ORIGINAL ARTICLE

What Do Older Adults and Their Caregivers in Malaysia Think of Home Medication Review? A Qualitative Inquiry

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ABSTRACT

Introduction: Home medication review (HMR) involves a patient-centered approach, extending continuity of care to the community setting with the intention of improving medication use and health outcome. The delivery of HMR services in Malaysia remains limited to urban hospitals and clinics. Current study aimed to explore the perception and acceptability of HMR in older adults. **Methods:** In-depth individual interviews were conducted among adults aged ≥65 years old, taking ≥5 medications, recruited from geriatrics clinics at a tertiary teaching hospital. Home interviews were conducted among 12 older adults and care givers between April to June 2019. Interviews were audio-taped, transcribed verbatim and analysed through descriptive interpretive approach of qualitative data analysis. **Results:** HMR provided participants with opportunities to discuss medication-related issues with pharmacists in conducive environments. Pharmacists provided information which improved knowledge on indications, dosages and safe storage of medications through HMR. Participants experienced relief and developed confidence in medication self-management. **Conclusion:** The importance of follow-up visits to ensure adequate monitoring and continuity of care were emphasized. Larger quantitative studies are required to determine the clinical impact and cost-effectiveness of HMR to justify the implementation and expansion of this service.

Keywords: Aged, Polypharmacy, Home medication review, Drug-related problem, Pharmacist

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INTRODUCTION

Home medication review (HMR) was included into the Australian Medicare Benefit Schedule in 2001 (1, 2). Since then it has been gaining popularity in both developed and developing countries to address patients' medication-related issues. It represents a comprehensive team approach that involves cooperation between general practitioners (GPs), patients and pharmacists to identify and resolve any therapeutic issues (3). Usually the GP will classify the individuals that are expected to benefit from HMR, such as those with polypharmacy, recent changes in medications, suspected non-adherence, or recently discharged from the hospital (1). They are then visited by a trained pharmacist who evaluates the individual's understanding and use of medications, provides necessary education, and documents therapeutic recommendations which are then communicated as a report to the GP. The GP then reviews the HMR report and modifies the patient's medication regime as deemed appropriate and necessary during the subsequent clinic visit (1, 4, 5). The literature suggests little impact of pharmacist-led HMRs on the rate of mortality and healthcare resource utilisation but at the same time furnishes sufficient evidence for the effectiveness of this intervention in identification and resolution of drug-related problems (DRPs), improving clinical outcomes, improving adherence to the prescribed medications and improving medication knowledge (6).

Older adults are usually on multiple medications, a condition commonly termed as polypharmacy (7). Polypharmacy is linked to negative effects in older adults, such as falls, adverse drug events, and increased healthcare use (8-10). This is mainly due to the age-related physiological changes which raises their risk of DRPs as well as poses additional challenges in recognising, managing, and administering the medications appropriately (11). For these reasons, HMRs are expected to be most relevant in the care of older adults and most likely to improve treatment outcome and safety.

In 2011, the Ministry of Health (MOH), Malaysia published its first edition of a HMR protocol providing a comprehensive framework for pharmacists under the

MOH to provide HMRs to the general public (12). In its revised protocol, MOH emphasized that the provision of HMRs needs to be expanded in order to effectively manage prevailing DRPs such as adverse drug reactions, non-adherence to medications and inappropriate medication storage practices (13). To date, the delivery of HMRs in Malaysia is limited to a few hospitals under the MOH located at city centres and 'high-risk' patient populations attending geriatrics, psychiatry and stroke services (12, 13). There is also a lack of information regarding patients' perception on the acceptability and benefit of the HMRs. Should the acceptability, feasibility and cost-effectiveness of the current protocol is established, the prospect for extension of HMR services in Malaysia will be well-defined. This study was part of a larger study which aimed to explore DRPs experienced by community-dwelling older adults in the Klang Valley through HMR. During the HMR visit, participants were invited to participate in an in-depth interview to explore their perception and acceptability towards HMR.

MATERIALS AND METHODS

This study involved qualitative exploratory design where semi-structured, in-depth interviews were conducted at participants' homes around the Klang Valley. Ethical approval was obtained from the Medical Research Ethics Committee of the University of Malaya Medical Centre (Ref. No. 201922-7094). Participants comprised individuals aged ≥65 years old, who consumed ≥5 prescription medications, recruited from the geriatrics clinics at a teaching hospital in Kuala Lumpur identified through random sampling. As this was a qualitative sub-study of a larger intervention study, all participants or legal representatives who provided informed consent for HMR were invited to participate in an in-depth interview to explore their perception and acceptance towards the HMR service delivered by a pharmacist. Only participants or their caregivers who agreed to be interviewed and consented for the conversation to be audio recorded were included in this qualitative study.

