</td>
</tr>
<tr>
<td>White</td>
<td>32.8</td>
<td>36.8</td>
</tr>
<tr>
<td>Other</td>
<td>3.6</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Years of Education, %</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; High School</td>
<td>19.4</td>
<td>22.0</td>
</tr>
<tr>
<td>High School</td>
<td>33.2</td>
<td>31.3</td>
</tr>
<tr>
<td>Some College</td>
<td>20.4</td>
<td>20.9</td>
</tr>
<tr>
<td>College Graduate</td>
<td>26.6</td>
<td>25.8</td>
</tr>
<tr>
<td><strong>Literacy Level, %</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate (≤ 6th grade)</td>
<td>20.9</td>
<td>19.5</td>
</tr>
<tr>
<td>Marginal (7th – 8th grade)</td>
<td>31.6</td>
<td>26.5</td>
</tr>
<tr>
<td>Adequate (≥ 9th grade)</td>
<td>47.5</td>
<td>54.0</td>
</tr>
</tbody>
</table>
## Sample Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>All Patients (N=500)</th>
<th>Patients with Recent Prescription (N=190)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Daily Medications, Mean (SD)</strong></td>
<td>2.9 (3.1)</td>
<td>4.0 (3.6)</td>
</tr>
<tr>
<td><strong># of Prescribing Physicians</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>11.4*</td>
<td>1.6**</td>
</tr>
<tr>
<td>1</td>
<td>65.6</td>
<td>67.0</td>
</tr>
<tr>
<td>2</td>
<td>16.3</td>
<td>20.5</td>
</tr>
<tr>
<td>≥ 3</td>
<td>6.7</td>
<td>10.8</td>
</tr>
<tr>
<td><strong>Clinic Type, %</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>50.0</td>
<td>35.1</td>
</tr>
<tr>
<td>Safety Net</td>
<td>50.0</td>
<td>64.9</td>
</tr>
</tbody>
</table>

*no regularly prescribing physician, **no prescription medications
<table>
<thead>
<tr>
<th>Item</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor is aware of all medicines I am taking</td>
<td>90.2</td>
</tr>
<tr>
<td>Doctor is aware of all OTC drugs I am taking</td>
<td>85.4</td>
</tr>
<tr>
<td>Doctor is aware of medicines prescribed by other doctors</td>
<td>91.3</td>
</tr>
</tbody>
</table>

OTC=over the counter
Medication-Related Communications as Reported by Patients (N=190)

<table>
<thead>
<tr>
<th>Patient Communication</th>
<th>Physician Communication</th>
<th>Pharmacist Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Told doctor about OTC drugs currently taking</td>
<td>Reviewed medication list</td>
<td>Explained how to take medicine</td>
</tr>
<tr>
<td>46.0</td>
<td>51.3</td>
<td>43.3</td>
</tr>
<tr>
<td>Told doctor about supplements or vitamins currently taking</td>
<td>Explained how to take medicine</td>
<td>Described side effects</td>
</tr>
<tr>
<td>34.1</td>
<td>77.4</td>
<td>25.8</td>
</tr>
<tr>
<td>Described side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>42.9</td>
<td></td>
</tr>
</tbody>
</table>
Factors Associated with Believing Physicians Knew About All Current Medications:
• Higher number of physicians (p=0.01)
• Higher number of daily medications (p=0.004)
• Receiving care at academic practices (p=0.04)

Factors Associated with Low Rates of Patient Reporting of Over-the-Counter (OTC) Drugs:
• Younger Age (p<0.001)
• Black Race (p<0.01)
• Inadequate Health Literacy (p<0.001)
Factors Associated with Medication-Related Communications with Physicians:

- **Academic clinic patients** more likely to report medication list review \( (p<0.001) \)

- **Academic clinic patients** \( (p=0.01) \) and those taking **multiple medications** \( (p=0.03) \) more likely to report that the doctor explained how to take medicine

- No significant predictors of medication-related communication with pharmacists
Multivariable Analysis

• Patients age < 45 (OR 0.6, p=0.05) and with Inadequate Health Literacy (OR 0.5, p=0.02) less likely to report use of OTC medications to the physician

• Females more likely to believe physicians knew all of their medications (OR 2.8, p=0.02)

• Safety net clinic patients less likely to believe physicians knew all of their medications (OR 0.2, p=0.006)
Study Design and Population

**Exclusion criteria: (N=30)**
1. Limited English proficiency
2. Inability to participate in a survey due to severe illness
3. Severely impaired hearing or vision

Subset of patients (N=190) with recent prescriptions were asked additional communication outcomes.
Exploratory Analysis: Presence of Electronic Health Record (EHR)

EHR-equipped clinic patients with a new prescription more likely to believe:

Doctor was aware of:

- **all medications** (97.6% vs. 87.7%, p=0.001)
- **OTC drugs** (91.7% vs. 83.4%, p=0.03)
- **medications from other physicians** (95.8% vs. 89.8%, p=0.04)
Exploratory Analysis: Presence of Electronic Health Record (EHR)

- Medication list review (78.9% vs. 42.3%, p<0.001)
- Physician instructions on proper use (90.8% vs. 70.4%, p<0.001)
Summary

• Wide gap between what patient believe physicians know about their medications and what they actually report to the physicians

• Patients reported low rates of medication list review, instructions on proper use, and discussion of side effects
Summary

• Inadequate health literacy was a risk factor for low rates of reporting OTC medications

• EHR had positive effects on medication list review and discussion of side effects, however, more likely for patients to believe that physicians knew all of the medications
Limitations

- Cross sectional study
- Unable to establish causality
- Patient recall, did not actually record encounters
- No data on provider beliefs
Practice Implications

• Room for improvement in patient-provider communication

• EHR may facilitate medication list review but does not obviate the need for a thorough in-person discussion

• Future studies should further explore impact of EHR on patient-provider communication
Thank You

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References:


