REVIEW ARTICLE

PHARMACEUTICAL CARE – AN ESSENTIAL COMPONENT OF HEALTHCARE SYSTEM
Shaukat Khalid, Qurat E Noor Baig*, Zufi Shad, Iqbal Ahmad

ABSTRACT
The present review deals with the definition, importance and fundamental aspects of pharmaceutical care. Pharmaceutical care is an integral part of healthcare system in the provision of medication related care to achieve the optimal therapeutic outcomes for the patient and his quality of life. It has many advantages including the reduced chances of medication errors, increased patient compliance in medication regimen, appropriate management and to build strong relationship between the pharmacist and the patient. The various aspects of pharmaceutical care involving the patients and their requirements for adherence to pharmacotherapy have been discussed. The pivotal role of pharmacists in pharmaceutical care has been emphasized. Patient’s satisfaction with the pharmaceutical services acquiring optimal therapeutic outcomes is a key element in pharmaceutical care. Future prospects of pharmaceutical care have also been highlighted.

Keywords: Pharmaceutical care, pharmacist, therapeutic outcomes, patient-adherence, pharmacotherapy.

1. INTRODUCTION
Pharmaceutical care is an integral part of the healthcare system. It is one of the components that must be implemented to ensure better therapeutic outcomes and cost effectiveness for the patient. The mission of the pharmacist is to provide pharmaceutical care services to the best of his ability and expertise.

Pharmaceutical care has been defined as “the direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient’s quality of life”1.

2. CONCEPT OF PHARMACEUTICAL CARE
The concept of pharmaceutical care was established in United States about twenty years ago. This concept is now the prevailing form of practice for pharmacists around the globe. As the profession has diverted its focus from dispensing medications to more patient oriented, clinical practice strategies have been extended in terms of optimum care of the patients as a major objective2. Many reviews in this field imply that pharmaceutical care is more effective when delivered to the inpatient settings but that there is not much reference of its effectiveness in the ambulatory care services3-6. Pharmaceutical care, or a more keenly observed patient follow up by the pharmacist, can be depicted as assuring the safe, effective and correct usage of medications by the patients. The pharmacist as an expert of medicines, is the ultimate healthcare provider in addition to and in consultation with the physician—in terms of definite therapeutic outcomes, medication adherence and a healthy life style7.

3. ADVANTAGES OF PHARMACEUTICAL CARE
Pharmaceutical care has many benefits that include:

- Reduced chances of medication error.
- Increased patient compliance in medication regimen.
- Appropriate management of chronic disease condition.
- Build strong pharmacist - patient relationship leading to patient contentment and treatment adherence8.
- Minimize drug-drug or drug-disease interactions and drug-food interactions.
- Close monitoring of treatment regimens to achieve better therapeutic goals9.
4. **PATIENTS REQUIREMENTS AND ITS ADHERENCE TO PHARMACOTHERAPY**

Pharmacists are in an ideal position to assess and treat the adherence medication related problems that can adversely affect patients' health outcomes. Strategies to monitor and improve the adherence are key elements of the pharmaceutical care plan, especially for patients with chronic diseases, such as hypertension, diabetes, and atherosclerotic heart disease.

Medication nonadherence is most simply defined as the number of doses not taken or taken incorrectly that jeopardizes the patient's therapeutic outcome. National Council on Patient Information and Education (NCPiE) has noted that nonadherence can result in a variety of forms, including not having a prescription filled, taking an incorrect dose, taking a medication at the wrong time, forgetting to take doses, or stopping therapy too soon.

Medication nonadherence is a major public health problem that has been called as an "invisible epidemic." Nonadherence to pharmacotherapy by patients has been reported to range from 13% to 93%, with an average rate of 40%. The problem encompasses all ages and ethnic groups. It has been estimated that 43% of the general population, 55% of the elderly, and 54% of children and teenagers are nonadherent resulting in incomplete pharmacotherapy. A host of individual characteristics also influence adherence, such as the patient's religion, health beliefs, social support system, and ethnicity. Nonadherence to pharmacotherapy has been shown to decrease productivity and increase disease morbidity, physician office visits, admissions to nursing homes, and ultimately death. For example, an estimated 125,000 deaths per year have been attributed to nonadherence to treatment for cardiovascular disease.

Patients who have chronic conditions, physical or cognitive impairments, or cultural backgrounds outside the mainstream may have special needs that should be addressed in the adherence plan. Pharmaceutical care plans also should take into account the patient's age, stage of life, and literacy level. Adherence to pharmacotherapy is essential for the patient to achieve optimal therapeutic outcomes.

