The Association of Prescription Status, Patient Age, Patient Gender, and Patient Question Asking Behavior with the Content of Pharmacist–Patient Communication

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Purpose and Methods. Data from 358 pharmacist–patient encounters in 12 community pharmacies were used to investigate the association of prescription status, patient age, patient gender, and patient question asking with the content of pharmacist–patient communication.

Results. There was an association between prescription status and the provision of five types of information, patient age and gender were associated with the provision of the same two types of information, and patient question asking was associated with the provision of eight types of information.

Conclusions. An important cue for improvement of pharmacist–patient communication was patient question asking. Thus, it is imperative to find ways to increase question asking by patients and understand why some patients are reluctant to ask their pharmacist questions.

KEY WORDS: counseling; consultation; pharmacist–patient communication; question-asking.

INTRODUCTION

As pharmacists' and patients' communication with each other about drug therapy continues to increase, patients gain additional benefits such as better management of risks associated with taking medications and achievement of desired healthcare outcomes (1–2). Appropriate communication between pharmacists and patients also leads to increased levels of patient satisfaction with pharmacist consultation (3–4). Satisfaction is important in retaining and attracting patients as customers, and for compliance with treatment regimens (3–4).

There are many theoretical and conceptual frameworks that researchers have used in studying provider-patient communication. Some of these frameworks include role theory (5), behavioral theories of compliance (6), commonsense model of illness (7), and communication based models (8). Building upon these theories and frameworks, we offer another conceptual framework to examine pharmacist–patient communication in community pharmacy practice environments. Bitner's model of the service encounter is based upon environmental and ecological theories (9–10). Bitner's work takes into account several of the variables of the previously mentioned frameworks, but also places a major emphasis on the environmental conditions in which a service is provided. In using Bitner's framework, we hypothesize that pharmacist–patient communication is influenced by contextual cues. Contextual cues are defined as any stimuli to which an individual is exposed in a pharmacy environment (the total complex of sensory stimuli in a pharmacy) which can affect a patient's or pharmacist's cognitions and behaviors related to pharmacist–patient communication (9–10). For example, a contextual cue could be a situational cue to which an individual is exposed that can serve as an attention-creating, message-creating, or affect-creating medium. The domain of contextual cues includes the processes used to deliver the service, the area in which pharmacist–patient communication takes place, patient and pharmacist characteristics, attitudes, beliefs, expectations and behaviors toward communication, the prescription drug product, price of the service, and promotions related to the service (4,9).

Researchers have used Bitner's model of the service encounter to identify and empirically examine the domain of contextual cues that influence pharmacist–patient communication and consultation for prescription medications in community pharmacy practice environments (11–15). Researchers in one study reported that pharmacists use their perceptions of patients' motivation for communication, type of medications, patient abilities, and time available for consultation to determine the length and content of communication (11). In another study, researchers found that pharmacists determine the importance and content of communication based upon the patients' familiarity with the medication and pharmacists' professional judgment of patient risks associated with the type of medication being dispensed (12). For example, when pharmacists were presented with a prescription order for a patient who had never received the medication, the top three elements of consultation pharmacists rated as important to provide the patient were: directions for use, name and purpose of the medication, and side effects. When pharmacists were presented with a prescription order for a renewal and the patient was familiar with the medication, the top three rated elements for consultation changed to: directions for use, monitoring, and contraindication information (12).

In a field investigation of participant and environment effects on patient–pharmacist communication, researchers hypothesized the relationship of six contextual cues that affect the occurrence, length, and content of pharmacist patient communication (13). The variables were prescription transfer by the pharmacist to the patient, importance of information, pharmacist counselor role orientation, patient role orientation towards consultation, availability of time to address pharmacist–patient communication activities, and patient privacy. They found four variables related directly or indirectly to the occurrence of communication (prescription transfer by the pharmacist to the patient, importance of information, pharmacist counselor role orientation, and availability of time to address pharmacist–patient communication activities). The key variables associated with the length and content of communication were pharmacists' and patients' perceptions of the importance of information to be communicated and patients' role orientation towards consultation. In another investigation in community pharmacy practice settings, Schommer studied the effects of interrole congruence on pharmacist–patient communication (14). He found when pharmacists and patients had more interrole congru-

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ence, the length of communication was longer and contained more types of information as compared to patients and pharmacists who had interrole incongruence.

