

Increasing Clients' Knowledge of Community Pharmacists' Roles

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Purpose. The pharmaceutical care framework requires an active client-pharmacist partnership, particularly with respect to consultation about medications. With low client expectations for pharmacist consultation documented by several studies, this research sought to identify: 1) what information clients want from pharmacists, 2) what barriers prevent clients from asking pharmacists their questions, and 3) whether an inexpensive intervention could increase client short-term knowledge of pharmacist roles related to patient consultation and monitoring prescription appropriateness. Role theory provides a framework for this study.

Methods. Nineteen community pharmacies and 355 pharmacy clients participated in the study. Each client completed a survey on their needs for information and knowledge of pharmacist roles, with clients in the experimental arm receiving a short brochure on pharmacist roles while a control group did not.

Results. Sixty percent wanted information about side effects; 51% wanted directions for how to take the medication correctly. Most frequently listed barriers to asking pharmacists questions were client embarrassment and ignorance that it was appropriate to seek information from pharmacists. Significantly more experimental group clients than control group clients correctly answered survey questions about pharmacist roles and training. Only 52% of the control group believed the pharmacist always checks for possible drug interactions. Only 55% believed pharmacists were required to provide appropriate patient consultation for prescriptions under state law.

Conclusions. Brief exposure to a short pamphlet about pharmacists' activities increased knowledge of pharmacist roles and training, suggesting that inexpensive interventions can impact on client short term knowledge of pharmacist roles.

KEY WORDS: patient perceptions; pharmacist roles; community pharmacy consultation.

INTRODUCTION

Every health profession seeks recognition and compensation for its unique skills and contributions to the quality of a patient's life. To this end, the pharmacy profession is making considerable efforts to raise expectations and extend the roles of pharmacists in community settings, both through increasing entry level educational requirements and the adoption of professional roles consistent with the pharmaceutical care framework (1-7). The pharmaceutical care framework assumes a client-pharmacist partnership in which clients *actively* seek ongoing medication consultation and regimen monitoring assistance from their pharmacist (8). For this framework to be successful patients must know what the professional roles of pharmacists

are, especially with respect to consultation with patients and monitoring the appropriateness of drug regimens. Since this framework relies on clients working closely with pharmacists, it is important to identify how patients perceive their medication consultation needs, what barriers prevent clients from seeking information from pharmacists, their knowledge of the pharmacist's role relevant to pharmaceutical care and the feasibility of increasing client knowledge when pharmacists' professional roles are underestimated.

According to role theory, problems in pharmacist consultation and other pharmaceutical care activities can occur when clients and pharmacists have different expectations about the pharmacist's role in health care (9,10). As a component of pharmaceutical care, consultation with patients requires two-way interaction between the pharmacist and client and contains learned and consistent behavior patterns. Each participant should enact certain behaviors (a script) in order for consultation to proceed smoothly. If clients do not view the pharmacist as a consultant, consultation effectiveness may be diminished since the role players are not reading from the same script (10). Results from one study showed that clients who had low expectations for consultation with a pharmacist were less likely to ask questions and received less consultation than clients with higher expectations (11). In addition, if clients with low role orientations do receive any consultation, they might not attend to or comply with it, severing the effects pharmacist services can have on desired patient outcomes.

Other research has documented the same finding that clients' question-asking increases the amount physicians counsel patients (12). Together, these results confirm that clients do influence the extent providers engage in their role of counseling patients. If clients are unaware of pharmacists' patient consultation responsibilities, these findings suggest that it would be useful for clients to have accurate knowledge about pharmacists' increasing role regarding counseling.

For the last several decades, clients' expectations of pharmacists appear to be related to the pharmacist as a supplier of prescription products rather than that of concerned counselor regarding medications. Spencer (13) cited low client expectations of pharmacist consultation services as a reason for the lack of communication between pharmacists and patients. Gagnon (14) reported that clients rated the importance of most professional services given by a pharmacist less important on average than pharmacists did. He suggested that clients may be uninformed about the value of professional services given by a pharmacist.

