



Patients with epilepsy's perception on community pharmacist's current and potential role in their care

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ABSTRACT

A cross-sectional study was conducted surveying patients with epilepsy about the current and potential role community pharmacists play/could play in their care. Seventy-five patients (mean age = 38.9 years, 66% female) were enrolled, either from the outpatient epilepsy clinic or from the local Epilepsy Foundation database. Patients were asked a series of questions about six aspects of their health care, as well as which of these aspects would be important to discuss with their pharmacist and what type of relationship they currently have/desire with their pharmacist. Results indicated that patients most commonly use their pharmacist for two aspects of their health care: drug interaction information (65%) and adverse effect information (56%). Fewer patients use their pharmacist for the four other aspects of their care: seizure frequency (13%), antiepileptic drug adherence (27%), medication profile (39%), and impact of their disease on their lifestyle (27%). Many patients want their pharmacist to be more involved in their health care, especially regarding drug interactions (76%), discussing adverse effects (74%), and maintaining a complete medication profile (61%). Patients also desired that their pharmacist communicate with their epileptologist about drug interactions (69%) and adverse effects (64%). Although many patients reported having a good relationship with their community pharmacist, a large concern was lack of privacy for holding conversations and lack of desire to pay for such pharmacy services if available. Overall, these results indicate that the majority of patients with epilepsy do not use their pharmacists to their full potential, yet certainly desire to do so, especially regarding drug interactions and adverse effects. Both pharmacists and patients should strive to form better partnerships that would allow them to take advantage of existing opportunities to enhance patient outcomes.

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1. Introduction

The pharmacist remains one of the most accessible and trusted health care professionals. Community pharmacists' responsibilities extend beyond dispensing medications. They play a significant role in educating patients about their diseases, explaining side effects, encouraging adherence, ensuring accuracy of dosing, and alerting patients and prescribers to potential drug–drug interactions. This application of the pharmacist's expertise is commonly referred to as medication therapy management [1]. The significance of this role is proportional to the patient's complicated health condition. Studies have demonstrated improved patient outcomes in anticoagulation [2], diabetes [3,4], asthma [5], and hyperlipidemia [6] when pharmacists have been involved with providing care.

Epilepsy is a common neurological disease. The chronic nature of epilepsy, the prevalence of many systemic and psychiatric comorbid conditions, and the fact that seizures in 25–35% of patients with epilepsy (PWE) are not easily controlled make it very likely that many PWE will take antiepileptic drugs (AEDs) and other medications for a significant portion of their life. This chronic therapy creates an opportunity for pharmacists to play a major role in the care of PWE.

Previous work has identified that primary care physicians would like to have community pharmacists play a larger role in the chronic care of patients with epilepsy, specifically with respect to managing a complete medication profile and screening for drug interactions [7]. In that same report, though pharmacists were willing to consider being more involved with the care of PWE, they identified barriers to participation such as not having adequate time, staff, and/or reimbursement. Information on the relationship between PWE and their community pharmacists is lacking. It is our impression that the partnership between PWE, community pharmacists, and the epilepsy clinic could be enhanced with great potential for achieving positive patient outcomes, much like what has been demonstrated in other disease states.

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The primary objective of this study was to explore the opinions of PWE about the role a community pharmacist currently plays/ could play in their chronic care. A secondary objective was to learn more about where PWE get information on epilepsy and its treatment.

2. Methods

This cross-sectional study was approved by The Ohio State University's (OSU) Biomedical Institutional Review Board. Adult patients (≥ 18 years old) with epilepsy who had the ability to complete the survey and who were taking at least one AED that was obtained at a community pharmacy were recruited.

A survey was developed. It was modeled after a previous instrument that was used to ask pharmacists and primary care physicians about aspects of care of PWE [7]. For the purpose of our survey, a community pharmacist was defined for the patients as "the pharmacist that you interact with when you visit your local pharmacy".

The survey had four sections. The *Aspects of Care Section* asked patients to rate the perceived usefulness of six aspects of care: keeping a seizure calendar, using a method to remember to take their medicines, determining if their medicines interact with each other, maintaining a complete and current medication profile, recognizing adverse effects, and finding out how epilepsy affects their quality of life. Additionally, patients responded "yes" or "no" to identify which of the six aspects they currently discuss with their community pharmacist, which of the aspects they would like to discuss, and if they would like their community pharmacist to communicate with the epilepsy clinic regarding that aspect of their care.

The *Relationship Section* asked patients five questions concerning the relationship they currently have with their community pharmacist. These included queries on knowledge, time, space, and staff. Patients were asked about their interest in a consultation session with their pharmacist and the perceived value of pharmacist-provided services. Patients responded by choosing one of five statements about payment options for the service. At the end of this section, patients answered a question about participating in collaborative care between their community pharmacist and the epilepsy clinic.

