REVIEW

PATIENT COUNSELING BY PHARMACIST -A FOCUS ON CHRONIC ILLNESS

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ABSTRACT

The management of chronic illness needs lifestyle modifications and drug therapy for a long period. Patient understanding regarding the illness plays a very important role in management of chronic illness. Effective patient counseling makes the patient understand his/her illness, necessary lifestyle modifications and pharmacotherapy in a better way and thus enhance patient compliance. The pharmacist has immense responsibility in counseling the patients with chronic illness. The counseling pharmacist should possess adequate knowledge and should be an effective communicator, making use of the verbal and non-verbal communication skills.

Keywords: Chronic illness, patient counseling, pharmacist

INTRODUCTION

The availability of and rational use of medicines are critical for a successful therapeutic outcome. Though rapid developments in science and technology have led to easy understanding of etiology and pathophysiological basis of various diseases and development of new molecules, many times clinicians fail to achieve the desired therapeutic goals. One of the major reasons for this can be the patient non-compliance or partial compliance towards the prescribed treatment (World Health Organization, 2003).

Patient compliance is defined as the adherence of a patient towards the prescriber's instructions. It implies an understanding of how the medicine is to be used, as well as a positive behavior in which the patient is motivated sufficiently to use the prescribed treatment in the manner intended because of a perceived self-benefit and a positive outcome (e.g. enhanced quality of life and well being). Non- compliance can lead to various consequences including underuse, overuse, misuse, abuse etc (Hussar DA, 2000). The most common factors associated with non-compliance are the nature of the disease, multiple drug therapy, frequency of drug administration, duration of drug therapy, adverse events, cost of medications, administration technique, taste of medication etc (Ramesh, 1999). In the present days, the term "concordance" is used more often in place of "compliance".

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Table 1: Drug counseling points in hypertension (USPDI, 1997; British National Formulary, 2003; Sweetman, 2002)

Drug category	Pharmacist role
Diuretics	Monitor for muscle weakness, confusion, dizziness. Ensure patient participation in dose modulation. Select appropriate dose timing to avoid frequent urination in the night. Explain about the possibility of drug interactions with ACE inhibitors.
Beta blockers	Monitor for hypotension, dizziness, headache, and bradycardia. Educate regarding possibility of nocturnal dreams, impotence and CNS problems. Explain the need for dose tapering before stopping the drug.
ACE inhibitors	Monitor for hypotension, dizziness, cough, taste disturbances and rash.
Calcium channel blockers	Monitor for swollen gums, chest pain, swollen joints (with nifedipine), constipation, dizziness, and light-headedness. Educate the patient to swallow the extended release tablets as a whole. Explain to the patient how to monitor his heart rate by measuring the pulse rate.
Alpha blockers	Monitor for hypotension. Patients on Gastro Intestinal Therapeutic System (GITS) preparation should be told not to crush/chew the tablets.

Table 2: Drug counseling points in Diabetes (USPDI, 1997; British National Formulary, 2003; Sweetman, 2002)

Drug category	Pharmacist role
Sulfonylureas	Explain the methods to prevent, detect and manage hypoglycemia. Monitor for symptoms of jaundice. Discuss the administration time in relation to food and need for alcohol abstinence, ask for history of sulfur sensitivity
Insulin	Explain the methods to prevent, detect and manage hypoglycemia. Educate the patient regarding newer insulin administration techniques, proper storage conditions for insulin. Ask the patient to carry chocolates or other sweets during travel and ask him not to miss the meals.
Metformin	Advice the patient to take with/after food. Monitor for muscle pain, unusual sleepiness, nausea, stomach pain, weight loss.
Thiazolidinediones	Take history of liver problems; monitor the patients for yellow discoloration of urine. Monitor the patient for peripheral edema.
Acarbose	Encourage the patient to take it with the first bite of food. Monitor for abdominal pain and cramps. Advice the patient not to take sucrose (Sugar) during hypoglycemic attack as it may not be absorbed when acarbose is taken.