There have been few studies in pharmacy which examined the association of a patient's age with pharmacist–patient verbal consultation. In one study (2), the authors examined the relationships between patients' self-reported receipt of verbal consultation from pharmacy personnel and patient age, gender, race and education, and prescription status (new versus refill). Using multivariate analyses, the authors found only patient age and prescription status related to receipt of verbal consultation from pharmacy personnel. Pharmacy personnel reportedly provided less consultation to older respondents. Schommer also reported that older patients had more interrole incongruence with respect to pharmacist–patient communication in which older patients' length and number of types of communication were less when compared with other patients (14). Wiederholt and Rosowski, too, found that older patients in a community pharmacy practice environment had lower expectations toward pharmacist provided information services than other patients (15).

In the aforementioned survey of over 2,000 Wisconsin households (2), researchers reported that patients were 50 percent more likely to receive consultation for new prescriptions than refill prescriptions. Also, it was determined that there was a difference in the elements of consultation; patients with new prescriptions received more information about directions for use, purpose of medication, side effects, and drug interactions/precautions than patients who had refill prescriptions dispensed. Consistent findings were reported from another study in which pharmacists were presented with two dispensing scenarios (new versus refill prescription for the same medication). The types of information that would be given to the patient in each situation varied (12) with the new prescription more likely to be accompanied with information about directions for use, name and purpose of the medication, and side effects.

Although Wiederholt, *et al.* (2) did not find an association between patient gender and communication between pharmacists and patients, some of the physician-patient communication literature suggests that patient gender still should be investigated as a possible influence of communication behaviors. Some researchers have reported that patient gender can influence communication between physicians and patients (16–17). Therefore, research in the pharmacist-patient domain should continue to investigate gender as a potential influence on communication.

Another contextual cue that could influence pharmacist–patient communication is patient question asking. The association between patient question asking behaviors and pharmacist–patient communication has not been examined extensively in pharmacy practice. However, patient question asking behavior has been examined thoroughly in physician-patient communication (16–19). Roter identified and empirically examined three groups of factors from the patient perspective that are associated with patient question asking behavior (18). These are defined as enabling, predisposing, and reinforcing factors. Enabling factors include a patient's ability to articulate questions and the ability to recall questions in the presence of providers. Predisposing factors are defined as beliefs in the acceptability of asking questions, health locus of control and value placed on health, salience of questions and information, and expectations for information. Lastly, reinforcing factors involve encouragement, received answers, and reduced anxiety from the information. Beisecker and Beisecker found situational variables such as length of interaction between physician and patient, diagnosis and reason for visit, were associated with patient question asking behaviors (19). In a summary of patient-physician communication literature, Roter, *et al.* (17) reported that the studies they reviewed showed a consistent profile of physician-patient interaction in which information giving accounted for about 50 percent of the communication and positive talk about 20 percent. Patient question asking behaviors, social conversation and negative talk accounted for less than 10 percent each (17). When patients in a bilateral communication situation assume a direct role in initiating questions in a physician-patient encounter, researchers found that the length of the encounter was longer and patients received more information, patient satisfaction increased, and patients were more compliant with treatment (18).

Taking into account these results from research regarding physician-patient communication, pharmacists may determine a patient's motivation for communication based on whether or not a patient asks questions (20–22). Patients who ask questions implicitly provide pharmacists the permission to present more detail about the appropriate use of medications. Some pharmacists reportedly do not provide much information unless they are asked because of their perception that the patient does not need or want information (11). However, for patients who ask for more information, pharmacists are more likely to take on the role of information giver and provide more in-depth information about prescription drug use (11).