The *Information Section* addressed the secondary objective. Patients were asked to identify their current sources of information on epilepsy and its treatment.

The *Demographic Section* inquired about pertinent patient characteristics (age, gender, etc.).

Patients were recruited in one of two ways. OSU outpatient epilepsy clinic patients who fit the criteria were approached by one of the investigators (J.M. or M.M.) while in clinic for their routine appointment. After agreeing to participate and signing the consent, they completed the paper version of the survey. The data from completed paper surveys were entered into an Excel spreadsheet for analysis. The other patient recruitment method was via email invitation to 150 patients in the Epilepsy Foundation of Central Ohio's database. The email invitation contained a link to the same survey questions in Zoomerang (www.zoomerang.com). A cover letter, before the survey questions, described the rationale behind the survey and stated that by completing the survey, the patient was providing consent to participate in the one-time survey. Patients were asked not to complete the online survey if they had completed it at the OSU clinic. As an incentive for completing the survey, patients were told they would be eligible for one of two \$25 gift certificates to a local store. These were drawn at random after the project was completed.

2.1. Data analysis

Descriptive statistics were used to characterize the data.

3. Results

Forty-three patients from the OSU epilepsy clinic and 32 patients from the central Ohio's Epilepsy Foundation database were recruited; the patients were pooled ($n = 75$) for analyses. The 32 patients recruited via the Internet represent a response rate of 21%. Patient demographics are summarized in Table 1. The mean age was 38.9 years, and two-thirds of the respondents were female.

Table 2 contains the scores for the questions addressing the perceived usefulness of six aspects of patient care. Patients rated "finding out if medications interact" as being most useful (4.51 of 5), followed by "trying to improve my quality of life" (4.44 of 5). Interestingly, patients felt that the least useful aspect of care was maintaining a seizure calendar (3.17 of 5).

When asked about discussing the aspects with their community pharmacist, patients clearly identified two items (more than 50% responding "yes"), determining drug interactions and discussing adverse effects, indicating they were having conversations about these items already (Table 3). When asked about what aspects they would like to discuss with their pharmacist, a third aspect (on which more than 50% of patients responded "yes") joined the other two: keeping a complete and current list of medicines (61%).

In general, patients responded favorably when asked to rate their community pharmacist (Table 4). Patients scored pharmacists highest on having an overall good relationship with patients (3.61 of 5), followed closely by having time for discussions with patients (3.49 of 5) and having a good knowledge base about epilepsy (3.37 of 5). A concern raised by the patients was adequate space to have private conversations. This question scored lower than the others (2.54 of 5).

When asked about their willingness to participate in collaborative care between their community pharmacist and the outpatient epilepsy clinic, 49% of the patients answered "yes", 41% answered "maybe," and 10% answered "no." Generally, patients were in favor of this partnership as is evidenced by combining the "yes" and "maybe" numbers, which accounts for 90% of the sample. However, many patients are not willing to pay for detailed sessions with their pharmacist (Table 5). Nearly one-third of the patients (30%) would participate only if their insurance paid 100% of the fee. Another fifth of patients stated they would not pay for detailed sessions as they felt it is something they should not have to pay for.

Table 1
Demographics of respondents ($n = 75$)

Age (years)	38.9 (± 12.6) ^a
Male/female	34%/66%
Race	
White	90%
African-American	9%
Other	1%
Residence	
Suburb	40%
City	31%
Rural area	15%
Small town	14%
Medication payment method	
Nongovernmental insurance (private, HMO, etc.)	62%
Medicaid	13%
Medicare	13%
Self-pay	12%

^a Data are means (\pm SD).

Table 2
Perceived usefulness of six aspects of care

Aspect of care	This aspect of care is useful to me ^a
Keeping a seizure calendar	3.17 (± 1.65)
Using a method to remember to take my medicines as directed	3.91 (± 1.54)
Finding out if my prescription or over-the-counter medicines interact with each other	4.51 (± 0.92)
Keeping a complete and up-to-date list of all of my medicines	4.27 (± 1.20)
Discussing side effects or problems related to my medicines	4.29 (± 1.18)
Trying to improve my quality of life	4.44 (± 1.06)

^a Mean (\pm SD) score as measured using a 5-point Likert scale (1 = not at all, 5 = extremely).

Finally, **Table 6** summarizes data pertaining to the secondary objective of the study as to where patients receive information about epilepsy and its treatment. The majority (63/72) receive this information from their epilepsy clinic or another doctor's office. The second most frequent source was the Internet, with 39 patients choosing this option. The most visited website was www.epilepsy.com, followed by www.epilepsy-ohio.org, the website for the local Epilepsy Foundation affiliate.

