IMPACT OF HOME MEDICATION REVIEW (HMR) SERVICES ON MEDICATION ADHERENCE IN ELDERLY POPULATION OF MYSORE

PT Shafeekh Ali[1], Ambed Mishra[1,2], Shilpa Palaksha[*1], BR Nataraj[3], M Bhanu Kumar[4]

[1]*Department of Pharmacy Practice, JSS College of Pharmacy, Jagadguru Sri Shivarathreeshwara Academy of Higher Education & Research, SS Nagara, Mysore-570 015, Karnataka, India.*

[2]*Assistant Professor, Department of Pharmacy Practice, Farooqia College of Pharmacy, Rajiv Gandhi University of Health Sciences, Mysore-570 021, Karnataka, India.*

[3]*General Practitioner, Mamatha Clinic, Saraswathipuram, Mysore – 570009, Karnataka, India.*

[4]*General Practitioner and Associate Professor, Department of General Medicine, JSS Medical College, Jagadguru Sri Shivarathreeshwara University, Mysore-570 015, SS Nagara, Karnataka.*

ABSTRACT

Background: The prevalence of chronic diseases and associated polypharmacy is high in elderly population. Continuous monitoring, assessment is required to improve the health outcomes as there is also chances of medication non-adherence.Home Medication Review (HMR) services are designed to provide pharmaceutical care to the patients in their home in consultation with a Physician.

Objective: To monitor the impact of HMR services on medication adherence in elderly population of Mysore.

Methodology: A prospective observational study was conducted in elderly patients around Mysore district. Upon the referral, the patients were visited and followed-up for a period of three months. Medication adherence was assessed using a standard developed and validated adherence scale. During the visit, prescription was reviewed and counseling was provided.

Statistical analysis used: Statistical Package for the Social Sciences (SPSS) version 20.

Results: A total of 45 patients were enrolled in the study and all the patients completed the study. Sixteen patients were males and 29 were females. The mean age of the patients was 65.23 ± 11.32 years. The mean increase in medication adherence was 2.61 ± 0.03 and 0.58 ± 0.39 at $P = <0.001$, in the first and final follow-ups respectively. The overall increase seen in the medication adherence was 3.19 ± 0.36 ($P = <0.001$).

Conclusions: A statistically-significant overall increase in medication adherence was observed in the patients enrolled in the study. This study concluded that HMR service is very effective in the elderly population in Indian setup as well.

Keywords: Home Medication Review (HMR), Pharmacist, General Practitioner, Elderly Patients, Medication Adherence, India.

*Correspondence: shilpapalaksha@jssuni.edu.in

INTRODUCTION

Poor adherence to treatments for chronic diseases is a major problem in the elderly patients. Medication non-adherence is a worldwide problem associated with treatment of chronic diseases and was highlighted as a problem of striking magnitude by the World Health Organization in 2003[1]. Adherence is key to therapeutic success; however, it is a multifaceted issue and should not be considered as a dichotomous variable (adherent versus non-adherent). Interestingly, drug adherence goes beyond medication consumption and is a reflection of healthy behavior [2]. Medication adherence is the process by which patients takes their medications regularly as prescribed. It is a dynamic process that changes over time. Adherence process consists of 3 components namely: initiation, implementation and persistence. The concept of percentage adherence is misleading as it does not reflect these three components.[3, 4]

Patients' awareness of their adherence patterns by patient counseling or medication review regularly can change their behavior.[1, 5, 6] The key elements to improve patient health outcomes and improving patients' medication adherence behavior include: education, motivation and measurement.[1,6] Pharmacist-led 'Home Medication Review' (HMR) Service can be helpful in improving medication adherence, especially in the elderly population. A collaborative service that involves the General Practitioners (GPs), Pharmacist and the patient is known as Home Medication Review (HMR).[7-10] Prevalence of chronic diseases and associated polypharmacy is higher in elderly population. This is the potential population for medication non-adherence. Hence, continuous monitoring and assessment is required to improve their medication adherence. Thus, providing HMR service in comfort of their home will help in continuous monitoring and assessment of medication adherence and improving their medication adherence.

MATERIALS AND METHODS

A prospective observational study was conducted in elderly patients around Mysore district. Pharmacists received the referral from the GPs and upon the referral, the patients were visited and followed-up for a period of three months. *Ethics approval:* The approval was taken from the local Institutional Human Ethical Committee of JSS College of Pharmacy, JSS University, Mysore for conducting the study. The overall methods used in our study is summarized by the figure no. 2 below.