In the continued investigation of pharmacist–patient communication encounters, our goal was to examine four contextual cues in community pharmacy practice settings that may be associated with the content of pharmacist–patient communication: (1) prescription status (new or refill), (2) patient age, (3) patient gender, and (4) patient question asking behavior. We selected prescription status and patient age for investigation based on the findings of Wiederholt *et al.* (2) since our study was conducted in the same geographic region as theirs. Patient gender and patient question asking were selected based on evidence in the physician-patient communication literature. These were studied in an effort to build upon existing work in the pharmacist–patient communication research domain. Based on the previous discussion, we generated the following research question:

What are the relationships between the content of pharmacist–patient communication and the variables: prescription status, patient age, patient gender, and patient question asking behavior?

METHODS

Content of pharmacist–patient communication consisted of the different types of information conveyed to patients. The likelihood that specific types of information were provided under different conditions of prescription status, patient age, patient gender, and patient question asking were investigated in this study. Ten variables were used to represent the content of communication. They were: (1) administrative elements, (2) continuity of therapy, (3) contraindications, (4) directions for use, (5) interactions, (6) monitoring, (7) name of medication, (8) purpose of medication, (9) side effects, and (10) solicitation

of feedback (see Appendix for definitions of each). Solicitation of feedback was included as a content type since some pharmacists use a counseling approach in which patients are asked open-ended questions in order to ascertain what types of information the patient needs. The ten variables were measured by observing pharmacist–patient encounters and recording whether or not each type was provided to patients.

Four independent variables were studied. The first, prescription status, was measured through patient interviews during which patients were asked the new or refill prescription status of their medications. For cases when both new and refill prescriptions were purchased, individuals were categorized as purchasing a new prescription if at least one prescription was new (this was encountered for 11 out of the 360 cases in this study). Second, patient age was measured by asking individuals to report their age. Third, patient gender was observed and recorded during patient interviews. Finally, patient question asking was measured by observing pharmacist–patient encounters and recording whether or not patients asked questions about their prescriptions or health.

A judgment sample of 12 community pharmacies in Wisconsin was selected for data collection. The sample was chosen to provide variation in geographic location, prescription volume, and type of ownership among pharmacies. A random sample of 30 patients who received a prescription was selected at each of the 12 pharmacies. Thus, the total number of patients included in the study was 360. Data were collected through unobtrusive observation of pharmacist–patient encounters and patient interviews as they exited the pharmacy. One graduate student researcher conducted all of the observations and interviews. Observations were made from an area about 25 feet from the patient and to the side of the pharmacist's area of forward vision. This method allowed the observer to be unobtrusive while still being able to hear both the pharmacist and patient speak.

Comparisons for the provision of specific types of information among prescription status (new, refill), patient age (18–29, 30–39, 40–54, 55–74, 75 or more years), patient gender (male, female), and patient question asking (yes, no) were made using logistic regression analysis. Categories for the independent variables were based on previously reported research (2,12). Logistic regression model building was used to determine which independent variables were the best predictors for the provision of each type of information. Previous research was valuable for hypothesizing how prescription status might influence the provision of different types of information (2,12), but the effects of age, gender, and patient question asking were uncertain. To help determine the order of variables entered for the logistic regression models and to determine interactions that should be used for model building, Chi-Square Automatic Interaction Detection (CHAID) analysis was used as a first step (23–24). CHAID is a segmentation technique for dividing a population into segments that differ with respect to a designated criterion. CHAID first divides a population into two or more distinct groups based on categories of the "best" predictor of a dependent variable (based on the chi-square statistic). It then splits each of these groups into mutually exclusive and exhaustive subgroups based on other predictor (independent) variables. This splitting process continues until no more statistically significant predictors can be found or until a stopping rule is met.

The limitation of CHAID is that all of the variables are not considered simultaneously, but rather considered sequentially in their order of significance. Thus, in this study, CHAID was used as a first step for identifying the order of models to be tested by logistic regression analysis. Goodness of fit for competing logistic regression models was assessed based on the change in -2 log likelihood and model improvement chi-square statistics (25). The best fitting model for each type of information was chosen based on goodness of fit and parsimony of interpretation. After the best fitting model was determined, the odds ratio [*exp* (β)] and corresponding 95 percent confidence interval were computed for the regression coefficient of each significant predictor variable.

