Thai Journal of Pharmaceutical Sciences (TJPS)

5th International Conference on Pharmaceuticals, Nutraceuticals and Cosmetic Science (IPNaCS 2017)

Piloting A Medication Review Programme In Community Pharmacies In Malaysia

Mahmathi Karuppannan[1]*, Azlina Ahmad[2], Shubashini Gnanasan[1], Maryam Farooqui[3], Yogheswaran Gopalan[1], Yahaya Hassan[1], Muhammad Aslam Farooqui[4]

[1] *Department of Pharmacy Practice, Faculty of Pharmacy, University Technology MARA, Puncak Alam, 42300 Bandar Puncak Alam, Selangor, Malaysia.*
[2] *Department of Pharmacy Practice, Faculty of Pharmacy, Lincoln University College, Kelana Jaya Learning Site, 2 Jalan Stadium SS 7/15, 47301 Kelana Jaya, Selangor, Malaysia*
[3] *Department of Pharmacy Practice, Unaizah College of Pharmacy, Qassim University, PO BOX 5888,Unaizah 51911, Qassim, Saudi Arabia.*
[4] *Department of Internal Medicine, Unaizah College of Medicine, Qassim University, PO BOX 5888,Unaizah 51911, Qassim, Saudi Arabia*

* *Corresponding author:* E-mail address: k_mahmathi@yahoo.com

Keywords: medication review, community pharmacist

Introduction

Medication review (MR), a periodic assessment of medication taken by patients, is well established in the United States and known as the 'Brown Bag' review.[1] Patients are provided a brown paper bag to put in all their medication that they have at home and bring to the community pharmacy.[1] The pharmacists will review all the medication and possibly identify potential drug-related problems (DRP). Similar programs have also been implemented in other countries such as United Kingdom[2], Japan [3] and Australia.[4] These studies have reported that the MR program provided a great opportunity to educate patients about the purpose of each medication, appropriate medication usage as well as actively involve patients in the management of their health condition.[2,3,4]

Currently in Malaysia, hospital pharmacists (HP) provide home medication review services. Community pharmacists (CP) on the other hand do not provide such service as they do not meet patients as often as the HPs. They usually receive low number of prescriptions[5] unlike CPs in other countries.[6] In addition due to their limited dispensing role; patients do not always see them for medication advice.

MR could be a good platform for CPs in Malaysia to create a good pharmacist-patient relationship. With proper promotion, this program could help CPs to build their credibility as one of the contributing healthcare team members. Their involvement in MR could ensure optimal patient care at the community level and could bring them one step closer to the community.

This study was carried out to explore the feasibility of conducting MR in community pharmacy setting. The study aimed to identify the type of DRPs encountered during the MR and to evaluate the pharmacists' and patients' view on the program.

Methods

CPs were recruited purposefully via personal contacts. Consents were obtained through informed consent forms. Ethical approval was obtained from the institutional ethics committee prior to the study. The program was promoted locally through flyers, posters, buntings at the pharmacy and through other social media by the participating pharmacists.

All pharmacists were trained prior to the study. A data collection form, developed by the researchers, was given to the pharmacists to record all general information of the patients, DRPs and intervention taken by the pharmacists. Pharmacists were required to identify and invite suitable patients for MR. Once identified, they provided the potential patients a bag to fill in all the medications available at home (prescribed medications, OTC, unused medications and expired medications) and set appointments for the patients to

come for the review. Consents were also obtained from the patients. Upon completing the review, patients and pharmacists were interviewed using semi-structured questions.

Data on DRPs were analysed using Microsoft Excel and classified according to the Pharmaceutical Care Network Europe Foundation (PCNE) version 5.01[7]: The qualitative interviews were audio recorded, transcribed verbatim and analysed using thematic analysis.

Results

Medication review sessions

Six CP participated in the study. A total of 160 bags were given out to the public but only 26 patients returned with the bag and attended the review sessions (age ranging from 40 to 80 years, mean of 42.2). This may be due to the fact that this program is new and unknown. The time taken for each MR sessions ranged from 10 to 80 minutes (mean of 30.7 minutes). The number of medications reviewed per patient ranged from 2 to 11 (mean of 3.8).The total number of medication reviewed was 98 and cardiovascular drugs were the most common drugs. Twelve patients claimed taking dietary supplements.

The DRPs identified by pharmacists are listed in Table 1. The pharmacists identified a total of 31 DRPs in 19 patients. Almost half of the patients experienced side effects while taking their medications. Seven out of 26 patients had adherence problems.

