



COMPLETED GRANT SYNOPSIS

Community Pharmacists Improving Home Medication Management: A study of the HOME Program

Matthew Witry, PharmD, PhD, Korey Kennelty PharmD, MS, PhD, William Doucette, PhD
University of Iowa College of Pharmacy | Iowa City, IA

Objectives	
<ul style="list-style-type: none"> • Develop an evidence-based self-administered questionnaire, the Home Medication Experience Questionnaire (HOME-Q) to identify home medication use obstacles and experiences. • Develop a training around using the HOME-Q. • Train community pharmacists on using the HOME-Q • Have community pharmacy partners administered the HOME-Q and discuss the results with patients • Re-administer the home Q at three months to address changes in responses and uptake of pharmacist recommendations • Evaluate responses and make changes to the HOME=Q • Re-trial a revised HOME-Q with a new sample of patients 	
Methods	
Design	<ul style="list-style-type: none"> • Study Design <ul style="list-style-type: none"> ○ Prospective, single group pilot study ○ Pharmacist interventions with 3-month follow-up from research team • Subject Characteristic/Identification <ul style="list-style-type: none"> ○ Convenience sample of pharmacy patrons <ul style="list-style-type: none"> ■ Adult patients 55 years and older ■ Residing at home ■ Takes four or more medications daily (polypharmacy) ■ At least one chronic condition • Study protocol: <ul style="list-style-type: none"> ○ Pharmacy staff identify patients that met the inclusion criteria primarily based on dispensing records. Some patients were recruited over telephone because of their participation in the pharmacy’s medication synchronization service. ○ Eligible patients were told about the study and the questionnaire and offered the opportunity to complete the questionnaire either while they waited in the pharmacy or they could take the questionnaire home and bring it back to discuss with the pharmacist at a scheduled appointment. ○ The pharmacist and patient discussed the “Yes” HOME-Q responses indicating a potential medication experience issue. The pharmacist and patient discussed potential problem-solving approaches to manage the issue. The pharmacist documented the encounter including any agreed-upon changes or plans and these action plans were reviewed with the patient. ○ A member of the research team called the patient at 3-months to re-administer the questionnaire and ask several open-ended questions about the process of completing the HOME-Q and meeting with the pharmacist ○ A subset of the 3-month follow ups were conducted in person in the patient’s home to also investigate the patient’s medication routine.

	<ul style="list-style-type: none"> ● Analysis <ul style="list-style-type: none"> ○ Descriptive statistics were calculated for the time 1 and time 2 HOME-Q responses. ○ Pharmacist interventions were coded. ○ Patient adoption of pharmacist recommendations coded. ○ Text data from telephone and in-person interviews were coded descriptively and analyzed.
Study endpoints	<ul style="list-style-type: none"> ● Test if, and how, HOME-Q scores changed over the study period ● Identify most commonly cited medication experience obstacles and issues ● Identify most commonly adopted pharmacist interventions ● Revise HOME-Q based on response pattern
Results	
<ul style="list-style-type: none"> ● Total participation included 4 pharmacies and 57 patients (Pilot 1: 2 pharmacies, 33 patients) (Pilot 2: 2 pharmacies, 24 patients). ● Pilot 1: Data were collected by pharmacy 1 in February and March 2018 and by pharmacy 2 in June-August 2018. <ul style="list-style-type: none"> ○ 33 patients met with one of the study pharmacists, 25 at site 1 and 8 at site 2. ○ 3 patients did not respond to the 3-month follow up call after 3 attempts ○ For the 30 patients with full data, the average age was 70.6 (SD=11.1) and 15 (50%) were female. The median number of oral medications was 6.5 (IQR=4). ○ The median HOME-Q sum for the 30 patients with complete data was 4 (IQR=2) at baseline and 4 (IQR=3) at 3-months (p=0.213). ○ Respondents commonly reported on their initial HOME-Q that they use multiple prescribers (76.6%) and use over the counter medications and supplements. Forgetfulness and feelings of taking too many medications were reported 40% and 43.3% respectively. Keeping old prescription medicines just in case was reported in 43.3% of cases. Sometimes I use someone else's prescription medicines, received no "yes" responses. ○ There were 51 coded interventions, across 9 categories. ○ Common pharmacist actions were printing or recommending medication lists (n=8), recommending medication takeback (n=8), recommending pillboxes or other adherence aids (n=8), recommending packaging solution or non-child proof bottle caps (n=7). ● Pilot 2: Data were collected by both pharmacy 3 and 4 in February = May 2019. <ul style="list-style-type: none"> ○ 24 patients met with one of the study pharmacists, 13 at site 3 and 8 at site 4. ○ 3 patients did not respond to the 3-month follow up call after 3 attempts ○ For the 21 patients with full data, the average age was 70.3 (SD=9.5) and 9 (42.9%) were female. The median number of oral medications was 6 (IQR=3). ○ The median HOME-Q sum for the 21 patients with complete data was 3.5 (IQR=3) at baseline and 1.5 (IQR=1.5) at 3-months (p=0.010). ○ The HOMEQ v2 significantly decreased at 3 months whereas there was no change with the HOMEQ v1 used with the first pilot sample. ○ Respondents commonly reported on their initial HOME-Q v2 were: medication packaging (n=19), unnecessary medication belief (n=9), running out of medicines (n=7), feeling unsteady when standing or walking (n=6). ○ There were 38 coded interventions, across 7 categories. Eighteen recommendations were reported accepted by the patients. Seven patients had no recommendations. 	