The results of several studies suggest that up to 10% of hospital admissions and 23% of nursing-home admissions are related to non-compliance (McKenney and Harrison, 1976; Strandberg , 1984). A review of published studies of drug-related hospital admissions reported that 22.7% of adverse drug reaction hospitalizations were induced by non-compliance (McKenney *et al*., 1973).

With significant growth and development over the past 30 years, the profession of pharmacy has evolved a new concept called pharmaceutical care; the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve the patients' quality of life. These outcomes are cure of disease, elimination or reduction of symptoms, arresting or slowing of disease progressions, or preventing a disease or symptomology (Hepler and Strand, 1990). One of the important aspects of pharmaceutical care is counseling patients concerning medications. It has been the responsibility of pharmacists to counsel the patient's before dispensing the medication (Popovich, 1995). Counseling not only enhances compliance, but also reduces complications resulting from non adherence to treatment.

Patient counseling

Patient counseling may be defined as providing medication information orally or in written form to the patients or their representative or providing proper directions of use, advice on side effects, storage, diet and life style modifications. It involves a one-to-one interaction between a pharmacist and a patient and/or a care giver. It is interactive in nature. The effective counseling should encompass all the parameters to make the patient/party understand his/her disease, medications and life style modification required (Beardsley , 1997); ASHP, 1997).

Contents of patient counseling

Several guidelines have been published regarding the points to be covered while counseling the patients. The Omnibus Budget Reconciliation Act (OBRA) 1990, (OBRA 1990, 1990) guidelines specify that the pharmacist should discuss at least the following points while counseling the patients:

Table 3: Drug counseling points in coronary heart disease (USPDI, 1997; British National Formulary, 2003; Sweetman, 2002)

Drug category	Pharmacist role
Beta-blockers	Monitor for hypotension, dizziness, headache, and bradycardia. Educate the patient regarding possibility of nocturnal dreams and CNS problems. Explain the need for dose tapering before stopping the drug.
Nitrates	Sublingual administration, sublingual tablets should not be chewed or crushed, use of transdermal patches, do not stand up immediately while using this medication. Monitor for bluish colored lips, fingernails or palms.
Aspirin	Encourage the patient to take drug with food. Monitor for abdominal pain, tarry stools, fever, spitting of blood. In case of enteric-coated preparations, ask the patient not to crush or chew the tablets.

Table 4: Drug counseling points in dyslipidemia (USPDI, 1997; British National Formulary, 2003; Sweetman, 2002)

Drug category	Pharmacist role
Statins	Educate the patient to take these drugs after food. It is advisable to take these medications during night (except for atorvastatin). Ask the patient to report to the doctor if any signs of muscle pain appear.
Fibrates	Take with or immediately after food to lessen stomach upset. Monitor for blood in urine, chest pain, and shortness of breath, stomach pain.
Anion exchange resins	This medicine should never be taken in dry form. Mix the medicine with beverage or drinks. Monitor for stomach pain, nausea, and vomiting, belching, bloating, diarrhea.
Nicotinic acid derivatives	Do not crush, break or chew the extended release medication. Monitor for darkening of urine, loss of appetite, severe stomach pain, and yellow eyes.

Table 5: Drug counseling points in asthma (USPDI, 1997; British National Formulary, 2003; Sweetman, 2002)

Drug category	Pharmacist role
Beta receptor agonists	Short acting drugs belonging to this category should be used mainly for symptom relief. Patients on long acting drugs should be told that the medication may take some time period to show the action. Patient also needs monitoring for tremors and muscle pain.
Theophyllines	Patients on sustained release preparations should be told not to crush/chew the tablets.
Anticholinergics	Monitor for dry throat, nausea, headache, blurred vision, and painful urination.
Corticosteroids	Medications should be administered regularly. They should not be stopped abruptly. It needs dose tapering before stopping. Emphasize gargling of mouth after use of inhaled medications.
Mast cell stabilizers	Patient should be told that this medication is used to prevent the asthma attack and it does not relieve bronchospasm that has already started.