Schondelmeyer and Trinca (15) reported that some clients did not want more information about their medications and others were not willing to pay for such information from a pharmacist. Carroll (16) reviewed the literature on consumer demand for patient oriented services in community pharmacies and concluded that the lack of consumer demand for such services might be from a lack of any chance to evaluate, try or even become aware of these services since pharmacists have not provided them. Recently, Schommer (17) reported that many clients expect consultation only when medications have not been taken previously, when a problem is detected by the pharmacist, or when they have a question. According to Schering Report XIV (18), only 27% of the respondents reported that

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pharmacists should talk with them personally each time a prescription medication is dispensed, 36% reported that consultation should occur only if the patient asks, and 32% reported that it should occur only if the pharmacist thinks it is necessary.

With evidence of low client expectations of pharmacists' consultation, there may be increasing role incongruence if pharmacists attempt to adopt more pharmaceutical care models. Drawing upon role theory's emphasis on the need for congruence of expectations between parties in an interaction, if the transition to pharmaceutical care is to occur successfully, clients will need to know what pharmacists' roles are and pharmacists will need to know more about client priorities for information. In addition, given the importance of client initiatives in seeking information as a trigger for pharmacist consultation, there is a need to better understand and address perceived barriers preventing clients from asking key medication questions they wish to ask pharmacists.

METHODS

This study was designed to test an inexpensive intervention to increase client knowledge about pharmacist roles. For the purposes of this research, the pharmacist's role is operationalized in terms of pharmacists' consultation with patients as well as monitoring the appropriateness of their prescriptions. In addition, this research seeks to identify client priorities for medication consultations and their perceived barriers to seeking consultation. Specifically, we examined three research questions: 1) what information do clients want from a pharmacist, 2) what barriers interfere with clients asking their questions of pharmacists, 3) does brief exposure to a short brochure on pharmacists' roles increase client knowledge of pharmacist roles with respect to patient consultation and monitoring prescription appropriateness. The third question had the following testable hypothesis. Experimental group clients exposed to an informational brochure regarding the pharmacist's role will know pharmacists' roles more accurately than do control group clients. A significance level of .05 was selected for evaluating differences between the control and experimental groups. Client characteristics such as age, gender and number of prescriptions filled in the past 6 months were not expected to influence client knowledge of pharmacist roles, however were collected to help ascertain if control and experimental groups were similar.

To serve the research purposes of this study, pharmacists from a convenience sample of 20 community pharmacies serving as Pharmacy externship sites in Madison and surrounding small towns were asked to participate in the study. Head pharmacists from 19 of the pharmacies agreed to participate. The sampled pharmacies reflect variation in types of ownership (i.e., 48% independent and 52% chain) similar to national data compiled from the National Council of Prescription Drug Programs and National Association of Boards of Pharmacy (19). The 1994 data show the ratio of independent to chain community pharmacies is 48% independent to 52% chain pharmacies. Our sample included seven independent pharmacies, two pharmacies from a very small franchise, and ten chain pharmacies. Three of the pharmacies were located in small towns surrounding Madison, and the remaining 16 pharmacies were within Madison. The pharmacies were scattered throughout the city in census tracts with varied socioeconomic status. Recent Wisconsin pharmacy patronage research suggests that conve-

nience and location are the two most important factors for clients to select a pharmacy (20). Hence, it is likely that clients in the sample were drawn largely from locations near the pharmacies. No more than 20 patrons from each pharmacy were enrolled in the study to help protect against bias introduced by any single pharmacy. To be a study participant, clients had to be English-speaking adults having a prescription filled. A total of 355 pharmacy clients were enrolled in the study. Clients were sampled across a two day period, taking 1–2 people each hour in order to enroll a variety of participants. An 83% participation rate was achieved, with "lack of time" the most frequently cited reason for client nonparticipation.