Patients were enrolled on referral from the GPs. Upon receiving referral from the GP, the pharmacist collected relevant demographic and clinical details about the patient from the GP. The patient was contacted by telephone and an appointment for home visit was scheduled. During the home visit, informed consent was signed and case was reviewed, followed by personal discussion session with the patient and carers. The session included review of current and past medication therapy. The past medical history along with lab data of the patient was also reviewed, followed by counseling on lifestyle and diet planning (if required; case-to-case basis). Further medication management planning session was done with GPs (if required).
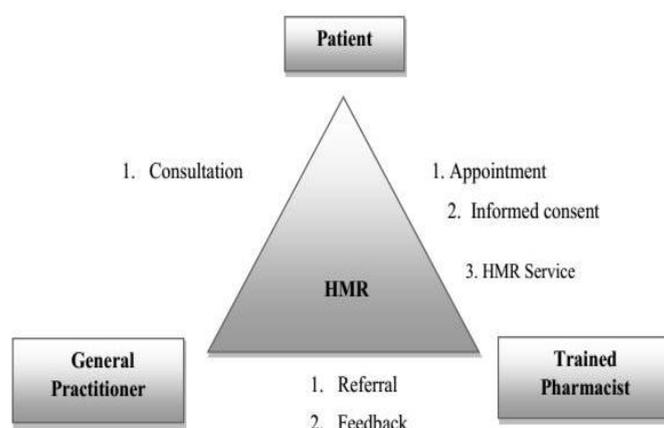

Figure 1: The process used in HMR Service

Medication adherence was assessed by using specially designed & validated Medication Adherence Scale during each follow-up: baseline medication adherence followed by two follow-ups. The collected data was analyzed using SPSS for further analysis. Descriptive statistics on sample characteristics were computed, including means and standard deviation. The differences between means were calculated using individual T-test. P-values less than 0.05 were considered statistically significant.

RESULTS AND DISCUSSION

Patient Demographics: Forty-five patients who met the study criteria were enrolled into the study. All the patients completed the study. The mean age of the study population was 65.23 ±11.32 years. There were 29 females and 16 males in the study. Demographic details of the study patients are represented in Table 1.

Table 1: Demographic details of the study population (Details are grouped according to age and gender of the enrolled patients (Values are expressed as numbers (N) for patients; percentage (%) is calculated for each group).

Demographics	Category	No. of Patients (N = 45)	Percentage (%)
AGE	≤ 59	9	20 %
	60-79	31	68.89 %
	≥ 80	5	11.11%
GENDER	Male	16	35.55 %
	Female	29	64.45 %

Assessment of Medication Adherence: Assessment of the patient's medication adherence of the study population from 1st follow-up to 2nd follow-up and 2nd follow-up to 3rd follow-up showed a mean increase in medication adherence by 2.61 ± 0.03 and 0.58 ± 0.39 respectively.

The overall mean increase in medication adherence (1st follow-up to 3rd follow-up) in the control group was found to be 3.19 ± 0.36 (P = <0.001). All the values were statistically significant (P-value = < 0.05).

Table 2: Comparison of medication adherence scores among control group follow-ups [Values are expressed as Mean ± S.D. (Standard Deviation) for medication adherence score calculated using MARS; NS = non-significant; (*T-test; P < 0.05 = Significant; < 0.001 = highly significant)].

	Mean ± S.D.	Mean ± S.D.	P-VALUE*
FOLLOW-UPs	4.6 ± 0.75 (1st)	7.24 ± 0.77 (2nd)	< 0.001
	7.24 ± 0.77 (2nd)	7.83 ± 0.39 (3rd)	< 0.001
OVERALL	4.6 ± 0.75 (1st)	7.83 ± 0.39 (3rd)	< 0.001
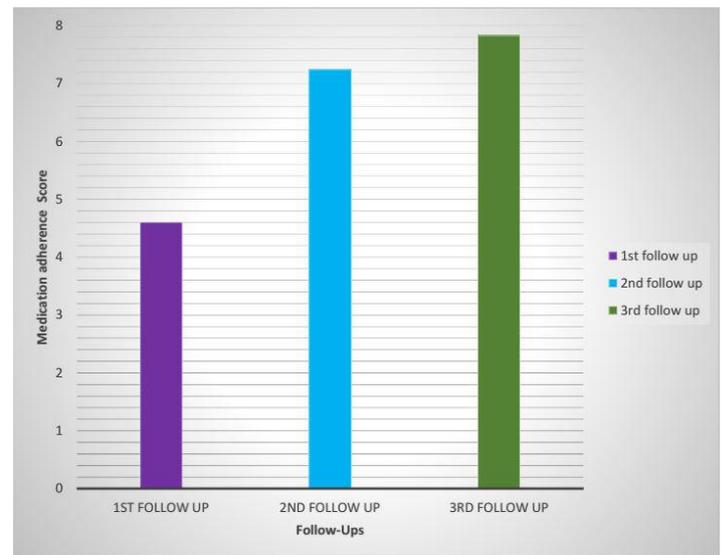
Figure 2: Comparison of between follow-ups

