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Patients' Experiences Using a Brief Screening Tool for Medication-Related Problems in a Community Pharmacy Setting: A Qualitative Study

Amanda R. Kernodle, PharmD^a, Caitlin K. Frail, PharmD, MS, BCACP^b, Stephanie A. Gernant, PharmD, MS^a, Karen Pater, PharmD, BCPS^c, Brad Doebbeling, MD, MSc^d, and Margie E. Snyder, PharmD, MPH^a

^aUniversity of Texas College of Pharmacy at Austin, 2409 University Ave., Stop A1900, Austin, TX 78712-1113

^bUniversity of Minnesota College of Pharmacy, 5-130 Weaver-Densford Hall, 308 Harvard St. SE, Minneapolis, MN 55455, USA

^cNova Southeastern University College of Pharmacy, 3301 College Ave., Ft. Lauderdale, FL 33314

^dUniversity of Pittsburgh School of Pharmacy, 3501 Terrace St., Pittsburgh, PA 15261, USA

^eIndiana University Purdue University Indianapolis School of Informatics and Computing, 535 W Michigan St, Indianapolis, IN 46202, USA

^fPurdue University College of Pharmacy, 575 Stadium Mall Drive, West Lafayette, IN 47907, USA

Abstract

Objectives—The objective of this study was to explore patient perceptions and the practical implication of using a brief 9-item scale to screen for medication-related problems in community pharmacies.

Methods—Semi-structured, audio-recorded, telephonic interviews were conducted with forty patients who completed the scale and reviewed its results with their pharmacist. Audio-recordings were transcribed verbatim and analyzed using qualitative methods to identify themes.

Results—Patients generally reported the scale was simple to complete and could be used easily in other community pharmacies. Participants shared they had increased understanding of their medications, and confidence that their medication therapy was appropriate. Several patients

Corresponding Author at: Caitlin K. Frail, PharmD, MS, BCACP^b, Assistant Professor, Pharmaceutical Care and Health Systems, University of Minnesota College of Pharmacy, 7-174 Weaver-Densford Hall, 308 Harvard St. SE, Minneapolis, MN 55455 (USA), ckfrail@umn.edu, Phone: (612) 626-9280, Fax: (612) 625-9931.

akernodle@utexas.edu

stephaniegernant@gmail.com

paterks@pitt.edu

bdoebbel@iupui.edu

snyderme@purdue.edu

Other Affiliations: At the time of this study, Amanda Kernodle was a PharmD Candidate at Purdue University College of Pharmacy. Stephanie Gernant was a Community Practice Research Fellow at Purdue University College of Pharmacy.

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reported having actual medication-related problems identified and resolved through the use of the scale. Patients also reported improved relationships with pharmacists, and heightened belief in the value provided by pharmacists.

Conclusions—This screening tool may have value in increasing patients' understanding of and confidence in their medications, enhancing pharmacist-patient relationships, and identifying problems requiring additional interventions.

Keywords

pharmacy practice; patient education; medication use

INTRODUCTION

The Omnibus Budget Reconciliation Act of 1990 (known as OBRA '90) requires that pharmacists offer to counsel Medicaid patients receiving prescriptions, and identifies key components of medication information pharmacists must provide to these patients.¹ Providing medication-related education is one of the primary responsibilities of community pharmacists, but other responsibilities also include delivery of more comprehensive patient care activities, such as medication therapy management (MTM) and disease state management (DSM).² Identifying patients who require more intensive attention beyond standard OBRA '90 mandated counseling through such services as MTM is one challenge to providing care in the community pharmacy setting. Additionally, addressing patient-specific concerns as part of patient counseling, rather than simply relaying facts, is imperative to delivering personalized care and meaningful education. The use of patient questionnaires as medication risk assessments has been explored as one way of addressing both issues of patient identification and counseling personalization. Self-administered questionnaires have shown success in identifying patients at-risk for potential medication-related problems (MRPs).³⁻⁵ For example, Levy, et al validated a 10-item questionnaire comprised of dichotomous responses for use in the elderly population.³ A modified version of the Levy questionnaire has also shown increased referral to pharmacist services.⁴

Similarly, the nine-item medication risk assessment scale used for this study, which was modified from a previously developed 78-item pool,⁶ demonstrated modest success in identifying patients at-risk for MRPs in prior research.⁷ However, in contrast to previously developed scales which measure medication-related factors such as number of medications or medication class, this nine-item scale measures patients' perceptions of their medications by characterizing patients' concerns using a five-point Likert scale. The scale was developed with this in mind, as patient-reported concerns are an important factor in identifying those patients who would benefit the most from pharmacist intervention.⁸ Patients ranked their agreement with each item on the scale and each response was assigned a numerical value with total possible scores ranging from 1 to 45. Patients' score result was totaled to indicate their potential risk for medication-related problems based on prior research.⁷ Patients who have medication-related concerns may best be targeted for intensive pharmacist intervention to identify and resolve medication-related problems.

