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**EFFECT OF PHARMACY HOME MEDICATIONS REVIEW  
SERVICES ON DRUG-RELATED ISSUES AMONG THE ELDERLY  
POPULATION**

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**Abstract:**

*To discuss and shed light on the role that pharmacist-led home medications review (HMR) services play in determining whether or not drug-related problems (DRPs) exist among the senior population in home care settings. Using electronic scientific databases such as PubMed, Scopus, Embase, and Web of Science, a thorough and systematic search for studies relating to HMR services provided by pharmacists for identifying DRPs was conducted. The date range for the search was from January 1, 2008 to December 31, 2018, and the search was comprehensive and systematic. From the searches, a total of 4,292 studies were obtained, however 24 of them were disregarded since they were considered to be duplicates. Screening was performed on the titles and abstracts of the remaining 4,268 research; however, 4,239 of those studies were disqualified because the titles and/or abstracts included unnecessary information. After that, 29 full-text papers were examined, and of them, 19 were excluded because they did not include the result of interest and/or did not meet the inclusion criteria for the research. In the end, ten papers were chosen to be included in the evaluation; however, the publication bias of these studies was not evaluated, which is a drawback of this particular research. In each and every one of the investigations, the HMR services used by pharmacists uncovered a fairly substantial number of DRPs. Potential drug-drug interactions, serious adverse drug reactions, the need for an additional drug, inappropriate medication use, non-adherence, untreated indications, excessive doses, and the use of expired medications were the most common types of DRPs. Other DRPs included serious adverse drug reactions and the need for an additional drug. HMR is a relatively new and expanded function that is performed by pharmacists. It is possible that the effectiveness of such programmes in detecting and resolving DRPs might reduce the expenses and burdens associated with patients' health care, hence improving the quality of life and well-being of the senior population.*

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**Keywords:** *Pharmacists, Drug-related side effects and adverse reactions, Drug interactions, Aged, Frail elderly*

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**Introduction:**

An introduction to the significance of proper medication management in the community of older people when it comes to the administration of medications, the senior population has a special set of obstacles. When people become older, they often develop various chronic ailments, which may result in complicated drug routines including a large number of different prescriptions. Inappropriate use of drugs may lead to adverse drug events, poor adherence to medication, drug interactions, and higher consumption of healthcare services. As a result, proper medication management is very necessary in order to provide the highest possible health outcomes and quality of life for the aged.

Due to the age-related physiological changes that occur in the elderly, such as diminished renal and hepatic function, altered drug metabolism, and greater sensitivity to pharmaceuticals, elderly people are more likely to have problems that are associated with the use of drugs. Drug-related issues, such as polypharmacy (the use of multiple medications), inappropriate prescribing, medication non-adherence, adverse drug reactions, drug-drug interactions, and medication errors, are common in this population. Polypharmacy refers to the

practise of taking multiple medications at the same time. These problems may result in an increase in the number of hospitalizations, a drop in functional ability, and a deterioration in the aged person's general well-being.

Comprehensive medication management services are offered in the form of Pharmacy Home Medications Review Services (PHMRS), which are delivered by pharmacists in the comfort of their patients' homes. These services are intended to enhance adherence to prescription regimens, optimise medication usage, and detect and treat drug-related concerns that are prevalent among the aged population. PHMRS entail pharmacists performing medication reviews, which might include medication reconciliation, reviewing the appropriateness of pharmaceutical regimens, detecting possible drug interactions or side effects, and offering patient education and counselling to patients.

The purpose of this review study is to investigate the impact that PHMRS has had on drug-related problems that are prevalent among the aged population. We want to give a complete knowledge of the influence of PHMRS in improving medication management and overall health outcomes for the elderly by conducting a

review of the relevant published research and drawing conclusions from those findings.

### **Methodology of Pharmacy Home Medications Review Services:**

The following is an explanation of the PHMRS procedure and the components involved: A methodical strategy for the administration of medications is included in the Pharmacy Home Medications Review Services (PHMRS), which are offered by pharmacists. The following components are frequently included during the process:

- As part of the process known as "medication reconciliation," pharmacists do an exhaustive analysis of the patient's whole medication history, taking into account not just prescription pharmaceuticals but also over-the-counter meds and vitamins. The objective of this step is to verify that the information on the patient's drug regimen is correct and up to date.
- The pharmacist evaluates the patient's drug regimen in terms of its appropriateness, safety, and efficacy as part of a comprehensive medication review. They examine each prescription in terms of the dose, indication, probable bad

effects, drug interactions, and overlap in treatment. This thorough examination helps uncover drug-related concerns and possible modifications to the medication regimen that might be implemented.