4. Discussion

The most important aspect of care to patients in this survey was avoiding drug interactions. Although all aspects of care presented to patients were important, it appears that there is a probable disparity between what patients want or think is important and what health care professionals believe is important in the care of PWE. We believe that most epilepsy clinics place improving quality of life as their top priority in the care of PWE. Patients in our study confirmed this by ranking that aspect near the top in usefulness. However, epilepsy clinics emphasize the importance of drug adherence and keeping seizure calendars to monitor the success of treatment. These two issues did not seem to be as important for patients as we thought they would be. This could be due to the fact that our survey respondents believe that they are adherent and are able to keep track of their seizures without a calendar.

It is clear from our data that patients' perceptions about their community pharmacists reflect their beliefs or observations that most pharmacists are practicing a more traditional role (providing drug interaction information and reviewing side effects). Most PWE did not believe or have not experienced pharmacists carrying out the expanded role of medication therapy management. In addition, patients did not seem interested in having pharmacists help

them with adherence, tracking their seizures, or improving their quality of life. This lack of interest could be due to many factors: (1) patients may not know that pharmacists can provide such services, (2) patients may not believe that pharmacists can or should provide such services, and/or (3) these services may not be very important to patients (although patients considered improving quality of life the second most useful aspect of their care). Beyond the aspect of care data, our results indicate that only 30% of patients would participate in more pharmacy-managed services, even if their insurance covered the entire cost. We believe we have uncovered in PWE what Schommer and colleagues have described as a disconnect between how pharmacists and patients differentially view the pharmacist's role in medication risk management and risk assessment [8]. Patients view the physician as being primarily responsible for medication management. Pharmacists view their role as adding unique value to a patient's health, whereas patients do not view the pharmacist in the same manner. There is a definite need to define the pharmacist's role to convince patients, prescribers, and payers to accept and assign value to those roles. If the gap can be narrowed between patient and pharmacist views on the pharmacist's role, the effectiveness of pharmacist services could be enhanced. One way to narrow the gap is better patient education on the positive outcomes demonstrated by pharmacy-managed programs in patients with diabetes [3,4], asthma [5], and hyperlipidemia [6]. Similar gains could be achieved in safety, cost, and quality of life in PWE. Tinelli and colleagues have demonstrated that patients had an attitudinal shift toward the pharmacist after experiencing a pharmacy-led medication management service in England [9]. Additionally, pharmacist job satisfaction could benefit as they desire devotion of more time in consultation and drug use management [10].

In an ideal setting, community pharmacists could work with PWE on their routine care between visits to see their neurologist at the epilepsy clinic. For example, pharmacists could use their counseling skills to work with patients on AED adherence. Beyond face-to-face counseling between PWE and their community pharmacists, many pharmacies offer additional adherence assistance through technology including phone and email reminders for prescription refills. This adherence assistance alone could reap significant benefits for PWE, as a recent article has shown that decreased adherence is associated with more than a threefold increase in mortality [11]. Periods of nonadherence were also associated with significantly more emergency department visits, hospital admissions, and so on. One could assume that the increased morbidity would lead to decreased quality of life in PWE and also result in higher costs to patients and the health care system.

Beyond adherence, having PWE interact with their pharmacist to discuss adverse effects could be beneficial in many aspects. Not only should PWE and their pharmacists be discussing adverse

Table 3
Interaction between aspects of care and community pharmacists

Aspect of care	Currently discuss with my community pharmacist (% yes)	Would like to discuss with my community pharmacist (% yes)	Would like my community pharmacist to communicate with epilepsy clinic regarding this aspect of my care (% yes)
Keeping a seizure calendar	13	20	18
Using a method to remember to take my medicines as directed	27	26	28
Finding out if my prescription or over-the-counter medicines interact with each other	65	76	69
Keeping a complete and up-to-date list of all of my medicines	39	61	49
Discussing side effects or problems related to my medicines	56	74	64
Trying to improve my quality of life	27	43	40

Table 4
Patient ratings of their pharmacists

Questions	Mean \pm SD ^a
Do you feel you have a good relationship with your community pharmacist?	3.61 \pm 1.19
Do you feel your community pharmacist is knowledgeable about epilepsy?	3.37 \pm 1.21
Do you feel your community pharmacist has the time to discuss your condition and medications thoroughly?	3.49 \pm 1.27
Do you feel your community pharmacist has the space to privately counsel you about your condition and medications?	2.54 \pm 1.33
Do you feel your community pharmacist has the staff to make himself/herself available to discuss your condition and medications?	3.23 \pm 1.31

^a Measured using a 5-point Likert scale (1 = not at all, 5 = extremely).