The objective of this study was to explore the practical implication of use of this previously developed scale in community pharmacies. Qualitative interviews were performed in order to explore patients' perceptions of the scale and use of the scale by the pharmacist when counseling.

METHODS

Study Design & Pharmacist Training

This study was approved by the Purdue University Institutional Review Board. This qualitative study was performed using data from telephonic patient interviews following completion of the nine-item scale and interaction with the pharmacist. Three research tools were utilized to gather data; the previously developed nine-item scale a patient questionnaire following participation in the pharmacy to capture basic demographics and a semi-structured interview guide. The interview guide and patient questionnaire were developed by the study investigators and no pilot testing was performed on these instruments. Pharmacists participating in the study were trained on the use of the scale and previously-identified threshold that indicated possible risk for medication-related problems (score results ≥ 15)⁷. Each response on the Likert scale was assigned a numerical value which was then summed to total the score results with possible total scores ranging from 9-45. However, pharmacists were encouraged to use the scale results in any manner they found useful during counseling and were intentionally not trained on a specific protocol or application of the results when counseling. Exploration of how patients perceived pharmacists' use of scale findings during counseling was part of this qualitative pilot.

Patient Recruitment & Data Collection

A convenience sample of patients were recruited at five outpatient pharmacies associated with the local county hospital in Indianapolis, Indiana by three investigators (MES, ARK, and SAG) as well as trained research assistants. Participating pharmacists were also recruited and provided informed consent for their participation. Patients were approached for study participation in the waiting area of the pharmacy and screened for eligibility. To be eligible, patients had to be a non-pregnant adult (21 years and older) patient of the pharmacy, using at least one regularly scheduled medication for a chronic condition, and who were comfortable reading and comprehending English. If interested and eligible, patients were asked to consider collectively all of their current medications, including all prescription, over the counter medications, vitamins, and supplements in all various dosage forms, and to complete the 9-item scale. (Appendix A) Researchers emphasized to patients that there were no right or wrong answers, and to answer truthfully based on their feelings towards their medications. Once completed, the scale was provided to the pharmacist for scoring. The pharmacist scored the scale and then engaged the patient in discussion of any medication-related concerns. Following pharmacist counseling, patients completed a 15-item questionnaire (Appendix B) containing eleven closed-ended items to capture demographics, and three open-ended items soliciting their opinions pertaining to use of the scale. Patients were offered a \$15 gift card for their completion of both the scale and questionnaire. Additionally, patients were given the option to provide their contact information to

participate in a follow up semi-structured interview conducted by telephone. An additional \$25 gift card was offered to participants for their time completing the interview.

No additional eligibility criteria were required to participate in the interview, and patients were invited for interviews based on order of enrollment. Telephonic interviews were chosen purposefully as a qualitative method to allow for open-ended patient reflection on their use of scale and interaction with the pharmacist. A semi-structured interview guide was developed (Appendix C) and modifications were made throughout the study to improve question clarity. One investigator (ARK) conducted all of the interviews by telephone which were audio-recorded and transcribed verbatim by a professional medical transcriptionist agency. Transcripts were confirmed against the audio-recording for accuracy.

Data Analysis

Transcripts were reviewed independently by two investigators (ARK and CKF) to identify initial conceptual codes. Initially, broad conceptual codes were developed and then sub-codes were further defined to better analyze each broad code. The two investigators coded independently and then compared and resolved discrepancies, with a third investigator (MES) offering feedback on the coding framework when discrepancies were not easily resolved. After all final codes were assigned to the text, each code was individually examined to identify themes. In addition to identifying overarching themes, the final coding patterns were examined for any differences in themes across specific demographic variables, including: age (dichotomized as greater than 50, or less than or equal to 50 years of age), sex, social support (dichotomized as married/living with others vs. single, divorced/separated or widowed), potentially at risk for MRPs according to the scale (score result 15), total number of medications (upper vs. lower quartiles), and education level (dichotomized as greater than high school graduate vs. high school graduate or less). A codebook and audit trail were maintained throughout the coding process. Qualitative analysis was conducted using MaxQDA v. 10⁹ and quantitative data were computed using SPSS v. 22.¹⁰