Name and description of the medication, the dosage form, route of administration, duration of therapy, special directions and precautions for preparation, administration and use of the prescribed drugs by the patient, common side effects or adverse effects or interactions and therapeutic contraindications that may be encountered, including their avoidance, and the action required if they occur, techniques of self monitoring of drug therapy, proper storage, prescription refill information, action to be taken in case of missed dose. The other published guidelines in the context of patient counseling include the one by Society of Hospital Pharmacists Australia (SHPA) (Dooley *et al*., 1996) and American Society of Hospital Pharmacists (ASHP) (ASHP, 1976).

Techniques of counseling

Several techniques can be adopted for effective counseling. Some of them include providing written information to the patient and the use of audiovisual materials. The use of various compliance aids include labeling, medication calendars, drug reminder chart and providing special medication containers and caps can also be adopted. The United States Pharmacopoeia (USP) medication counseling behavior guidelines divide medication counseling into the following four stages (USP, 1997).

Stage I: Medication information transfer, during which there is a monologue by the pharmacist providing basic, brief information about the safe and proper use of medicine.

Table 6: Drug counseling points in epilepsy (USPDI, 1997; British National Formulary, 2003; Sweetman , 2002)

Drug category	Pharmacist role
Barbiturates	Explain the patient about the possibility of dependence. Explain the possibility of drug interactions especially with oral contraceptives. Monitor for fever, skin rashes, swelling of eyelids, mental depression.
Benzodiazepines	Monitor for behavior problems, mental depression, impaired memory, skin rash. Explain to the patient regarding the drug interaction. Monitor for symptoms of overdose.
Hydantoins (Phenytoin)	The patient should be advised not to stop the medicine or take other medicine without the doctor's advice. Explain to the patients the various symptoms of overdose. Monitor for gum bleeding, bone malformations, headache, and joint pain, learning problems in children. Patients should be explained regarding the drug interaction potential of the drug.
Valproates	Controlled release and sustained release preparations should not be chewed or crushed. They should be swallowed whole.
Succinamides	This should be taken with food or milk so as to reduce the stomach upset. Patients should be advised to give their medication history before undergoing surgery as this drug can potentiate the CNS effect of anesthetics.

Table 7: Drug counseling points in rheumatoid arthritis (USPDI, 1997; British National Formulary, 2003; Sweetman, 2002)

Drug category	Pharmacist role
Methotrexate	Monitor for back pain, dark urine, drowsiness, headache, yellow colored urine. Advice not to take alcohol. Take pregnancy history before initiation of the drug. Ask the patient to consult the doctor before taking NSAIDs.
Non Steroidal Anti Inflammatory Drugs (NSAIDs)	Monitor for abdominal pain, tarry stools, fever, spitting of blood. Ask the patient to take the drug with full glass of water and mention not to lie down for 15- 30 minutes after taking the medicine. Advice the patient to take this medicine with food.
Cyclooxygenase-2 (COX-2) inhibitors	Monitor for dark colored stool. Advise the patient to take the medicine after food so as to reduce the stomach irritation.
Corticosteroids	Advise the patient to take with food. Monitor for blurred vision, frequent urination, confusion, excitement, and infection at injection site. Take diabetic history before initiation of the drug. Explain to the patient about dose tapering. Warn against missing of doses.

Stage II: Medication information exchange, during which the pharmacist answers questions and provides detailed information adapted to the patients' situation.

Stage III: Medication education, during which the pharmacist provides comprehensive information regarding the proper use of medicines in a collaborative, interactive learning experience.

Stage IV: Medication counseling, during which the pharmacist and patient have a detailed discussion intending to give the patient guidance that enhances problem-solving skills and assists with proper management of medical conditions and effective use of medication.