Face-to-face interviews were conducted between April and June 2019, with the help of a semi-structured topic guide developed from literature review. The topic guide was validated through discussion within the research team until a consensus on the items was achieved. All interviews were conducted in English, audio-taped and transcribed verbatim for analysis.

Analysis of the transcripts was conducted inductively using a descriptive-interpretive approach (14). Each transcript was read multiple times to ensure researchers are fully immersed within the contents. Starting with the first transcript, meaningful quotes from the participants which were relevant to the aim of the study were identified and coded with the help of QDA Miner; a tool for qualitative data analysis. This was repeated for the first three transcripts. Resultant codes were further redacted until clear themes emerged. Inter-related codes were classified under one category and the categories were further reduced into larger themes. The resultant analysis framework consisting of categories and themes were debated by the research team until a consensus was achieved. This finalised coding framework was used to code subsequent transcripts.

RESULTS

Out of the 30 participants who received HMR visits, 12 patients and caregivers agreed to be interviewed. Data saturation was achieved at the tenth participant, which was confirmed during the subsequent two interviews. The demographic details of participants are provided in Table I.

Table I: Demographic details of the participants

Participant	Role	Gender	Age (years)	No. of medications
P1	Patient	Male	87	22
P2	Patient	Male	85	26
P3	Caregiver	Female	48	N/A
P4	Caregiver	Female	45	N/A
P5	Patient	Male	80	11
P6	Caregiver	Female	48	N/A
P7	Caregiver	Female	35	N/A
P8	Patient	Male	88	5
P9	Caregiver	Male	50	N/A
P10	Caregiver	Female	32	N/A
P11	Caregiver	Female	45	N/A
P12	Caregiver	Male	49	N/A

N/A= not applicable

Data analysis revealed four main themes as presented in Table II. Briefly, participants described their perceived advantages of HMR, issues of safety and privacy as well as their preference for HMR pharmacists. Participants also expressed the need for follow-up HMRs.

Perceived as advantageous

Opportunity for in-depth discussions

The HMR encounter provided participants with an

Table II: Summary of themes and categories

No.	Description of themes
1.	Perceived as advantageous
	a) Opportunity for in-depth discussions
	b) Conducive environment
	c) Direct observation of home circumstances
	d) Improved knowledge and awareness on medication use
2	No concerns regarding safety and privacy
3	Choice of pharmacist for home medication review
4	Follow-up visits required

opportunity to talk about their medications in detail with qualified personnel. The clinical indications and dosing instructions discussed during the HMR supplemented the information provided by doctors during clinic visits or pharmacists during medication collection, which were felt to be inadequate. The lack of information provided was attributed to busy, overcrowded clinics and dispensing pharmacists and limited consultation time.

"*I think it's very, very useful. Most of the time we see the doctor and then we get our medications. At the pharmacy, sometimes, we don't get enough information on how to use the prescribed medicine. So, we normally just take the medicine home and then we guess ourselves. So it's good that you came and asked what is the medicine for.*" P11

"*I felt that good explanation was given for each tablet including what's the reason that the medicine has been given. Unlike when you go to the hospital and when you collect the medicine. This is this and this is that and just 100 over patients waiting to collect their medicines. So I felt that the experience (referring to HMR) is rather pleasant I would say and the information given was very helpful.*" P3

Conducive environment

Participants particularly liked the idea of their medications being reviewed at the comfort of their homes because they felt relaxed and unrushed. This allowed them talk about their medications and health-related concerns in great detail. Furthermore, some participants with mobility issues or who had to depend on others for transportation welcomed HMR as they did not have to leave their home to consult a pharmacist regarding their medications. One participant also mentioned that HMR takes away the burden of having to carry all their medications to the hospital to get them reviewed.

"The informal environment gives the patient time to think and speak and also gives the pharmacist enough time to explore what is the actual situation at home. And the other thing is you (the pharmacist) can have a look at the entire spectrum of medications and issues. For example, she (the pharmacist) asked about diet, the kind of food he (the patient) eats and what medication he (the patient) takes every day and then like his (the patient) sitting position and a lot of other things that can be improved. Even though these are minor issues but they make a lot of difference to us." P3

"*I feel relaxed at home and happy to receive them (the pharmacist). Morning to evening I am at home. I don't go out. I don't travel because of my bad leg. It is difficult for me to move around and travel.*" P2

"*Because you are just at home and they (the pharmacist) are coming here to give you the service. There is no tension you see. (Caregiver added: "you don't have to carry the medicines") (laughs) Yes! You don't have to carry one basket full of medicines to the hospital.*" P1

Direct observation of home circumstances

Conducting the medication review within participants' home allowed for direct observation of actual home environment which would help to identify medication-related problems that may be not necessarily be picked-up during clinic visits. In addition, pharmacist was also able to review the entire range of medications taken by the patient which could have been prescribed by different doctors, bought over the counter or obtained from traditional or complementary medicine practitioners, providing the pharmacist with a far more complete picture of the patient's drug therapy. The pharmacist was able to provide immediate solutions to some of the medication-related problems identified, removing the need to wait until the next clinic visit.