RESULTS

Forty patients across five outpatient community pharmacies associated with a local county hospital in Indianapolis, Indiana completed qualitative interviews, lasting approximately 15 to 40 minutes in length. Participants were 65% female, 47% African American, and 52 ± 10 years old on average (Table 1). Eighty-five percent of patients' results identified them as possibly at-risk for potential MRPs. Of these 40 patient interviews, the following themes were identified.

Use of Scale

Patients reflected on their personal experience with using the scale and how its results guided their interaction with the pharmacist. Verbal description of time spent completing the scale was calculated as a median 10 minutes across all patients (range: 2-30 minutes). Only ten patients (25%) recalled their pharmacist sharing their actual results with them, however

sixteen (40%) noted this would be valuable information. Generally, patients reported the scale was clear and easy to use.

“And there were things [on the scale] that you don't normally think of when you go into a pharmacy”

“I just felt good about it. I mean, because I understood all the questions. They were concerning myself so, therefore, I understand myself, my body.”

Some patients noted that certain questions took longer to answer than others, or were more difficult based on their own self-reflection process, but this was not related to the readability of the scale.

Despite the majority of patients reporting ease of use, a few difficulties with completing the scale were noted. Specifically, one patient noted the realization later that they unintentionally reverse answered the scale (i.e. chose “strongly disagree” rather than “strongly agree”). Another patient also noted that it was difficult to complete the scale based on the medications as a whole. They indicated it would have been easier to answer the questions based on their medications for each disease state.

“I think that some of them are good. But for me, with the amount of medications I take, I think it would be more helpful... if it had been like, about one specific set of drugs or group of drugs. Like, just about my diabetes drugs or just about my diarrhea problems... Then it would be easier to answer the questions just about those sets.”

Patients were asked how the pharmacist used the scale in their consultation (i.e. did they seem to review and point out specific items, note the results, or otherwise take the results into consideration). Patients reports' depicted that there was a wide variation in how pharmacists used scale results during consultation.

“We didn't even look at all of [the questions]. It's just a couple of them that I pointed out.”

“Well, she went through them one by one and explained to me what, you know, and then asked me what the problem was with these different things.”

Some participants noted it would be helpful for them to complete the scale again at regular intervals or when they had changes to their medications or during transitions in care.

“I think it would be extremely beneficial to someone who is transferring providers, whether that be a doctor provider or a pharmacy, and I could definitely see it being good maybe every six to 12 months, maybe once every six to 12 months being required to just check in with the pharmacist just to get that double look.”

Impact on Pharmacist

Patients reported broadly on how they imagined the use of the scale ultimately impacted their pharmacist's delivery of care. Specifically, patients noted that providing the pharmacist with scale results would impact their ability to provide care by giving additional insight into the patients' medication use. By understanding the patients' individual medication

experience, patients believed pharmacists were able to ensure they were on the best treatment regimen for them.

“They would get a chance to identify the patient's concerns with their medications and be able to perhaps give advice or to kind of help the doctor in prescribing of it. Which in some instances, I can see how that would save people from needless injury, if they were having concerns and couldn't talk to the doctor for a month or two until their next appointment. But the pharmacist could identify those concerns and help them before, and help them right then, concerning their medications...”

Impact on Patient

A majority of patients' responses focused on how the use of the scale during pharmacist-consultation impacted them as a patient. Sub-themes emerged including: medication knowledge, relationships with pharmacists, impact on MRPs, impact on patient engagement and perceived complexity, and pharmacists' value in interprofessional roles.

Medication Knowledge—One result patients reported from completing the scale and discussing results with the pharmacist was increased medication knowledge. Patients also noted they gained insight beyond what they were anticipating. They reported both greater confidence in and understanding of their medications.

“I also feel more confident that if I have any concerns about medication that I'm getting, if one interferes with the other. Whereas before, I would have just taken the medication and not bothered to ask.”

“I think it would develop [other patients'] confidence; minimize some of the questions they have and give them the opportunity to get another professional viewpoint on whether or not they're taking too much or too little or be redirected to their physician... I think knowing that you have that open door, patients would be - I think they would be appreciative of that.”