RESULTS

Usable data were obtained for 358 of the 360 cases selected for study. Overall, 38.5 percent of the cases were for new prescriptions and 61.5 percent for refills. The distribution of patient ages were: 18–29 (16.8 percent), 30–39 (20.7 percent), 40–54 (21.8 percent), 55–74 (30.4 percent) and 75 or older (10.3 percent). The sample consisted of 251 (70.1 percent) females and 107 (29.9 percent) males. A total of 96 (26.8 percent) out of 358 individuals asked their pharmacist a question.

The proportions of patients who received the 10 specific types of information, in descending order were: directions for use (39 percent), administrative elements (37 percent), solicitation of feedback (36 percent), purpose of medication (31 percent), name of medication (25 percent), side effects (25 percent), monitoring (14 percent), continuity of therapy (9 percent), interactions (4 percent), and contraindications (3 percent). Overall, 74 percent of the patients in this study received at least one of these types of information from their pharmacist.

Potential multicollinearity problems for logistic regression were addressed by computing the phi correlation between prescription status and patient question asking ($\phi = 0.218$), between gender and patient question asking ($\phi = -0.008$), and between prescription status and gender ($\phi = -0.113$). Also, the point biserial correlation was computed between prescription status and age ($r_{pb} = -0.298$), between gender and age ($r_{pb} = 0.123$), and between patient question asking and age ($r_{pb} = 0.048$). Since each of the correlation coefficients had an absolute value less than 0.30, multicollinearity was not considered a problem.

Table 1 contains results from logistic regression analysis for the associations of prescription status, patient age, patient gender, and patient question asking with the provision of specific types of information. One way to view the results is to determine which independent (predictor) variables significantly influenced the provision of each type of information. The results showed that prescription status significantly affected the provision of directions for use, name of medication, purpose of medication, side effects, and interactions; individuals who purchased at least one new prescription more likely received these types of information. Both patient age and gender significantly affected the provision of solicitation of feedback and monitoring information; older patients and males more likely received these types of information. Patient question asking was a significant predictor for receipt of information about administrative elements, continuity of therapy, contraindications, purpose of med-

Table 1. Logistic Regression Models[a] for Provision of Specific Types of Information (n = 358)

Type of information[b]	Proportion who received the information	Model	Model chi square	Predictor variable[c]	Odds ratio *exp* (β)	95% Conf. interval for the odds ratio[d]
Direct	39%	Constant, PS	153.1, $p < 0.001$	PS	21.96	12.68–38.09
Name	25%	Constant, PS	74.3, $p < 0.001$	PS	9.38	5.42–16.28
Admin	37%	Constant, PQA	30.8, $p < 0.001$	PQA	3.90	2.39–6.35
Contin	9%	Constant, PQA	7.8, $p = 0.005$	PQA	2.88	1.40–6.05
Contra	3%	Constant, PQA	15.9, $p < 0.001$	PQA	23.81	2.92–194.42
Purpose	31%	Constant, PS, PQA	145.1, $p < 0.001$	PS	17.51	9.78–31.19
				PQA	2.93	1.60–5.42
Side	25%	Constant, PS, PQA	132.7, $p < 0.001$	PS	14.54	7.69–27.66
				PQA	5.60	2.97–10.49
Interact	4%	Constant, PS, PQA	19.0, $p < 0.001$	PS	4.00	1.23–13.07
				PQA	5.01	1.65–15.81
Solicit	36%	Constant, PQA, AGE, GENDER	6.5, $p = 0.011$	PQA	1.91	1.16–3.13
				AGE (30–39)[e]	1.96	0.85–4.51
				AGE (40–54)[e]	3.36	1.50–7.52
				AGE (55–74)[e]	2.96	1.37–6.41
				AGE (75+)[e]	3.14	1.23–8.05
				GENDER	1.88	1.16–3.04
Monitor	14%	Constant, PQA, AGE, GENDER	4.6, $p = 0.032$	PQA	5.09	2.65–9.75
				AGE (30–39)[e]	1.07	0.26–4.36
				AGE (40–54)[e]	3.79	1.15–12.48
				AGE (55–74)[e]	1.98	0.59–6.63
				AGE (75+)[e]	4.61	1.24–17.10
				GENDER	2.10	1.07–4.11