Communication skills in patient counseling

Communication is the exchange of information, ideas, thoughts and feelings. It involves not just the spoken words, but also what is conveyed through inflexion, vocal quality, facial expression, body posture and other behavioral processes. Effective communication with patients depends greatly on the degree of empathy demonstrated in the course of conversation. Pharmacist should use proper verbal and non-verbal communication skills during the counseling session. Studies repeatedly show that effective patient counseling can significantly reduce patient non-adherence, treatment failure, and wasted health resources. To be good communicators, pharmacist must be attuned to the types of questions asked, the manners in which questions are asked,

Table 8: Impact of patient counseling in chronic illnesses

S. No	Authors	Disease	Intervention	Outcomes
1	Mehos *et al* (2000)	Hypertension	Pharmacist initiated home blood pressure monitoring and intervention on blood pressure control	Pharmacist intervention improved blood pressure control in patients with uncontrolled hypertension.
2	Hawkins *et al*. (1979)	Hypertension/ Diabetes	The control group received conventional care by a single physician and the experimental group received care directly by a pharmacist that was monitored closely by a physician.	Increase in patient satisfaction and patient compliance with treatment regimen in experimental group
3	Sczupak *et al*. (1977)	Diabetes	The study group was monitored for their drug therapy through a patient profile from and provided with information and training to improve compliance. The control group received only dispensing of formulary medications and clarification of the physicians directives.	The study group were more compliant in keeping clinic appointments, had fewer medication errors, fewer hospital admissions, fewer changes in therapeutic regimens and a lower incidence of hospital admissions than the control group.
4	Rasheed A *et al*. (2002)	Diabetes	Patients on the test group received pharmacist provided diabetic counseling, instruction on dietary regulation, exercise and other life style modifications. Control group patients did not receive counseling.	The study results showed that pharmacist provided patient counseling resulted in better glycemic control and improved quality of life in the test group patient compared to control group diabetes patients
5	Jaber *et al*. (1996)	Diabetes	The intervention group received diabetes education, medication counseling, and instruction on dietary regulation, exercise and home glucose monitoring. The control group received standard medical care provided by their physicians.	In the intervention group, there was statistically significant improvement in glycated hemoglobin and fasting blood glucose levels after 4 months, which was not observed in the control group.

and the avoidance of repetition (Ranelli 2000; Roter *et al*., 1998). The counseling pharmacist should be well dressed so that the patient feels the pharmacist is a professional. The nature of the counseling should be tailored to the patient population. A good counselor is one who listens to the patient carefully and shares the problems intimately so that the patient expresses the emotions underlying the disease. During counseling pharmacist should be totally involved in the counseling and should not be half minded. Even attending a telephone call while counseling may affect the quality of counseling. An effective counseling will end up with several questions being asked by the patient. Throughout the counseling process, the pharmacist should avoid jargons and slang expressions.

Patient counseling - a growing need in chronic illness

Unlike acute illness where the patient get himself treated at an ambulatory care center or admits himself for a short period in the hospital, the chronic illness require hospital stay, self monitoring, follow-up, lifelong drug therapy, non-pharmacological measures and several lifestyle modifycations (Lewis *et al*., 1997).

It is well known that the most prevalent chronic illnesses are strongly linked to specific behaviors such as smoking, diet, sedentary lifestyle, intravenous drug abuse etc. Prevention and effective treatment of these illnesses require behavior changes. Pharmacists familiarize themselves with recent developments in the scientific study of the behavior change. Moreover, chronic illness in many cases is life-long. It damages the patients' "biography" and self-image and usually has a more severe impact than acute illness on quality of life. When providing medication counseling to patients with chronic illnesses, pharmacists must be sensitive to the broad array of challenges the patients face. For the patients with chronic diseases, home is the central site of managing illness and these patients also require more knowledge on the management of their illness. Since chronic illnesses move through different phases and these phases of illness require different kinds of managing strategies these patients are primarily concerned with quality of life (Lewis *et al*., 1997). In this article the authors make an attempt to emphasize some of the commonly seen chronic illnesses where pharmacists can play an active role through counseling.