"*It's good for the pharmacist to actually see the setting and understand the issue (patients' medication-related problems). Because sometimes they (the patient) cannot express themselves properly. So when you are in the home you get to see the setting and you know how do they actually take their medications.*" P7

"*I would rather have a pharmacist who can look at the entire spectrum of the medications because my dad doesn't only see the geriatric doctor he also sees the chest clinic and he also goes for his heart so I rather have the pharmacist looking at the spectrum and that can only happen if the pharmacist comes to the house*". P3

"*By coming and seeing patients directly, you (the pharmacist) have the time to identify our problem and take actions accordingly and immediately. On how should I go about it and tackle the medications. So this is good!*" P2

Improved knowledge and awareness on medication use

As a result of the personalised and in-depth medication review and discussion with the pharmacist, participants felt they gained awareness on the indications and the correct ways of medication administration. A few participants were taking duplicate medications as they were unaware that the medications had proprietary and generic names while a few of them had been using their inhalers and creams incorrectly. The HMR has improved patients' awareness and provided them with a sense of relief and confidence in managing their medications.

Besides gaining knowledge on accurate dosing and indications of their prescribed medications, participants valued the information provided on proper storage of medications.

"*Luckily she (the pharmacist) picked up that I have been taking double the dose (due to drug duplication). The Cardura and this thing (pointing to a medication strip) are the same (sighs). So yeah, she (the pharmacist) corrected me and now I know what I should and should not take.*" P5

"*There are certain medications that I didn't have the right information on how to use it. Like the inhalers, the medicine (pointing towards a topical cream) for my leg and toe and the shampoo. She (the pharmacist) explained step by step on how to use the medications and on how to clean the inhaler.*" P2

"*You (the pharmacist) give us an opportunity to voice what we want to say or what we have been worrying about (regarding the medication and health). For example, my mother-in-law asked you what is this (referring to a medication)? Once you (the pharmacist) explain to us, we understand better and we are at ease when we know that we are doing the correct thing.*" P4

"*I feel more confident now than I was before after getting detailed explanation on my disease and the various medicines which I am taking. There was a problem previously because the doctors who gave me the medicine are so far away (not easily reachable). If I want any explanation on my medicines, I cannot get it.*" P8

"*I think it's good, especially for those (patients) who are not aware of how to go about taking and storing the medications. Some patients store their medications in the kitchen and you know it's very hot and medicines can get spoiled due to the heat. It should be kept in a cooler place. So I think it's a good idea to go (to their homes) and check. Especially for older people who are living alone or don't have their children around to monitor.*"P7

No concerns regarding safety and privacy

A few participants mentioned that older persons may be uncomfortable with strangers paying them a visit. It was suggested that HMR appointments should be made at the clinic itself during the patient's visit to the doctor to provide a sense of confidence that the visitor is official. Prior appointments are also important for preparations for the visit. However, others felt they were not worried about safety or privacy.

"*I don't think privacy is an issue but elderly people like my parents live alone so when you directly contact them, there is an issue of the safety. They do not know you all (the HMR team) so I suppose the appointment can be made at the geriatric clinic itself saying that you'll be getting visitors from the clinic, and so and so will be contacting you and that will be better for them to accept and be prepared to receive you (the HMR team).*" P3

"*I think there is no issue at all (with regards to safety and privacy) and we are happy that you (the pharmacist) are sharing your knowledge and to know that we are doing the right thing (in managing their medications). For us, it's a plus point*". P9

Choice of pharmacist for home medication review

With regards to the preference of pharmacist, participants expressed two differing opinions. One group of participants expressed that the HMR pharmacist should be affiliated to their regular GP clinic or hospital. In their opinion, this will facilitate the pharmacist in gathering patient's relevant medical and medication history prior to the HMR as well as in communicating with the patient's attending doctor in case needed. However, others believed that any qualified pharmacist regardless of their affiliation who possess the necessary skills and knowledge is acceptable.

"*If the pharmacist is from the same hospital that the patient goes to, it is easier for the pharmacist to communicate with the doctor. If it is other pharmacist (sic) who is not attached to the hospital, how to communicate with the doctor? If you are from the same organisation you tend to have a bit more trust in your fellow colleague. So there could be a problem if you have someone (the pharmacist) from outside (different institution) although qualified, coming and tell you about your patient.*"P7

"*My 1st preference would be of course pharmacist from the hospital that we go for follow up. Because there should be sort of an alignment with the doctors who are taking care of my mom and able to access her (medical) records. So that the pharmacist knows what she is taking and what her medical condition. Alternatively, if there is someone else who is already updated and aware of their (patient's) medical history, then should also be OK for me*". P9

"*I think the key word here would be 'qualified person'. As long as the person has the qualification and is trained on medications, then should be OK. The right people for the right job.*" P4

Follow-up visits required

Many participants expressed the need for follow up HMR visits to monitor the patient's progress and the resolution of medication-related problems. This was said to provide a sense of assurance to the patients during the interim period while waiting for the next clinic appointment with the doctor.