A post-test only with control group experimental design was used to measure the impact of the intervention (21). Half of the clients enrolled from a pharmacy served as controls and half from the same pharmacy served as the experimental group. On the first day of the data collection in a pharmacy, all enrolled participants served as the control group within the pharmacy. On the second day of the data collection, all enrolled participants served as the experimental group. The control group completed a survey to identify their knowledge of a pharmacist's roles, their medication information needs and perceived barriers to receiving this information from pharmacists. Participants in the experimental group received and were asked to read a brief brochure on a community pharmacist's role and training and then completed the same survey. The self-administered survey questionnaire which evaluated client's expectations of community pharmacist roles and consultation was completed by control and experimental group participants prior to leaving the pharmacy.

Assignment to control and experimental groups was separated temporally, to prevent contamination of the control group through inadvertent exposure to the brochure information. By having both control and experimental groups drawn from the same pharmacies, we controlled for patron characteristics which may vary between pharmacies. Further, by drawing both control and experimental groups from the same pharmacies the study design ensured pharmacy organization characteristics would be the same for the control and experimental groups when data was aggregated.

The questionnaire and data collection procedures had been pilot tested with 54 patients prior to the study. The revised survey asked participants what questions they most want their pharmacist to answer when they get a new prescription, whether they have different questions they'd like to ask the pharmacist when they get a prescription refilled, why people might not ask the pharmacist their questions, and how many years they believed pharmacists go to college after high school. In addition, 6 true/false items on the pharmacist's role asked whether the pharmacist: 1) keeps records of prescriptions and allergies for each patient (true); 2) checks prescription for allergies only if the client or doctor requests it (false); 3) checks the patient profile for any possible interactions between prescription drugs the patient is taking (true); 4) provides consultation by state law (true); 5) calls the doctor if the pharmacist finds a problem with the prescription (true); 6) is legally responsible that label information is correct on the patient's medication container (true). Respondents were asked to estimate how much formal schooling after high school was required for pharmacists. Background information was gathered on the participants' gender, age, and how many times they received prescription medicine

at a pharmacy in the past six months. The survey took 3–5 minutes to complete.

Analysis

Basic descriptive statistics were calculated for all response categories. A coding protocol was designed to categorize responses to the two open ended questions. To do this, two coders independently categorized client responses to identify logical coding groups. One coder categorized all responses after establishing consistency of coding responses with the coding protocol. To test the hypothesis that the brochure would have an impact on consumer knowledge of the pharmacist's role and training, a chi square statistic was used.

RESULTS

Several background variables were collected on each participant including gender, age, number of times the person received prescription medication from a pharmacy in the past six months. In addition we coded whether the community pharmacy which was the site of data collection was chain or independent and also the length of time since the head pharmacist graduated from school. About two thirds (i.e., 67%) of the sample was female. The sample was relatively young with 49% below 40 years of age, 35% between 41 and 65 years of age, and 16% above 65 years of age. In spite of the younger sample, 41% had been to a pharmacy for a prescription medication 5 or more times in the past six months. Only 8% had not received a prescription medication from a pharmacy in the past six months.

Information Desired

In response to the question, "What questions do you most want your pharmacist to answer when you get a new prescription?", the most frequently cited question concerned what the side effects of the new prescription would be. Sixty percent of the respondents reported they would like to have their pharmacist provide information about side effects, while 51% indicated they would want their pharmacist to address questions related to directions for taking the medication. Other topics were listed less often by respondents (See Table I).

Barriers to Client Question-Asking

Given client interest in receiving information about specific topics from the pharmacist, we wanted to examine perceived barriers to receiving desired information about prescription medications. Respondents were asked, "Can you

help us understand why people might not ask the pharmacist their questions?". Four primary barriers were identified by pharmacy patrons and several were cited equally often with about the same frequency (See Table II). Respondents identified patient and pharmacist related factors. When asked if they would have different questions if they were coming back to have a prescription refilled, 82% said "no."

The two most frequently cited reasons for not asking the pharmacist questions were: 1) fear or embarrassment; and 2) uncertainty a pharmacist should be asked questions. While pharmacy site barriers, including physical layout and pharmacist time limitations, were cited by 18% of the consumers, fully 17% indicated trust or loyalty to their doctor was a barrier to having questions answered by the pharmacist. Some patients said they would feel disloyal to their doctor if they asked questions to a pharmacist.

