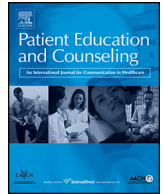




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Patient Perception, Preference and Participation

What patients think doctors know: Beliefs about provider knowledge as barriers to safe medication use

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ABSTRACT

Objective: We examined patient beliefs about provider awareness of medication use, patient-reported prevalence and nature of provider counseling about medications, and the impact of health literacy on these outcomes.

Methods: Structured interviews were conducted at academic general internal medicine clinics and federally qualified health centers with 500 adult patients. Interviewer-administered surveys assessed patients' beliefs, self-reported prevalence and nature of provider counseling for new prescriptions, and medication review.

Results: Most patients believed their physician was aware of all their prescription and over the counter medications, and all medications prescribed by other doctors; while a minority reported disclosing over the counter and supplement use. Among those receiving new prescriptions ($n = 190$): 51.3% reported physician medication review, 77.4% reported receiving instructions on use from physicians and 43.3% from pharmacists. Side effects were discussed 42.9% of the time by physicians and 25.8% by pharmacists. Significant differences in outcomes were observed by health literacy, age, and clinic type.

Conclusions: There is a sizable gap between what patients believe physicians know about their medication regimen and what they report to the physician.

Practice implications: Discordance between patient beliefs and physician knowledge of medication regimens could negatively impact patient safety and healthcare quality.

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1. Introduction

For half of US adults, taking prescription medications is a daily activity that must be sustained over time to treat one or more chronic conditions [1–3]. Multiple studies and seminal reports from the Institute of Medicine (IOM) have identified that

medication non-adherence (intentional or unintentional) leads to increased cost, morbidity, and mortality [4–7]. Patients with low health literacy and older adults are among the most vulnerable; with high rates of misunderstanding of medication instructions and warning labels leading to unintentional non-adherence and adverse events [5,8–13]. Medical providers play an integral role in educating patients to promote safe medication use; however, appropriate counseling relies on the patients' disclosure of: (1) medications prescribed by other physicians; (2) non-prescription drugs and supplements; and (3) medications filled by pharmacies that are not electronically linked to the primary care practice.

Previous studies have found deficiencies in patient-provider communication with patients failing to report medications

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prescribed by other practitioners, discuss medication concerns, and disclose the use of non-prescribed and complementary therapies [12,14–18]. The quality and quantity of physician counseling on appropriate medication use are highly variable; physicians often fail to speak with patients about the importance of adherence or to address any patient concerns about medication side effects or cost [12,15,18–21]. Pharmacist engagement with patients about medications is also suboptimal [22]. Despite the federal mandate for drug counseling at the point of prescribing, multiple studies suggest that direct pharmacist counseling does not routinely occur in the community [23–28]. The lack of uniform integration between medical practices and community retail pharmacies serves as an additional barrier to maintaining an accurate medication record [29–31]. Additionally, the recent dramatic increase in patient use of internet pharmacies, many of which do not require a legitimate prescription, do not allow providers the opportunity to ensure safe practices by counseling and may further contribute to patients' lack of disclosure [32,33].

It is unclear whether differences in patients' perceptions from providers' perceptions may contribute to inadequate communication about medications. Previous studies examining patient beliefs about medications have been small, largely descriptive and have yielded contradictory results [18]. No published studies to date have examined patient beliefs about provider knowledge and awareness of medications. Additionally, the effect of the electronic health record (EHR) and electronic prescribing on patient beliefs and patient–provider communication are not well-established.

The purpose of this study was to examine patient beliefs about provider knowledge of medications and also related patient–provider communication. We performed cross-sectional, structured interviews with patients seeking care at primary care clinics to assess: (1) patient beliefs of physician awareness of their entire medication regimen and (2) patient-reported rates of medication list review, counseling on use, and discussion of side effects by physicians and pharmacists. We also performed exploratory analyses to assess whether the presence of the electronic health (EHR) may affect patient–provider communication.