Table 1: DRPs identified during MR based on PCNE version 5.01[7]

Categories	DRPs	Number of patients (n = 26)
P1 Adverse reaction	Side effect suffered (non-allergic)	12
P2 Drug choice problem	Patient unaware of reason for drug treatment	3
P3 Dosing problem	Drug underused/ under-administered	4
	Drug overused/ over-administered	1
P4 Drug use problem	Drug not taken/administered at all	7
	Inappropriate timing of administration and/or dosing intervals	2
	Patient forgets to use/take drug	1
	Patient takes food that interacts with drugs	1
No DRP	-	7

*some patients may have experienced more than one DRP

Pharmacists' view on medication review (n=6)

Based on the experience gained from this study, the pharmacists highlighted the benefits and the challenges in performing MR (Table 2). CPs believed that MR is a value added service that can promote community pharmacy. It adds professional value and provides an opportunity for pharmacists to use their clinical knowledge during consultations. Pharmacists felt that community pharmacies can be a platform to reinforce education by providing reliable information and guidance with regards to medication usage and storage. Mixed opinion were seen as some pharmacists believed that this service should be remunerated accordingly to encourage them, while some believed that it is part of their duty to incorporate the service into their business.

Table 2: Analysis Matrix - Pharmacists' view on medication review

Pharmacist' knowledge about MR	*I've heard about this but I'm not sure how to do it."(Ph-d)*
MR as a valuable and informative service	*"I was given one month to perform this review and I think this is a very good activity. Within few days I get my first patient and follow with second and third patient. This is a very promising activity. All the patients really appreciate and love when we do this activity." (Ph-b)*
A platform for patients' to get the right information	*"Other example is about basic information on before and after food…Because I notice some patients are not taking their medicine correctly. In my opinion patient or public need to know their medicine's name. That's why I emphasis the patient to mention their medicine's name" (Ph-e)*
The service should be paid far	*"At this moment it is free of charge but I think we really need to charge the patient for the service. We use our time to do the review and this is not an easy job." (Ph-a)*

Promotional kit as the good advertisement tool	*"The flyer is very good, if it is not for him, he can pass it to other people if he thinks there are other people who needs this service. I think all things are good…This bag can attract people and they were definitely happy to get a free bag. Additionally they also get the medication card." (Ph-d)*
Lack of time and workforce : the main barriers	*"I think this is a tough task and we really need a special training with a complete guideline that we can follow. We actually cannot do too many reviews in one day. We cannot do two or three reviews in one time…. Because we need extra time to do ." (Ph-a)*

Patients' view on medication review (n=18)

All patients expressed positive views about this program (Table 3). CP MR served as a reminder about the appropriate use their medicines. For some, the consultations provided reassurance that they were taking their medicines in the right way. Many patients suggested that the program should be continued. At the end of the review, each patient was given a medication record card and some believed that it's convenient to carry along and allows them to keep a record of their medications which can be useful during emergency. Many patients mentioned that they would recommend this program to others; and they believed this program should be extended to other places.

Table 3: Analysis Matrix - Patients' views' after participating in medication review

Benefitting patients	*"At least it makes us healthier. We know what we do rather than knowing nothing about it. For me, I thought I can follow my own consideration, skip the dose and take the pills whenever I want "(Pt 14)*
Gaining knowledge through MR	*"I found out about the insulin injection. I didn't know that we can inject on other side. I thought only on this area. So before this I was thinking, I need to inject only at that particular spot for the whole life. No other area "(Pt 25)*
MR should be continued	*"Yes should continue the service. If not we would never know why we have to buy the medicine. No explanation. Like hospital they just give you the medicine, with no explanation"(Pt 20)*
Increased confidence in medication use	*"My confident level has increased because there's people who give advice to us. Previously I just follow my thought." (Pt 13)*
Medication record card useful	*"There are a lot of benefits. If there is anything happen to me, I can show this card"(Pt 5)*
Would definitely recommend to other patients	*"Sure will tell to other people. We always share about this, this is the place that we can always get advice"(Pt 14)*
Go beyond the community pharmacy setting	*"No, they should do like when they have their parents-teachers meeting. During that time parents will come and that's the time. To me we need to extend our communication. I mean we need to enrich our society with knowledge" (Pt 25)*

Discussion

More than half of the patients reviewed by the CPs had at least one problem with their medication. The pharmacists intervened by educating the patients. Although this study did not evaluate whether or not the patients knowledge have improved after the intervention but other studies have shown that interventions by pharmacists may improve drug knowledge and adherence among patients.[8] Almost half of the reviewed patients experienced adverse reactions. Although MR do not significantly reduce hospital readmissions[11], most of the ADR-related admissions are however, preventable.[9] A review[10] reported that 0.2 to 12.8% of hospital admissions were related to ADR and in Malaysia, ADR-related medical ward admissions was found to be 8.4%.[11] Thus identifying and preventing ADRs at the primary stage is important as they can reduce mortality and morbidity rates and health care expenditure.[9, 10]

The study also demonstrated that medication reviews can be useful in highlighting problems which may not readily come to the attention of the GPs. The GPs may not be aware of their patients reducing or increasing medication doses, which could potentially lead to complications of the medical conditions or cause an overdose of a medicine. Non-adherence is another problem where GPs may not be aware of. Many patients do not admit to their GPs that they are not taking medicines as prescribed. Not disclosing the use of non-prescription drugs is also another issue. Other studies have also shown that medication review could identify all these problems[1, 4] A close collaboration between the pharmacists and general practitioners (GP) in MR could also improve prescribing and optimize patient use of medicines.[12, 13] However in Malaysia, the communication between pharmacists and GPs is very limited and measurements should be taken to rectify this gap.