Test of Brochure Intervention

A central question in this study was how easily client knowledge of pharmacist roles could be increased, particularly with respect to patient consultation and prescription monitoring. Building on role theory, we tested the hypothesis that experimental group clients exposed to an informational brochure regarding the pharmacist's role will have more accurate knowledge of pharmacists' roles than control group clients have. Before testing the hypothesis, it was critical to test for differences between the control and experimental group clients since the post-only experimental design used in this research assumes comparability of groups (21). Gender, age, and prescription patterns in the past 6 months were evaluated for the two groups. There were no differences in the composition of gender ($p = 0.74$), age ($p = 0.60$), and times the client received a prescription in the past 6 months ($p = 0.75$). Since the control and experimental groups were drawn from the same pharmacies there was no need to test for differences in pharmacy characteristics between the control and experimental groups.

Patient knowledge about six dimensions of the pharmacist's role were examined. Three response categories were provided: 1) true; 2) false; 3) ?. The null hypothesis was rejected for four items demonstrating significant differences between the control and experimental groups' perceptions of pharmacists' roles (See Table III). Within the control group only 52% correctly believed the pharmacist always checks for possible drug interactions and only 55% correctly believed pharmacists were required to provide appropriate patient consultation for prescriptions under state law. These percentages were raised to 73% and 68% respectively in the experimental group receiving

Table I. Percent Who Want Pharmacist to Answer Questions (N = 355)

Desired Topics for New Rx		% ^a
SIDE EFFECTS	(Symptoms & what to do if occur)	60%
DIRECTIONS	(When, how often to take; missed dose response; storage)	51%
INTERACTIONS	(Interaction with food, alcohol, other medicine)	25%
ADMINISTRATIVE	(Refills, insurance, generic available, price)	16%
ACTION/INDICATION	(What drug does, when takes effect, effectiveness)	12%
OTHER	(Contraindications, continuity of therapy, monitoring)	14%

^a Percentages do not total 100% since up to three responses were accepted from respondents.

Table II. Percent Who Cited Barriers to Consultation (N = 342)

Perceived Barriers	% ^a
FEAR/INTIMIDATION	22%
LACK OF AWARENESS	20%
PHARMACY BARRIERS	18%
TRUST/LOYAL TO MD	17%
PATIENT BARRIERS	7%
MD ANSWERED Q'S	4%
OTHER	8%

^a Percentages do not total 100% because some respondents did not answer this question.

the brief brochure. In addition, more respondents in the intervention group (i.e., 60%) accurately identified the number of years of post-high school education required for pharmacists than did the control group respondents (i.e., 25%).

The effects of age, gender and number of times a patient received prescription medications in the past 6 months from a pharmacy were examined in relation to the patient's knowledge of each of the items. There were no significant effects of these three variables on patient knowledge of pharmacists' roles with the following three exceptions: 1) 18% of patients 66 years or older correctly thought the pharmacist checks the record for allergies versus 35% of the patients age 18-40 ($P = .0003$); 2) 78% of clients age 18-40 correctly thought the pharmacist calls the doctor if problems are seen versus 91% of clients who are 41 years or older ($P = .0085$); and 3) 66% of people with no prescriptions in the past six months correctly said the pharmacist keeps a record of prescriptions and allergies versus 87% of people with 4+ prescriptions in the past six months ($P = .02$).

We examined the possible effect of two pharmacy variables on the intervention impact. It was possible that type of ownership (chain versus non-chain) and also number of years since the head pharmacist graduated might have an effect on intervention impact. To examine the possible effect of type of ownership on intervention impact, participating pharmacies were categorized by ownership type as either chain or non-chain. Chi-square tests were used to analyze whether there were any significant differences in the impact of the intervention on patient knowledge. There were no significant differences between chain and

nonchain pharmacies in the intervention impact for any of the survey items. To examine the impact of years since graduation we divided the pharmacists into two groups: 1) a group who graduated 0-19 years ago; 2) a group who graduated more than 19 years ago. Chi-square tests were again used to analyze whether there were any significant differences in the impact of the intervention on patient knowledge. There were no significant differences between the two groups of pharmacists in the intervention impact for any of the survey items.