Table 5
Patient responses to the question “Would you be interested in a more detailed consultation/coaching session with your pharmacist about your condition and drugs?”

Option	Frequency of response (%)
Yes, if my insurance paid 100%	30
Yes, if my insurance only charged my co-pay	13
Yes, if I had to pay out-of-pocket	1 ^a
No, I would not participate because I do not think I should have to pay for this information	22
No, I would not participate for other reasons	34

^a The lone patient who was willing to pay out of pocket chose \$30 for 30 min.

Table 6
Patient responses to “Where do you currently get information on epilepsy and its treatments?” (*n* = 72)

Information source	Number of responses ^a
This clinic/your doctor's office	63
Internet	39
Other	15
Community pharmacy	14
Newspaper	8
Television	6

^a Respondents could name more than one source.

effects, but the pharmacists could aid PWE in reporting problems with AEDs (seizures or toxicity) through surveillance systems like FDA's MedWatch program [12]. The benefits of this patient-pharmacist interaction could extend beyond PWE to the health care system in general.

The use of technology to enhance the patient-pharmacist interaction could aid in the attainment of better patient outcomes. Online resource aids offered by many pharmacies include detailed drug information, “ask a pharmacist,” health history, and a drug interaction checker. As our PWE identified drug interaction screening as a useful and desired aspect of care, this latter tool could prove especially helpful to patients if they use one pharmacy for all of their medication needs. This way, pharmacists can know all of the medications in a patient's profile, including all prescription and over-the-counter medications, supplements, herbs, and vitamins. Accessing the online resources is not limited by time and many pharmacies now offer 24-hour walk-in or drive-up service. One option could be that PWE could use the online resources at their leisure and then schedule an appointment to meet with their pharmacist to discuss the findings/information in more detail.

Overall, surveyed patients were satisfied with the service provided to them by their community pharmacists. The lack of “private space” to counsel patients reflects the fact that most community pharmacies do not have such spaces. Although patients do not object to getting counseling from pharmacists, they are not willing to pay for it; however, it is not clear from our results what is/are the reason(s) for that (financial or not believing that this service helps). Though there is not a typical rate for detailed pharmacist consultation services, rates can range from \$60 to \$180 per hour. This could be a significant barrier for some patients, especially if their insurance does not cover these costs. Interestingly,

there is evidence that inpatient pharmacist-managed AED therapy has both economic and clinical advantages over hospitals without this pharmacist-managed therapy [13]. Bond and Raehl reported significantly higher death rates, longer lengths of stay, higher total Medicare charges, higher per-patient drug charges, and higher laboratory charges in hospitals without pharmacist-managed AED therapy.

As expected, the majority of education provided to PWE about their condition was delivered in the clinic. The fact that 39 of the 72 (54%) responders get information about their condition from the Internet highlights the growing role of the Internet in delivering health information [14], though higher percentages of those with Internet service (75–80%) who have looked online for health information have been reported [15]. Only 15% of our responders got information from their pharmacists, which validates the findings throughout this survey that pharmacists' role in education is still marginal. Our results may have been different had we recruited patients from the community pharmacy, rather than from the epilepsy clinic and via email.

Our study is not without limitations. These include a modest number of patients (mostly women) from central Ohio, so the results may not be generalizable. We had only a 21% response rate from the email invites; perhaps the respondents are from a more motivated patient population. This low response rate must be considered when examining our results. Our patient-directed survey was modified from a previously used instrument designed to gather data from health care professionals. We did not validate our survey instrument. Additionally, we assumed the persons completing the survey online understood the information as they did not have ready access to anyone to answer questions. Finally, it was a cross-sectional design so patients had only one opportunity to provide their opinions. Perhaps we would have seen a difference in response if we assessed patients at baseline, did an intervention describing pharmacy-managed services, and then reassessed the patients. Because of these limitations, our findings should be viewed with caution and are a basis for more research in this area. Areas ripe for further exploration include, but are not limited to, determining what information is important to patients and encouraging patients to use their community pharmacists for more than a traditional role.

Pharmacists can play a significant role in delivering education and information to PWE. For that role to be practical, it has to overcome three hurdles: narrowing the gap between patients' and pharmacists' views of the pharmacist's role, determining who will

reimburse pharmacists for their time, and determining if such pharmacy-managed services will have a positive impact on the care of PWE.

In conclusion, these results indicate that the majority of patients with epilepsy do not use their pharmacists to their full potential, yet certainly desire to do so, especially regarding drug interactions and adverse effects. Both pharmacists and patients should strive to form better partnerships that would allow them to take advantage of existing opportunities to enhance patient outcomes.

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