- Interview data were collected during the 3-month follow up telephone calls
 - Participants enjoyed talking with the pharmacist, but often felt like they had their regimens under control and that other people might need the service more
 - The participants viewed the HOME-Q more as a conversation-starter than a list of problems to resolve
- Interview data were collected during a set of home visits with participants in phase 1.
 - These older adult medication users each had developed their own systems for managing their medications and routines for taking their daily doses.
 - Common cues included associating medication-taking with their daily routine, like teeth brushing or meals. Others associated medication-taking with locations, keeping some medications on their dresser, others in a drawer, and others in a medicine cabinet and on top of the microwave.
 - Visual cues also helped patients take doses. One flipped over bottles, and others changed the shelf of the medication. Another repurposed a 7-day pill organizer to utilize 3 of the slots for morning, lunch and evening, filling it every night instead of once a week.
 - Some people keep their medication bottles in the medicine cabinet above the sink, some meticulously fill pill boxes every week at their kitchen table. Others have unique routines of flipping bottles over or used a variety of storage solutions including the use of handwritten labels.
 - Most participants reported following their prescriber's directions and were confident with their treatments. Patients still felt confused at times with their complicated regimens and changes in directions.
 - Participants also reported positive emotional connections to their pharmacists and prescribers. They related these connections to loyalty and trust.
 - Medication cost was one of the more commonly mentioned negative medication experiences. One patient claimed spending half of all their income on their health with medication copayments and coinsurance costing more than their home and car. This person valued the medications and trusted their providers, but it was clear they were making sacrifices because of their budget for medications and other medical expenses and this was a significant source of stress for the individual.
 - Most participants in this cohort took supplements. Some on a regular basis, others they take occasionally and even seemed to question why they are even taking them. People seemed to like taking something they chose to supplement the prescriptions chosen by their prescribers. People didn't really see any downside to supplementation. One patient had a bottle of assorted supplements and seemed to randomly take a capsule or two from the bottle on occasion.
 - Overall, these older adults had been medication users for some time and had established consistent regimens. Some of their more concerning behaviors seemed to relate to organization and supplements. Comparing these findings to those of patients from other backgrounds and pharmacy types may yield useful findings for how pharmacists can approach making medication experience-related recommendations.

Conclusion

- Overall, the value of the HOMEQ in this sample was not in the utility of the questionnaire to assign a patient a risk score and test if the score decreased with pharmacist intervention. Rather, this patient-centered tool seemed to lead to pharmacist-patient discussions about the patient's medication experience.
- Problem-solving discussions about the patient's medication experience may have benefits to the pharmacist-patient relationship if the patient sees them trustworthy and going the extra mile.
- Targeting patients based on greater medication regimen complexity non-adherence is warranted.
- It may be beneficial to examine how the HOME-Q can augment medication workups already being offered, such as comprehensive medication reviews.