1. Hypertension

Though hypertension is not a disease, it is known to be an important risk factor for several complications resulting in end organ damage (Thomas, 2003). If uncontrolled it can lead to a huge adverse impact on quality of life. The management of hypertension requires non-pharmacological as well as pharmacological methods (Chobanian *et al*., 2003).

Non-pharmacological measures: In many occasions non-pharmacological treatment alone may suffice in the management of hypertension. A pharmacist can counsel the patients regarding weight loss and regular exercise, sodium and calorie restriction, restriction of saturated fats and increased intake of dietary fibers, restriction of alcohol intake, smoking cessation, caution while using cold remedies containing sympathomimetics, self-monitoring of blood pressure etc.

Pharmacological measures: In a majority of patients, drug therapy is required. The patients often underestimate hypertension as by itself it usually does not exhibit any major symptoms. Thus non-compliance becomes very common. Added to this is the fact that many of the antihypertensive drugs causes side effects that are very serious such as Angiotension Converting Enzyme (ACE) inhibitors induced cough, beta blockers induced bradycardia etc. In some cases the dose modulation of the drugs is also very essential. Some of the pharmacological measures that can be taken by the pharmacist during counseling are listed in table 1.

2. Diabetes

Diabetes is a chronic disease with altered carbohydrate, lipid and protein metabolism (Kapur *et al*., 1998). The chronic complications of diabetes are known to affect the quality of life of diabetic patients. Various factors like understanding of the patients about their disease, socioeconomic factors, dietary regulation, self-monitoring of blood glucose are known to play a vital role in diabetes management. Patient counseling and education are known to improve the quality of life of these patients (Rasheed *et al*., 2002). Because of the rapid expansion of available therapeutic agents to treat diabetes; the pharmacist's role in caring for patients with diabetes has expanded. The pharmacist can educate the patients about the proper use of medications, screen for drug interactions, explain monitoring devices, and make recommendations for ancillary products and services. Some of the non-pharmacological and pharmacological measures are listed below.

Non-pharmacological approaches: The pharmacist can give an overview of diabetes, stress and psycho-social adjustment, family involvement and social support, nutrition, exercise and activity, monitoring and use of results, relationship between nutrition, exercise, medication, and blood glucose level. Advice regarding the prevention, detection and treatment of acute / chronic complications, foot, skin and dental care, behavior change strategies, goal setting, risk factor reduction, and problem solving, preconception, pregnancy and postpartum management.

Pharmacological measures: Studies suggest that the complications of diabetes can be reduced by tight glycemic control (The diabetes control and complications trial research group, 1993; UKPDS Group, 1998). Tight glycemic control depends upon the patients' adherence towards drug therapy as well as on diet and exercise. The drugs used in diabetes are also known to possess certain peculiar features such as "Taken half an hour before food" in case of Sulfonylureas; "awareness of hypoglycemia" during insulin therapy etc. Table 2 lists some of the important pharmacological measures a pharmacist should stress while counseling diabetic patients.

3. Coronary heart disease

As with other chronic diseases, the aim of treatment is to reduce the mortality, morbidity and associated impairment in the quality of life. A pharmacist can play an active role in the management of this chronic illness in several ways.

Non-pharmacological measures: It includes education regarding diet, smoking, and exercise and encouraging the patients to maintain a diary on anginal attacks, pain symptoms etc.

Pharmacological measures: Educating the patients on the use of nitrates in case of an acute anginal attack is one of the important roles of pharmacists. Some of the important pharmacological measures are listed in table 3.