These results should be interpreted within the limitations of this study. First, respondents' perceptions were based on the viewpoint of the pharmacy profession and the administrative rules that govern pharmacy practice in Wisconsin. It would be useful to extend the study to other states to test for regional variation in client perceptions of what information they wish to receive from pharmacists and the factors they believe prevent asking questions of pharmacists. Second, both control and experimental groups may have given what they perceived to be socially desirable responses to survey items since they were in a pharmacy setting while completing the questionnaire and reading the brochure. This makes the significant difference between control and experimental groups all the more interesting. If so, knowledge scores may be artificially inflated and client expectations of pharmacists lower than reported. Third, since the control group did not receive an intervention beyond reading the brochure, one might ask if receiving the brochure caused a placebo or Hawthorne effect. A last piece of client knowledge data we collected is relevant to this issue. Although it had not been a major focus of the study, respondents were

Table III. Percent Patients Correct About Pharmacist's Role (N = 355)

Item	Control (n = 182)	Exper. (n = 173)	Chi-Sq. p-value
A pharmacist always checks your record to see if your prescription might interact with your other prescriptions.	52%	73%	0.001
The pharmacist is required by state law to provide you with appropriate consultation every time a new or refill prescription is dispensed.	55%	68%	0.017
A pharmacist checks your prescription against possible allergies only if you or your doctor request it.	25%	35%	0.037
The pharmacist always keeps a patient record of your prescriptions and allergies.	79%	90%	0.008
The pharmacist is legally responsible that the information on the label of your bottle is correct.	80%	86%	0.148
If the pharmacist finds a problem with your prescription, he/she calls your doctor.	84%	85%	0.967

asked to estimate the number years of schooling beyond high school required of pharmacists in the state of Wisconsin. The brochure contained one sentence on this point. Contrary to our expectation, the survey found more of the control group clients (ie., 39%) overestimated the actual amount of schooling required for pharmacists in Wisconsin than did the experimental group (ie., 23%). It is interesting to note that older pharmacists were perceived as having significantly more schooling than were younger pharmacists ($p < .03$). The experimental group was significantly more likely to estimate the length of training accurately than was the control group ($p < .001$). This suggests that the brochure helped to refine the knowledge of readers beyond any additional placebo or Hawthorne effects. It is worth noting that simply asking clients to pause and consider what are pharmacist roles and training through the survey is itself an intervention. If so this may have helped to diminish any Hawthorne effect of the brochure. However, a separate study would be necessary to confirm this.

DISCUSSION

The first research question addressed by this study was what type of information is desired by clients from their pharmacists. By far the most frequently cited topic which respondents indicated they wanted discussed was side effects of their prescription medications. This finding is consistent with other studies documenting a patient desire for more information regarding side effects (22,23). In this study, 60% of all respondents indicated they wished to get this information from their pharmacist. The second most frequently cited information sought was directions for taking the medication, mentioned by 51% of the respondents. There has been a debate in the past as to whether discussion and knowledge of side effects would cause clients to discontinue their medications as a result of imagined side effects. However, recent research suggests that awareness of possible side effects does not encourage discontinuation (24,25). The larger question may be how best to discuss side effects so that clients understand what somatic cues they should attend to and what action they can take to prevent or respond to the side effects if they occur. Because of pharmacists' unique knowledge base regarding drug action, this medication consultation role is appropriate and consistent with professional training expectations for their roles. Hence expanding consultation to address the side effect issue would have role congruence for clients and pharmacists.

The second research question concerned why people might not ask the pharmacist their questions. No single barrier emerged. However, 42% of the respondents reported that either they feared the embarrassment of a stupid question or were unaware that they could ask pharmacists for drug information. This suggests that pharmacists must give direct cues that they expect and want to take an active patient consultation role. Fully 18% of respondents referred to pharmacy barriers to consultation which provide the opposite cues—that pharmacists do not wish to take an active patient consultation role. Clients reported barriers such as the pharmacist being too busy or rude, standing behind and above physical barriers, lacking privacy, and having a clerk give the patient their prescription. These cues become all the more important since 17% of the respondents indicated that their trust and loyalty to a physician was an important reason questions might not be asked of pharmacists.