Lack of pharmacists was often cited to be the main reason for not granting the dispensing separation in the primary care setting.[15] Limited placement opportunities in the government hospital setting have led to a policy change whereby besides government hospitals, pre-registered pharmacist can now opt to do their internship in community pharmacies. As such, pre-registered pharmacists can assist pharmacist in conducting MRs and could possibly overcome the barriers faced in the community pharmacy setting. MR program will certainly promote the profession in the eye of the public. Malaysian Pharmaceutical Society is working closely with the CPs nationwide by conducting many campaigns to create the awareness among the public with regards to medicine usage and in fact these activities were also suggested by some of the participants from this study where they urged CPs to go beyond the community pharmacy setting.

Conclusion

Although this study yielded similar findings as other studies in different countries, this program is unique and new in Malaysia. It is feasible to conduct MR in community pharmacies in Malaysia despite major barriers of not having dispensing rights and the lack of collaborative practice between GPs. All participants in this study expressed the benefits conferred by this program. In fact, pharmacy customers wanted the program to be continued in the future. CPs can take the opportunity by starting the MR services to improve patient care and develop the pharmacist-patient rapport. It is time for CPs in Malaysia play an active role to promote their profession to the public and MR program can certainly be the right platform.

Acknowledgements

We would like to thank Ministry of Higher Education, Malaysia and Universiti Teknologi MARA for the financial support. This work was supported by the Research Incentive Faculty Grant [600-RMI/DANA 5/3/RIF (738/2012)]. We would also like to thank the community pharmacists who have participated in this project.

References

1. Nathan A, Goodyer L, Lovejoy A, Rashid A. Brown bag' medication reviews as a means of optimizing patients' use of medication and of identifying potential clinical problems. Family Practice.1999;16(3): 278 - 82.
2. Krska J, Cromarty JA, Arris F, Jamieson D, Hansford D, Duffus PR, et al. Pharmacist-led medication review in patients over 65: a randomized, controlled trial in primary care. Age Ageing. 2001 May;30(3):205-11.
3. Akazawa M, Nomura K, Kusama M, Igarashi A. Drug Utilization Reviews by Community Pharmacists in Japan: Identification of Potential Safety Concerns through the Brown Bag Program. Value in Health Regional Issues. 2012;1(1):98-104.
4. Stafford AC, Tenni PC, Peterson GM, Jackson SL, Hejlesen A, Villesen C, et al. Drug-related problems identified in medication reviews by Australian pharmacists. Pharmacy World and Science. 2009 Apr;31(2):216-23.
5. Chua SS, Lim KP, Lee HG. Utilisation of community pharmacists by the general public in Malaysia. International Journal of Pharmacy Practice. 2013;21(1):66-69.
6. Blenkinsopp A, Anderson C, Armstrong M. The contribution of community pharmacy to improving the public's health: Report 2 Evidence from the UK non peer-reviewed literature 1990-2002.London: Pharmacy Health Link; 2003.
7. Pharmaceutical Care Network Europe Foundation. 2006, PCNE classification for drug-related problems version 5.01. 2006. Retrieved October 07, 2017,from http://www.pcne.org/upload/files/16_PCNE_classification_V5.01.pdf
8. Holland R, Desborough J, Goodyer L, Hall S, Wright D, Loke YK. Does pharmacist-led medication review help to reduce hospital admissions and deaths in older people? A systematic review and meta-analysis. British Journal of Clinical Pharmacology. 2008;65(3):303-16.
9. Royal S, Smeaton L, Avery AJ, Hurwitz B, Sheikh A. Interventions in primary care to reduce medication related adverse events and hospital admissions: systematic review and meta-analysis. Quality and Safety in Health Care. 2006 Feb;15(1):23-31.
10. Bouvy JC, De Bruin ML, Koopmanschap MA. Epidemiology of Adverse Drug Reactions in Europe: A Review of Recent Observational Studies. Drug Safety. 2015 May;38(5):437-53.
11. Karuppannan M, Kang Nee T, Ali S, Kok Thong W, Boardman H. The prevalence of adverse drug event-related admissions at a local hospital in Malaysia. Archives of Pharmacy Practice. 2013;4:160-7.
12. Latif A, Pollock K, Boardman HF. Medicines use reviews: a potential resource or lost opportunity for general practice? BMC Family Practice. 2013;14:57. doi:10.1186/1471-2296-14-57.
13. Ryan-Woolley BM, Cantrill JA. Professional perspective on a feasibility study of GP-pharmacist collaboration in the management of angina. International Journal of Pharmacy Practice. 2000;8(4):275-84.
14. Pirmohamed M, James S, Meakin S, Green C, Scott AK, Walley TJ, et al. Adverse drug reactions as cause of admission to hospital: prospective analysis of 18 820 patients. British Medical Journal. 2004;329(7456):15-19.
15. Mak V, Hassali MAA. Separation of dispensing and prescribing in Malaysia: Will the time come? Journal of Pharmacy Practice and Research. 2015;45(4):394-5.