"*I feel you should have a monitoring procedures or rather… a follow-up may be until the matter (medication-related problem identified) is settled and follow up until there is some kind of closing to it. Those are things I feel should be done because once you (the pharmacist) see us and go off, the appointment with the doctor is another few months' time. If anything happens during*

this time, it is a bit worrying." P3

DISCUSSION

Participants interviewed highlighted the benefits of HMR with limited concerns with regards to safety and privacy, but emphasized the need for follow-up visits. In various developing countries, HMR are not regularly practiced either due to the lack of awareness, confidentiality issues, or the lack of acceptance among doctors towards pharmacists' recommendations (4, 15). Our findings imply the acceptability of HMR among older adults which is important while considering the possibility of extending the current HMR service to a greater proportion of the Malaysian population.

The perceived benefits of HMR reported by our study participants were consistent with findings from studies conducted in Australia (3, 16, 17). Recipients of HMRs in Australia believed that HMR provided them with the opportunity to acquire medication-related information, made them feel reassured and ensured continuity of care which made them feel valued and cared for (3). In the current study, participants particularly valued the one-to-one consultation at the comfort of their homes. They affirmed that through this home-based service, the pharmacist had the opportunity to probe and explore participants' current and potential medication-related issues and provide on-the-spot solutions. The perceptions shared by our study participants are supported by previous studies concluding that HMRs have the potential to identify DRPs which can be overlooked during clinic appointments (18) due to time constraint (19) or other patient-related factors such as forgetfulness (20, 21) or patients' fear of upsetting the doctor with too many questions (3). In light of this, it is extrapolated that conducting HMRs for older adults with chronic diseases might be a good way to supplement their clinic consultations by providing a follow up and solutions to their medication-related issues at home.

The preference for HMR appointments to be made at the hospital indicates a high level of trust on hospitals as a healthcare institution and the acceptance of services offered if they were initiated by hospital doctors. It also indicates the need for the pharmacist to create a rapport with the patients before they can be comfortable and trusting to them. This is probably partly due to the safety concerns in developing countries where older adults are often victims of crime committed by fraud and impostors. (22). Therefore, older adults may not be willing to accept cold-calls or unannounced visits. We think this is an important consideration in the design and delivery of future HMR services where the building of trust has to start from the hospital and further strengthened through continuous and consistent HMR service provision.

Need for follow up HMR visits during interim period between clinic appointments was also consistently highlighted by our study participants. Typically, patients are seen in the clinic every 4-6 months which is quite long especially in the case of older adults some of whom who need closer monitoring. Malaysia has a two-tiered discrete healthcare system where public and private sectors operate independently (23). The tax-payer funded public sector caters for 70% of population, with notoriety for overcrowding and long-waiting times, leading to infrequent clinic appointments (23). The public sector experiences a high turnover, with a shortage of specialist partially attributed to the attraction of the lucrative private sector. Junior doctors also rotate within this system to even out workloads and facilitate training. This leads to lack of continuity of care which in turn implies inadequate doctor-patient communication. HMR has influenced patient-doctor communication through the HMR reports written by the pharmacists to the doctors (3). The reports help highlight medication issues not mentioned by patients during clinic visits hence facilitating communication during time-limited consultations. The HMR service, therefore, arguably has an even greater role to play in developing countries like Malaysia than developed countries where it is being predominantly practiced and studied.

Despite sufficient probing, participants articulated only positive aspects of HMR which could be due to reporting bias as participants were interviewed by the research team which comprised of pharmacists during the HMR visit. Participants were potentially guarded in their responses as they perceived the pharmacist as a person of authority. Our participants were recruited from a tertiary teaching hospital located at an urban area and the interviews were all conducted in English, and hence limited in terms of representativeness. Large scale quantitative evaluation of the acceptance of pharmacist's recommendations among doctors and effectiveness in terms of clinical outcomes, cost reduction, and patient satisfaction are recommended to help inform policy towards safe and effective use of medications within a rapidly ageing population (24).

CONCLUSION

Older adults attending geriatrics clinics and their caregivers felt that HMR would have a positive impact on medication use, refuted safety and privacy concerns, and emphasized the need for follow-up visits. Larger quantitative assessments of the effect of HMR on clinical as well as economic outcomes are now warranted. The barriers and challenges of HMR delivery among other stakeholders should also be explored in future studies.

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