2. Methods

2.1. Study participants

Adult patients who attended one of four outpatient primary care clinics were recruited in Shreveport, Louisiana and Chicago, Illinois. One clinic in each city was an academic general medicine practice while a second clinic was a safety-net community health center. Subject recruitment and interviews took place between June and August 2007. Patients were considered eligible if they were 18 or older and ineligible if the clinic nurse or study research assistant identified a patient as having one or more of the following: (1) severely impaired vision; (2) hearing problems; (3) illness severe enough to preclude participation in the survey; and (4) limited English proficiency. Verbal informed consent for the study was obtained by the research assistants by approaching the patients in the clinic. Institutional Review Boards for all locations approved the study.

A total of 562 patients were approached in the order that they arrived at the clinics prior to the medical encounter; 530 consented to the study. Thirteen patients were excluded based on self-reported hearing ($n=3$) or vision ($n=10$) impairments. Ten patients were excluded due to limited English proficiency and seven were excluded based on incomplete information, resulting in a sample size of 500 patients. The sample was evenly split across the two geographic locations ($n=250$ per city) and practice setting (academic, safety net; $n=125$ within each study location). A response rate was determined following the American Association

for Public Opinion Research standards, estimating that 92.8% of approached eligible patients participated in the study [34].

2.2. Procedure and measurement

Structured interviews were conducted with all patients to assess beliefs about provider knowledge of their medication regimen. Three items using a 4-point Likert scale set of response options assessed patients' perceptions about their physician's understanding of their medication use ('my doctor is aware of all of the medicines that I am taking', 'my doctor is aware of all of the over-the-counter drugs (OTC) that I am taking', 'my doctor is aware of all of the medicines that other doctors prescribe me'). In addition, we asked patients whether or not they told their doctor about the use of OTC drugs, herbal supplements or vitamins.

Participants were then asked if they had received a new prescription medication from their doctor within the past three months. A total of 190 of the 500 patients (38.0%) stated they had received a new prescription; these individuals were asked additional items to assess the prevalence of: (1) physician–patient communication pertaining to the use of a new prescription medication ('did your doctor explain to you how to take this medicine', 'did your doctor teach you about any potential side effects or risks?'); (2) pharmacist–patient communication pertaining to the use of a new prescription medication (modified from above). A trained research assistant administered the interview that included self-report of socio-demographic information (age, gender, race, education) and the number of daily prescription medications currently taken. The Rapid Estimate of Adult Literacy in Medicine (REALM) was used to assess participant literacy skills [35].

2.3. Analysis plan

Descriptive statistics (percentage, mean and standard deviation) were calculated for each variable. Responses to items assessing patient beliefs and self-reported provider–patient communication were dichotomized based on valence (strongly or slightly agree vs. strongly or slightly disagree). Chi-square tests were used to evaluate the association between sample characteristics and item responses. Multivariable logistic regression models were performed for each belief and communication outcome, including any variables found in bivariate analyses to be significant at $p < 0.10$ as covariates. All statistical analyses were performed using STATA software version 10.0 (StataCorp, College Station, TX, USA).

3. Results

Table 1 provides a socio-demographic and clinical profile for both the total patient sample ($n=500$) and the subsample of those patients receiving a new prescription in the past three months ($n=190$). In general, patients were middle-aged, predominantly female (60.4%), and black (63.6%). About half (52.6%) reported a high school level of education or less and half (52.5%) had limited literacy skills. One quarter (23.0%) of patients had two or more prescribing physicians, with an average number of 2.9 prescriptions (range: 0–27). Few differences were noted among those receiving new prescriptions ($n=190$), with exceptions being the number of prescribing physicians and prescriptions currently taken. In addition, more patients in the safety-net clinic sites received a new prescription in the past three months compared to those in the academic setting (64.9% vs. 35.1%, $p < 0.001$).

The majority of patients believed that their physician was aware of all prescription and OTC medications they were currently taking (90.2% and 85.4% respectively; Table 2).

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