Patients reported both on ways that the use of the scale led them to reflect on their medications, eliciting new questions for the pharmacist, and how the consultation with the pharmacist improved their confidence in, awareness of and/or understanding of their medications.

“[I've] just been doing a lot of thinking about it and feeling a lot more confidence. And also, as I say, try to encourage other people to understand their medicines... If you're taking the medicines but you don't think it's working for you, check into it by talking to the pharmacist and the doctor, and if they can help you be more confident, it will do more good for you”

“You know, it was insightful, because I got a chance to really think about my medications. I never really gave it too much thought, but I gave it a chance to think about my medication and the effects of it having on me.”

“I think the questions were - sometimes you don't think about a lot of things... If it's on paper and you read it, it might bring it up to you. It might have been in the

back of your mind. It might bring it up to the front where you can address that problem. That's what it did for me. “

Relationships with Pharmacist—Patients reported the pharmacists' concern changed their comfort level with approaching or talking with the pharmacist and increased the likelihood of seeking out the pharmacist in the future. Several patients noted that they previously had no interaction with the pharmacist, but by discussing the scale results with them, they established that relationship.

“The doctor just gives you your medicine, just what you take and that's all. You know, when I went through this, I felt like that somebody concerned and cared about your health and the medicine that you're taking. Not to say the doctor's not, but sometime, you think they're not. You think they just give you your meds and ‘this is what you do’ and that's it. But to actually do that, yeah, I feel good about even doing the survey because, overall, I do feel like somebody cares and concerned.”

“I didn't ask enough questions when the medications were prescribed. Like, maybe I should have. And this talking with the pharmacist, trying to help me open that door to where I'm more comfortable discussing the medications and dosages and that kind of thing.”

Medication-Related Problems—Patients described examples of when the use of the scale and interaction with the pharmacist led to actual changes in medication therapy or resolution of problems. These changes included increased adherence to medications, reduction of duplicate therapy, dosage optimization, recommendation of over-the-counter therapy, as well as others.

“I was taking one medicine that was really important for my heart and I wasn't taking it correctly and if I never would have met with my pharmacist I would've never knew that, you know? She probably saved my life, really.”

“Well, she told me the solution to at least two of my problems...so that helped me a lot. And she seemed to think that I had valid concerns.”

“Well, I actually already talked to one of my doctors about one of the medications that she suggested ...it really wasn't doing what it was supposed to do, and she thought that, in her experience, that I was on a very low dose. I wanted to talk to my physician about it. So, I did, and the physician agreed and upped the medication. It seems to be helping more now.”

“Well, the information that she gave me to discuss with my doctor and the changes made from my doctor has improved my overall feelings with the medications. I don't have the dizziness anymore and I am not overly concerned about the amount of medications I take a day.”

Patient Engagement and Perceived Complexity—Patients' perceptions of the scale's usefulness was dependent upon their perceived medication complexity and their own healthcare engagement, which they believed would apply to other patients as well.

“Probably if you're taking more prescriptions than I take... Which like I said, I don't take very many, and I haven't had a real big problem with mine. But I think it could help with a lot of other people that do take more or maybe have a little bit more problems than I have.”

Patients noted several potential barriers to engagement with the scale, including comprehension, vision, language, and socioeconomic factors.

Pharmacists' Value and Interprofessional Roles—Patients described their perceived value of pharmacists, and particularly their role on the healthcare team in relation to other healthcare providers broadly. Specifically, patients discussed their perceived role of the pharmacist as intermediaries between physician and patients and the ways the pharmacist can benefit them. Also, patients reported that pharmacists' counseling sparked conversation with their prescriber, as the patients would either follow up with their physician on their own or through their pharmacist. Patients also described prescriber roles, pharmacist-physician relationships, and their vision for how the use of the scale can facilitate these connections.

“I think the primary care doctor or the caregiver is more or less the first line of defense. Because that is your main primary contact before even the pharmacist. So the main discussion starts from primary caregiver.”

“I called the doctor and asked for a consultation to talk about new medications and so I will be able to change those.”

“I was glad that I talked to her. I had never thought about asking her and there are so many doctors that you see. You have your family doctor, you have your specialists for pulmonary, you have your bone specialist, you have your, you know, for different things that you have, and each one of them can give you medications. I never thought to say to the pharmacist, well, aren't some of these counteracting each other?”