Hence, pharmacists' professional identity has to be considered in relation to the physician role to reduce any perceived incongruence related to medication consultation. It was interesting that only 7% mentioned patient barriers such as feeling ill, being too busy, being distracted by children. The overall pattern of responses suggests that many of the barriers are within the control of the pharmacy profession to influence. It would be useful in future studies to ask patients what makes it easier to ask a pharmacist a question.

The third research question involved a test of whether exposure to a short brochure on pharmacists' roles could alter clients' knowledge of pharmacists' roles. Using a distinction between efficacy and effectiveness studies from classical epidemiology terminology (26), the purpose of this study was not to test the *efficacy* of the pamphlet to increase knowledge, more easily done in a laboratory situation. Rather the goal was to test the *effectiveness* of the brochure intervention to increase at least short term knowledge of patrons who were in the intended application setting, in this case the community pharmacy. We knew it was likely that participating clients would vary in their attention to the pamphlet and comprehension of its contents, but this variation reflects the realistic circumstances the intervention would face. This study documented that even brief exposure to the pamphlet in a community pharmacy resulted in a significant improvement in knowledge about the pharmacist's role for four out of the six dimensions. The survey also found that the brochure increased the accuracy of client knowledge of schooling required by pharmacists. Almost 40% of the control group clients overestimated the schooling which pharmacists receive, reflecting how respected the profession is. The findings suggest that at least for the short term, increasing clients' knowledge of pharmacists' roles and responsibilities may not be as difficult as commonly expected. The finding that older pharmacists were perceived as having significantly more schooling than were younger pharmacists suggests that the respect accorded pharmacists may increase with the age of the pharmacist, with the public being unaware that training requirements have increased for new pharmacists entering the profession.

The findings also confirm the need for interventions to reduce clients' tendency to underestimate critical functions of pharmacists. Only a little more than half of the respondents in the control group understood that a pharmacist checks a prescription for possible interactions with other drugs on the patient's medication profile and that a pharmacist is required by state law in Wisconsin to provide clients with appropriate consultation every time a new or refill prescription is dispensed. A significantly higher proportion of the intervention group respondents understood these were part of the pharmacists' role. It appears that not only are some of the key elements of pharmaceutical care roles of pharmacists not known by clients, but that relatively inexpensive methods can be used in pharmacies to educate clients. There is an important policy question as to why so few people know about state regulations passed on their behalf. Does the state have the responsibility to inform the public about their "rights" and pharmacist "responsibilities". In this case, little has been done to inform the public.

Future research can build on the findings of this work by addressing several unanswered questions. Since this study measured short-term impact of the brochure on client knowledge, it would be useful for future research to evaluate long-

term impact on knowledge of clients to test the longevity of brochure effects. Given regional, socio-economic status, cultural and literacy differences in client populations, a second useful research agenda would be to identify and evaluate an array of strategies responsive to these client differences. A third research agenda would be to evaluate whether these strategies impact client behavior, specifically do they increase the likelihood that patients will ask pharmacists their unanswered medication related questions. A fourth research agenda is to identify the extent to which the lower expectations of pharmacist roles is accurate, that is to link the patients' knowledge of pharmacists with the behaviors of their specific pharmacist. It may well be that clients with lower expectations accurately reflect the behaviors of their own pharmacists.

In closing, the pharmacy profession has an important opportunity to respond to clients' informational needs if it can reduce key barriers which impede clients from using pharmacists freely as an information source. The profession has already expended considerable resources educating and planning how new graduates can play this consultation role. It is important that this training not occur in a vacuum, but that the profession also consider the need for congruent role expectations on the part of clients. This in turn implies that an equally important, although largely overlooked, research and educational agenda should be to address how best to educate and encourage clients to become partners in the pharmaceutical care models being proposed. To the extent that client interventions can successfully increase patient knowledge congruent with actual pharmacist roles, one less barrier in the transition to pharmaceutical care exists.

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