5. **PIVOTAL ROLE OF PHARMACIST IN PHARMACEUTICAL CARE**

Pharmacist can plan, direct and implement pharmaceutical care activities within the community pharmacy and ambulatory settings. In these areas the pharmacists are involved in many actions such as:

- Assessing the adherence problem.
- Identifying predisposing factors.
- Providing comprehensive counseling.
- Recommending specific adherence strategies targeted to the patient's needs.
- Recognition, prevention and management of drug interaction.
- Monitor Adverse Drug Reactions (ADR’s).
- Interpretation of Lab test.
- Develop and maintain protocols and follow them as a Clinical Pharmacist.
- Apply pharmacokinetic rule to determine the patient specific dosing.
- Dose adjustment according to patient need promoting maximum efficacy and minimum toxicity.

6. **RELEVANCE TO PATIENT’S TREATMENT AND WELFARE**

Pharmacists practicing in community or healthcare setup believed that pharmaceutical care should represent their profession's objectives. Fortunately, patients were very supportive of pharmacists' being involved in their health care, and they were generally very delighted and contented with their own pharmacists. Although the pharmaceutical care
plans should be provided through patient to patient, some adherence-promoting is intended for the welfare of the patients\textsuperscript{18}. Whenever possible, the pharmacist should strive to:

6.1. Promote Self-Monitoring
Motivate the patients to play an active part in their own treatment plans. In general, the more confident people feel about their ability to manage a problem, the more likely they will be able to take positive action to solve that problem. For example, a study by Nessman and colleagues \textsuperscript{21} revealed that patients with hypertension who were highly involved in decisions about their therapy and trained to take their own blood pressure had significantly better health outcomes than patients who did not have such potentials.

6.2. Patient Education
A pharmaceutical care plan to improve adherence should first concentrate on patient education and family members or attendants about the patient's disease and therapy. Pharmacists should provide both written and verbal information to address the basic questions related to the disease condition, treatment plan and role of patient in the disease management. Perhaps surprisingly, the amount of factual information that a patient has about his or her medication is not highly correlated with adherent behavior\textsuperscript{14}. Instead, the patient's functional knowledge i.e. information that is directly useful and meaningful to the patient and clear instructions for medication use are more significant\textsuperscript{22}.

6.3. Avoid Fear Tactics
Scaring the patients may cause nonadherence of the pharmacotherapy or giving them dire warnings about the consequences may actually worsen adherence\textsuperscript{23}. A more constructive approach is to help the patient focus on ways to integrate medication taking into his or her daily routine\textsuperscript{24}.

6.4. Offer a Reward
Prescription coupons or specific product discounts can be rewarded for successfully reaching to the end of the therapy, this strategy can help to promote adherence, particularly in patients with low motivation\textsuperscript{18}.

7. ULTIMATE OUTCOMES OF PHARMACEUTICAL CARE
It is the goal of pharmaceutical care to assure individual patient's quality of life through accomplishment of predefined medication-related therapeutic outcomes.

The following outcomes can be predicted:
- Cure of a patient’s disease.
- Elimination or reduction of a patient’s symptomatology.
- Arresting or slowing of a disease process.
- Prevention of a disease or symptomatology.

This, in turn, involves three fundamental acts:
- Identifying potential and actual medication related problems
- Resolving actual medication-related problems
- Preventing potential medication-related problems\textsuperscript{25}.

8. FUTURE PROSPECTIVES OF PHARMACEUTICAL CARE
It is too early for analysts to predict the long term consequences of the pharmaceutical care concept. Pharmacists have been educated and getting training in the field of clinical pharmacy over the last two decades. Current scenario reflects this important shift from dispensing medications to an orientation concerned with patients receiving necessary drug information\textsuperscript{26}. Thus, it is possible to evaluate the benefits of pharmaceutical care on patients' health and ultimately on society. Many studies have been conducted, which show that the provision of pharmaceutical care has its value in common pathologies such as diabetes, hypertension, asthma,
hyperlipidemia, chronic pain, rheumatic diseases or psychiatric disorders, as well as in polymedicated patients\textsuperscript{2}.

It will take some time that this divisive pharmaceutical profession will unite and continue its progress toward greater societal responsibility for the ancient tool we call medicines\textsuperscript{26}.

9. CONCLUSION
The importance of pharmaceutical care in achieving better therapeutic outcomes and cost effectiveness for the patient has been outlined. The system is prevalent in advanced countries to take care of the health problems of the community and to highlight the role of pharmacists in the provision of proper medication and ultimate improvement of human health and standard of well being. It needs to be emphasized that pharmacists in advanced countries have to play a pivotal role in the implementation and success of pharmaceutical care which needs to be introduced in this country.

REFERENCES