[a] Independent variables for logistic regression models were: prescription status (PS), patient age (AGE), patient gender (GENDER), and patient question asking (PQA). Ordering of variables for building logistic regression models was determined by Chi-Square Automatic Interaction Detection (CHAID) analysis. The best fitting models for each type of information were determined by—2 log likelihood, model improvement chi-square, and parsimony of interpretation.
[b] See appendix for definitions of each type of information.
[c] PS = prescription status, PQA = patient question asking, AGE = patient age, GENDER = patient gender.
[d] Confidence intervals for the odds ratio = $exp[\beta - 1.96(s.e._\beta)]$ to $exp[\beta + 1.96(s.e._\beta)]$.
[e] Reference category for comparisons was AGE (18–29).

ication, side effects, interactions, solicitation of feedback, and monitoring; patients who asked questions more likely received these types of information. Only two types of information were not influenced by patient question asking, directions for use and name of medication.

Another way to view the results is to focus on the models that best predicted the provision of each type of information. The results revealed four different models that best predicted the 10 types of information that we studied (see Table 1). The first model consisted of prescription status (PS) as the only significant predictor variable. This model best predicted the provision of two types of information: directions for use and name of medication. The second model consisted of patient question asking (PQA) as the only predictor variable and best predicted the provision of administrative elements, continuity of therapy, and contraindication information. The third model included both prescription status and patient question asking as the predictor variables. This two variable model was the best predictor for the provision of information regarding purpose of medication, side effects, and interactions. Prescription status (PS) was the dominant predictor variable for purpose of medication and side effect information. Patient question asking (PQA) was the dominant predictor variable for the provision of information about interactions. Finally, the fourth model consisted of patient question asking (PQA), age (AGE), and gender (GENDER) as the predictor variables. This model was the best predictor for solicitation of feedback and monitoring information.

Before these results are discussed, some limitations of this study should be noted. First, pharmacies were not selected randomly. However, judgment samples were selected to be diverse enough to yield insight about pharmacist–patient communication under different conditions of practice. Second, observation effects could have affected the results. If pharmacists and patients knew they were being observed during data collection, they may have behaved differently than if they had not known. However, Ortiz *et al.* (26) reported that the effects of the presence of an observer on pharmacist counseling behaviors was minimal and provided more accurate measurements than other methods. For our study, patients were not told that they were observed until after they purchased their prescription. Pharmacists knew that the researcher was present in the pharmacy, but were not told about what data were being collected until after data collection was completed. In addition, evidence of observation effects was tested statistically by comparing the length of communication (in seconds) and the total number of types of information conveyed between early and late observations for pharmacy sites and pharmacists. Assuming that observation effects are more pronounced during early observations and decrease over time (27), significant differences for comparisons would suggest that observation effects were present. No

statistically significant differences were found, so observation effects appear to have been minimal. Finally, observer inference effects could have influenced the results. Incorrect inferences by the researcher about observed behaviors would lead to erroneous results and conclusions (27). To help overcome this potential problem, the researcher used a check list of types of information considered consistent with the definition of pharmacist–patient communication. Only one observer was utilized for this study to help minimize observation effects on pharmacists and patients. Therefore, inter-rater reliability could not be assessed as a means for detecting observer inference problems and is a limitation of this study.