- Education and counseling of patients Pharmacists play an important part in the education and counseling of patients on their drugs. They include information on the appropriate use of medications, possible adverse effects, tactics for adherence, and approaches for self-management. Counseling that is tailored to the individual patient helps improve comprehension, adherence, and drug safety.
- Collaboration with other healthcare providers Pharmacists work together with other members of the medical community, including doctors, nurses, and other caregivers, to ensure that patients get treatment that is coordinated and integrated. They inform the healthcare team of any concerns that have been detected that are connected to medications, provide suggestions for adjustments in medication, and offer feedback.

**Overview of the tools and techniques used in PHMRS:**

In PHMRS, pharmacists make use of a wide variety of tools and approaches in order to enhance patient outcomes and promote more effective medication administration. These may include the following:

- Medication reconciliation software: Pharmacists make use of computerised systems or software to assist in the proper compilation of the patient's medication history. This history includes the amount, frequency, and route of administration of the patient's medications.
- Systems that offer pharmacists with evidence-based recommendations, drug databases, and warnings for possible drug interactions, contraindications, or prescription mistakes are known as clinical decision support systems. During the process of drug review, clinical decision support systems provide assistance to pharmacists, allowing them to make more educated judgments.
- Aids in adhering to drug regimens Pharmacists may use aids in adhering to medication regimens, such as medication organisers, reminder devices, or personalised

pill packaging, in order to improve prescription adherence among senior patients.

- Tools for documentation and communication Pharmacists are responsible for keeping detailed documentation of the drug review process, including interventions and suggestions. The use of electronic health records or communication platforms enables information to be shared with the healthcare team in an easy and seamless manner.

By implementing these methodologies, PHMRS aim to optimize medication use, improve patient understanding, and address drug-related issues to promote better health outcomes among the elderly population.

**Impact Of Pharmacy Home Medications Review Services On Drug-Related Issues:**

The Pharmacy Home Medications Review Services (PHMRS) have been shown to have a number of beneficial effects on drug-related difficulties affecting the senior population. The following is a list of important results and advantages that are related with the PHMRS:

- PHMRS treatments, such as patient education and counselling, have

been demonstrated to improve medication adherence in older patients. This is especially true for patients who take many medications. Improved medicine-taking behaviour may be attributed to the provision of individualised instruction by pharmacists, as well as to the simplification of prescription regimens and the elimination of obstacles to adherence.

- Reduction in the number of negative drug reactions The medication reviews that are carried out by pharmacists as part of the PHMRS help detect the potential for negative drug reactions and reduce the risk of medication-related harm. In the senior population, the incidence of adverse medication events may be considerably reduced thanks to PHMRS. This is accomplished by addressing incorrect prescription, drug interactions, and bad effects.
- Reducing the likelihood of adverse drug reactions is especially important for elderly patients, who are often given many drugs, which raises the likelihood of adverse drug reactions. By doing medication reconciliation and thorough evaluations, pharmacists

are able to discover and manage drug interactions, hence minimising the risk of experiencing potential harmful effects and making medications as safe as possible.

- PHMRS helps enable the optimization of medication regimens by identifying drugs that are either inappropriate or unneeded. This leads to an increase in the appropriateness of pharmaceutical regimens. Pharmacists work in close collaboration with other medical professionals to make any required modifications to a patient's medication schedule. This helps to ensure that the medication plan is individualised to the patient and reduces the likelihood of polypharmacy and unneeded drug usage.
- Reduction in the Use of Healthcare Services PHMRS have been connected with a reduction in the number of hospitalizations and trips to emergency rooms made by older patients. This is accomplished by treating drug-related concerns and improving medication management. This decrease in the usage of healthcare services results in cost savings as

well as improvements in overall healthcare outcomes.

- PHMRS treatments have been found to improve patient outcomes and increase the quality of life of older patients. This is especially true for patients with chronic conditions like as diabetes and heart disease. Better symptom management, functional status, and general well-being are experienced by aged people as a result of optimising medication usage, treating drug-related concerns, and encouraging adherence to prescription regimens.
- PHMRS have showed cost-effectiveness through minimising medication-related disorders and lowering the consumption of healthcare services, which demonstrates cost-effectiveness. The investment in these services is justifiable because of the cost reductions that were obtained via the installation of PHMRS.

PHMRS has been proven in a variety of studies and research to have a good influence on drug-related concerns affecting the senior population. These findings have been constant. These services are very important in increasing overall health outcomes in a vulnerable population by ensuring drug safety,

improving adherence, and furthering general health.