Thematic Differences Across Demographic Variables

As noted, several demographic variables of interest were evaluated for differences in emergent themes. The following differences were noted:

Age

Patients older than 50 were more likely to describe an increase in medication knowledge compared to younger patients and were less likely to see value in knowing their numeric scale results.

Sex

Male participants were more likely to find value in knowing their result on the scale. Female patients were more likely to report increased medication knowledge.

Social Support

Patients with no social support were more likely to report having an MRP identified and resolved than patients who had social support.

Scale Result/At Risk

Patients who were not at risk for problems based on their result were more likely to note improved pharmacist relationships and medication knowledge, whereas patients who were at risk were more likely to provide comments on the value of the pharmacist. Patients who were considered at risk were more likely to see value in knowing their result.

Number of Medications

Patients in the lower quartile of total number of medications reported more frequent resolution of MRPs than those in the higher quartile.

Education Level

Those patients with more than a high school education were more likely to have a MRP resolved; those with a high school education or less were more likely to describe increased medication knowledge.

DISCUSSION

Overall patients reported overwhelmingly positive experiences using the scale and discussion of the scale's results with the pharmacist. These positive experiences included identification and resolution of MRPs, enhanced medication knowledge and confidence, initiation of a relationship with their pharmacist, and increased perception of pharmacists' value in interprofessional teams. Our findings are parallel to prior research by Wittry et al. in which older-adult focus groups exploring a medication-risk questionnaire found that the primary identified usefulness of the questionnaire was as a conversation starter.⁸ Therefore, evidence exists of the scale's value in engaging patients in pharmacist services and increasing patients' awareness of pharmacists' role. Patients' reports were varied in how pharmacists used the scale's results during consultation, which was expected given the purposefully minimal training pharmacists received.

Certain responses to interviewer questions were more likely to come from one demographic patient group than another. For example, female patients and those older than 50 reported increased medication knowledge more often than younger males. We speculate older patients may feel less confident in their understanding of medications and experience greater benefit from discussion with the pharmacist. Alternatively, older adults may have more medications, and thus more opportunity for MRPs. Among patients with a spouse or domestic partner in their home, only one example of MRP resolution was reported. In contrast, patients without social support had greater resolution of MRPs, which could reflect fewer MRPs at baseline among those with better social support. Similar results have been found, as patients with support have greater medication adherence.¹¹ Similarly, patients with more than a high school education were more likely to have MRPs resolved than those who had not graduated high school. Conversely, those with high school education or less were more likely to describe increased medication knowledge. This suggests that pharmacists may need to work more closely with patients with less formal education to ensure resolution of identified problems.

There were several limitations to this study. For some patients, up to eight weeks passed between completing the scale and participating in the interview, which potentially impacted the patient's recall. This was particularly apparent when patients were asked about clarity or difficulty with specific items of the questionnaire. Additionally, patients reported that an average of 10 minutes was needed to complete the scale, prior to discussion of the results with the pharmacist; however, during data collection, investigators informally observed patients completing the scale in typically under five minutes. Lastly, although data was collected at five separate pharmacy sites, each pharmacy is part of the same health system that serves a medically underserved population; this may limit the transferability and generalizability of results.

CONCLUSION

This study examined patients' perceptions of using a medication-risk questionnaire in community pharmacy practice. After completing the scale, patients reported increased self-reflection about their medication, increased medication knowledge and confidence, continuity of care with other providers and establishment of a relationship with the pharmacist. Based on the positive response generated in this study, further expansion and application of the scale in community pharmacies should be considered.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Sample Demographics (n=40)

Characteristics	No. (%) (Unless otherwise noted)
Sex, Female	26 (65)
Age in Years, Mean	51.2
Range	26-72
Race, African-American/Black	19 (47.5)
Social Support, Single Living Alone	15 (37.5)
Single Living with Partner	5 (12.5)
Married	6 (15)
Separated/Divorced	8 (20)
Widowed	6 (15)
Education, Grad/Middle School	1 (2.5)
High School or G.E.D.	16 (40)
Some College/Trade School	16 (40)
College (Bachelor's)	4 (10)
Graduate/Professional School	3 (7.5)
Income, Comfortable	6 (15)
Just enough to make ends meet	21 (52.5)
Not enough to make ends meet	13 (32.5)
Total Medications, Mean	9
Range	2-22
At Risk Patients (i.e. Score >15)	34 (85)