DISCUSSION

The results of this study showed that prescription status, patient age, patient gender, and patient question asking have different effects on the content of information provided to patients. For example, when a new prescription was dispensed, pharmacists more likely provided information about directions for use, name of medication, purpose of medication, side effects, and interactions than when a refill prescription was dispensed. These findings are consistent with those reported from a study which utilized patients' self-reported receipt of information (2) and a study which was based on pharmacists' self-reported behavioral intentions (12). It appears that pharmacists use prescription status as a cue for communication about some basic information that is needed to use a prescription correctly. The directions for use and name of a medication are contained in the prescription label but commonly reinforced by pharmacists when a new prescription is dispensed. For these two types of information, prescription status was the only significant predictor variable. It appears that patients do not ask for these types of information since pharmacists commonly provide it and since the information is contained in the label.

Also, pharmacists more likely told patients the purpose of medication, side effects, and interactions when the prescription was new. However, the results also showed that patient question asking was a significant predictor for these types of information as well. This suggests that simply using the new or refill status of a prescription as a cue for providing these types of information is not adequate. It appears that patients sometimes need to ask for information about the purpose of the medication, side effects, and interactions. Information, regarding what the medication is treating, side effects that could arise, and interactions that could occur, might concern some patients (11). Thus, pharmacists might be hesitant to give this information for some prescription medications unless the patient asks for it (11).

Patient age served as a cue for providing some types of information. Older patients (ages 40 or older) were more likely than younger individuals (reference category for comparisons = ages 18 to 29) to be solicited for feedback. Pharmacists might ask older patients for feedback more often than they ask younger patients because of the complex, chronic nature of older individuals' drug therapies. Also, the age categories 40 to 54 and 75 or older more likely received monitoring information than the reference category (ages 18 to 29). We found that age was not related to the probability of receiving monitoring information in a linear fashion. It appears that age is a complex variable composed of other confounding effects such as drug regimen, diagnosis, or for whom the prescription is purchased. The non-linear effects of age are consistent with findings reported by Wiederholt et al. (2). In addition to the effect of age on solicitation of feedback and monitoring information, patient question asking was a significant predictor as well. Thus, patients were asking for these two types of information in addition to the level of information that pharmacists offered.

Patient gender, like patient age, served as a cue for two types of information: solicitation of feedback and monitoring. For each type of information, males were more likely than females to receive these types of information. Only 29.9 percent of our study sample were male. It could be that when a pharmacist interacts with a male patient, the pharmacist uses the patient's gender as a cue that long term aspects of the medication (e.g. monitoring information and solicitation of feedback) need to be covered since males are not seen as frequently in these pharmacies as females. Pharmacists may perceive that females are more familiar with medications due to the frequency with which they patronize pharmacies. The effects of gender could be due to other reasons and more research in this area is warranted.

Patient question asking served as an important cue to pharmacists to provide many types of information. For example, administrative elements, continuity of therapy, contraindications, purpose of medication, side effects, interactions, solicitation of feedback, and monitoring were provided more often if a patient asked a question. It appears that patients need to ask pharmacists about administrative elements such as whether or not a generic is available. Also, patients often need to ask questions in order to receive information about how the prescription fits into their overall treatment regimen (e.g. continuity of therapy, contraindications, purpose of medication, side effects, interactions, monitoring). This might be due to the possibility that pharmacists have a prescription-centered focus rather than a patient-centered one. If patients need information about how a particular medication fits into their lifestyle or overall therapy, they often need to ask their pharmacist rather than wait for the pharmacist to offer that information. However, only 26.8 percent of the patients in this study asked their pharmacist a question and other researchers have suggested that many patients are not even aware that the pharmacist can be asked questions about medication therapies (14,15,20,22,28). Therefore, pharmacists should not rely on patients to initiate communication, but rather actively assess patients' needs for information and be prepared to discuss sensitive pharmacotherapeutic issues at patients' levels of comprehension.