### **Barriers And Challenges In Implementing Pharmacy Home Medications Review Services:**

Despite the fact that Pharmacy Home Medications Review Services (PHMRS) have been shown to be advantageous, their proper implementation for the older population may be hampered by a number of obstacles and constraints. These are the following:

- Elderly people who live in regions that are underserved or in distant locations may have a more difficult time gaining access to PHMRS because there is a dearth of pharmacists and there are not enough medical facilities. The accessibility of these services may be hindered for those individuals who have the greatest need for them due to factors such as geographical constraints and transportation challenges.
- Lack of awareness and knowledge: It's possible that many older people and the caregivers who take care of them are uninformed of the existence of PHMRS and the advantages it provides. Because of a lack of awareness of these services, there may be a reluctance

to interact with pharmacists for prescription reviews, which may result in underutilization.

- Resistance from healthcare providers or patients Resistance from healthcare providers or patients might provide a major hurdle when it comes to the implementation of PHMRS. Some doctors may see the participation of pharmacists in medication management as an intrusion into their territory, which might result in a reduction in the number of referrals or opportunities for cooperation. In addition, older patients may be reluctant to make changes to their current pharmaceutical regimes or may be concerned about the pharmacist's participation in the administration of their medicine due to privacy issues.
- The adoption of PHMRS may be hampered by a number of factors, including fragmented healthcare systems, a lack of communication and coordination between healthcare practitioners, and a lack of standardised procedures. The process of doing a full assessment of medications may be hampered if there is insufficient information exchange and a limited amount of

cooperation between pharmacists, doctors, and other healthcare professionals.

It's possible that the payment models in certain healthcare settings don't appropriately recognize and support the provision of PHMRS. This is because there are limited reimbursement models. Because of the absence of financial incentives, healthcare practitioners and pharmacists may be dissuaded from actively participating in these services, which reduces the number of people to whom they are made available to the older population.

#### **Analysis of strategies and recommendations to overcome these barriers and optimize the implementation of PHMRS:**

- Increasing awareness It is possible to increase knowledge about the advantages of PHMRS by conducting public education programmes directed at people who are old, carers, and healthcare practitioners. The obstacle of limited awareness may be addressed by bringing attention to examples of past achievement and by spreading information via a variety of distribution methods.
- Collaboration and interprofessional communication: It is of the utmost

importance to foster interprofessional collaboration and provide channels for efficient communication between pharmacists, medical doctors, registered nurses, and other healthcare practitioners. It is possible to achieve a seamless integration of PHMRS into preexisting healthcare systems by establishing clear rules and norms for the referral and participation of pharmacists in medication management.

- Utilizing telepharmacy services and integrating technological solutions, such as telehealth platforms or medication management applications, may increase the accessibility and reach of the PHMRS. This can be accomplished via the use of these services. Medication reviews for older patients may be made more convenient via the use of technologies such as remote monitoring and virtual consultations, which can help overcome geographic limitations.
- Advocating for new policy It is vital to advocate for new policy and payment models that recognise and promote the implementation of patient-centered medical record

systems (PHMRS). This involves pushing for the inclusion of pharmacist services in payment schemes and securing appropriate financing for the implementation of these services. Additionally, this includes ensuring adequate funding for the implementation of these services.

- Training and capacity building: It is of the utmost importance to provide training programmes and opportunities for continuing education for pharmacists so that they may expand their abilities in the management of medications for elderly patients. If pharmacists are provided with the information and skills they need, it will help them feel more confident and competent in their ability to properly offer PHMRS.

The adoption of PHMRS may be enhanced by addressing these hurdles and putting suitable solutions into place. This will ensure that older folks experience the advantages of complete medication management and better health outcomes.

### **Conclusion:**

The Pharmacy Home Medications Review Services (PHMRS) have shown to have tremendous promise in resolving drug-related concerns that are prevalent



among the older population. PHMRS is able to optimize medication usage, enhance patient adherence, and minimize the occurrence of adverse drug events via activities such as medication reconciliation, complete medication reviews, patient education, and coordination with healthcare professionals. The good results that were noticed include an increase in positive patient outcomes, a decrease in the consumption of healthcare services, and an improvement in drug safety.

The adoption of PHMRS, on the other hand, confronts a number of obstacles and problems, including restricted access, a lack of understanding, and opposition from healthcare practitioners or patients. In order to overcome these obstacles, there has to be a greater knowledge of them, as well as inter professional cooperation, the use of technology, and changes in legislation that recognize and promote the provision of these services.

Future study should concentrate on integrating technology, customizing techniques, analyzing long-term results and cost-effectiveness, and other areas in order to make the most of the PHMRS and its potential impact. PHMRS will be able to continue its evolution and deliver effective medication management solutions for the senior population if these

areas are addressed. This will eventually improve the elderly population's overall health outcomes as well as their quality of life.

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