All the values were highly-significant statistically (<0.001), which means that the HMR service was effective in improving the medication adherence in the study population. This clearly showed that the pharmacist-led

HMR service approach was better in increasing the medication adherence. Similar finding was observed in a study carried out by Julie Ahn et al wherein HMR provided by the pharmacists resulted in enhancing the patient understanding, improved patients' medication adherence and better overall outcomes.[11]

CONCLUSION

A statistically significant overall increase in medication adherence was observed in the elderly patients enrolled in the study. This study showed that HMR service is effective in the elderly population in Indian setup as well. Similar studies are required for the studies in all the states of India for benefiting the elderly and so as to establish HMR service throughout India.

LIMITATIONS

> Time duration of our research study per day was very less and the total number of customers visiting the community pharmacy during the research work vary without any reason which has resulted to a small sample size.

> Lack of time from customers in filling up the questionnaire lead to less number of complete questionnaires.

CONFLICT OF INTEREST STATEMENT

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

FUNDING

INFORMED CONSENT

Informed consent was obtained from all individual participants enrolled in the study.

ETHICAL APPROVAL

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

ACKNOWLEDGEMENT

REFERENCES

1. World Health Organization [WHO] (2003). Adherence to Long-Term Therapies. Evidence for Action. http://www.who.int/chp/knowledge/publications/adherence_full_report.pdf (accessed 17 March, 2017).

2. Simpson, S H, Eurich, D. T, Majumdar, S. R., Padwal, R. S., Tsuyuki, R. T., Varney, J., et al. (2006). A meta-analysis of the association between adherence to drug therapy and mortality. BMJ 333, 15.

3. Vrijens, B, De Geest, S, Hughes, D. A, Przemyslaw, K, Demonceau, J, Ruppar, T, et al. (2012). A new taxonomy for describing and defining adherence to medications. Br. J. Clin. Pharmacol. 73, 691–705.

4. Corrao, G, Parodi, A, Nicotra, F, Zambon, A, Merlino, L, Cesana, G, et al. (2011). Better compliance to antihypertensive medications reduces cardiovascular risk. J. Hypertens. 29, 610–618.

5. Vrijens, B, Belmans, A, Matthys, K, de Klerk, E, and Lesaffre, E (2006). Effect of intervention through a pharmaceutical care program on patient adherence with prescribed once-daily atorvastatin. Pharmacoepidemiol. Drug Saf. 15, 115–121.

6. Vrijens, B, Urquhart, J, and White, D (2014). Electronically monitored dosing histories can be used to develop a medication-taking habit and manage patient adherence. Expert Rev. Clin. Pharmacol. 7, 633–644.

7. Graham Emblen, Emmett Miller. Home Medicines Review: the how and why for GPs. Australian Family Physician 2014;33:49-53.

8. HMR and general practitioners, Pharmaceutical Society of Australia, http://www.iaea.org/programmes/nahunet/e4/nmrm/browse.htm/

9. John Papastergiou, JohnZervas, Wilson Li, Amy Rajan. Home Medication Reviews by Community Pharmacists: Reaching out to homebound patients. Can Pharm J 2013;146(3):139-42.

10. White L, Kinner C, Carter S. Consumer perspectives of the Australian Home Medicines Review Program: benefits and barriers. Res Social Adm Pharm 2012;8(1):4-16.

11. Julie Ahn, JiEun Park, Christina Anthony, Michael Burke. Understanding, benefits and difficulties of Home Medicine Review- Patient's perspectives. Australian Family Physician 2015;44:249-53.

CITE:
Ali PTS, Mishra A, Palaksha S, Nataraj BR, Kumar MB. Impact of Home Medication Review (HMR) Services on Medication Adherence in Elderly Population of Mysore. The International Journal of Therapeutics 2018; 1(1):39-43.