There were three types of information for which patient question asking was the sole predictor (administrative elements, continuity of therapy, and contraindications). Patients often ask questions about how much they must pay out-of-pocket for a prescription or the number of refills remaining (administrative elements). Thus, it is not surprising that 37 percent of the study subjects received this type of information and that patient question asking was the only significant predictor variable in the logistic regression model. However, the fact that patient question asking was the sole predictor for the continuity of therapy and contraindication information types, coupled with the low incidence of their provision (9 percent and 3 percent, respectively) gives cause for concern. It appears that pharmacists rarely provide information about continuity of therapy or contraindications unless asked and that very few patients ask about them. If information about how a medication works with others, what it replaces, or conditions under which the medica-

tion should not be taken is not provided to patients, serious negative consequences could occur. It is unknown if this type of information is being given to patients by another health care professional or if patients are consuming medications without this knowledge. Recent court cases are now recognizing the pharmacist–patient relationship and how this relationship serves as the justification for a duty of care that includes the provision of information to patients (29).

Since patient question asking is currently such an important determinant of the provision of many types of information, it is imperative to find ways to increase question asking by patients and determine why some patients are reluctant to ask their pharmacist questions. Just as pharmacists use cues for determining the amount and content of information to convey, patients might need cues in the pharmacy to convey the message that it is appropriate to ask the pharmacist questions (30). For example, cues such as whether it is a pharmacist or a clerk who transfers the prescription to the patient (13), the physical layout of the prescription area (11), whether or not the patient was asked if he or she had any questions (20–22), pharmacists soliciting feedback from patients to determine what information a patient requires (11), and educational interventions about pharmacists' roles (28) could influence information seeking behaviors on the patient's part. Thus, based on previously cited work, we offer some specific suggestions for increasing patient question asking in pharmacies. First, pharmacists (rather than technicians or clerks) should physically transfer completed prescriptions to patients in order to develop face-to-face contact between pharmacists and patients and to show that the pharmacist is available to answer questions that the patient might have. Second, pharmacists and patients should interact in a private area so that patients feel comfortable asking questions. Third, pharmacists should ask patients if they have any questions and be willing to probe and wait for the patient to verbalize his or her question. Fourth, pharmacists should ask for feedback from patients about how they plan to use their medications, what they are for, and what to do if a problem occurs. This would give pharmacists and patients alike a basis for further communication and the development of questions. Finally, patients' knowledge of pharmacists' roles needs to be enhanced. Research reported by Chewning and Schommer (28) suggests that the primary barriers to patient question asking are fear/intimidation and lack of awareness that the pharmacist can answer questions. As a means to overcome these barriers, they showed that inexpensive educational materials distributed in pharmacies can impact patients' knowledge of pharmacist roles (28). An educational intervention such as this could also serve as a cue to foster communication between pharmacists and patients.

CONCLUSIONS

Although prescription status, patient age, and patient gender can be useful cues for determining the content of information that pharmacists give to individuals, a cue even more important than these was patient question asking. In fact, the information seeking role of the patient was shown to be the only factor that predicted the provision of some types of important information in community pharmacies. Pharmacists tend to underestimate patients' motivation for communication and need to be asked for some information before they will provide it.

Since pharmacy practice settings are so different in physical environment and in the process of service provision compared to physician office settings, research specific to pharmacy is needed to investigate how patient question asking can be fostered. Also, more research is needed to learn if patients view pharmacists as a legitimate source of drug information. If patients become more aggressive seekers of information from their pharmacist, it is feasible that they can work better with their pharmacist and other health care providers in managing their drug therapy.

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APPENDIX

Types of Information Provided by Pharmacists (Content of Communication)

Administrative Elements (ADMIN):	generic substitution available, price, renewals
Continuity of Therapy (CONTIN):	how this medication works with others, what it replaces
Contraindications (CONTRA):	conditions under which the medication should not be taken
Directions for Use (DIRECT):	how to use the medication
Interactions (INTERACT):	interactions with other medications which may occur
Monitoring (MONITOR):	how to assess the medication's effectiveness, action to take if a problem occurs
Name of Medication (NAME):	brand or generic name
Purpose of Medication (PURPOSE):	what the medication is for
Side Effects (SIDE):	side effects which may occur
Solicitation of Feedback (SOLICIT):	pharmacist asks patient for feedback

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