4. Dyslipidemia

The management of dyslipidemia always requires lifestyle modifications along with adherence to medications. Dietary advice is the cornerstone of management. Patients should be encouraged to increase their intake of dietary fibers, which can reduce the fat content in the blood. Pharmacists should stress both non-pharmacological as well as pharmacological management in this illness (Ginsberg and Goldberg, 2001).

Non-pharmacological approaches: It includes regular exercise to reduce body weight, use of unsaturated fats, fruits and vegetables containing antioxidants, stress management, avoidance of drugs that are known to increase cholesterol level etc.

Pharmacological measures: The potential life threatening rhabdomyolysis due to statins especially when combined with fibrates necessitates patient counseling for hypolipedimic drugs. Some of the counseling points are listed in table 4.

5. Asthma

Asthma is a chronic condition requiring life long drug therapy. Pharmacist can play an active role in counseling the patient regarding self monitoring of drug therapy, other life style modifications and usage of specialized dosage forms such as metered dose inhalers, dry powder inhalers, spacers etc.

Non-pharmacological measures: Safety measures while traveling, prophylactic use of drugs before exercise, avoidance of allergens, stopping cigarette smoking etc.

Pharmacological measures: Patient involvement in management of asthma is very important. Specific counseling on drug therapy should concentrate on three areas; drugs to relieve symptoms, drugs used to prevent asthma attack and those drugs which are given only as reserve treatment for severe attacks (Gibbs and Small, 2003). Training regarding use of the metered dose inhaler is one of the important roles of the counseling pharmacist. Use of these specialized devices is one of the major causes of non-compliance in these patients. Many times the patients fail to take the inhaled steroids, as they do not produce any immediate effects. Some of the pharmacological measures to be included while counseling these patients are summarized in table 5.

6. Epilepsy

Management of an epileptic patient depends upon the severity and pathogenesis of the condition. Strict compliance with medication forms the cornerstone of the treatment. Failure to comply with treatment regimens leads to increased seizure recurrence. Poorly controlled seizures increase the likelihood of hospital admission, which raises healthcare costs. Indirect costs associated with seizure recurrence include injuries inflicted on self and others, loss of employment, and loss of health insurance benefits, as well as social costs (e.g., lost workdays) (Buck *et al.,* 1990; Leppik,1990). A pharmacist can contribute significantly in this illness.

Non-pharmacological measures: They include regular follow-ups, avoidance of sleep deprivation, and avoidance of (Over The Counter) OTC medications; stress relieving activities, psychosocial counseling etc.

Pharmacological measures: Since the therapeutic effect of the drugs is directly dependent on the serum concentration of the drugs, it becomes essential that the patient should be strictly compliant. If the level comes down, a breakthrough seizure can occur. Some of the measures that can be undertaken by the pharmacist are mentioned in table 6.

7. Rheumatoid arthritis

Rheumatoid arthritis is a chronic disabling condition with significant impairment in the quality of life of the patient.

Non-pharmacological measures: Patient education regarding physical therapy, occupational therapy, exercise program, screening for early detection and treatment of the disease can be initiated by the pharmacist.

Pharmacological measures: The drugs used in rheumatoid arthritis are not free from adverse effects. The role of pharmacist is discussed in table 7.

Impact of patient counseling in chronic illnesses

Several studies acknowledge the impact of patient counseling provided by pharmacist in chronic illness. Some of them are listed in the table 8.

CONCLUSION

Though the diagnosis of a particular disease can be made more easily due to the improvement in science and technology, patient compliance, the key factor in therapeutic success of drug therapy in chronic illness needs further focus and emphasis. It becomes essential for the health care workers including prescribers, dispenser and nurses to take part effectively in counseling the patients in their area. A 100% compliant patient with sufficient knowledge regarding his/her disease, medication and lifestyle modification is a long journey. Pharmacists, being active members of the healthcare team can play an important role in providing patient counseling so as to improve patient compliance and hence the therapeutic outcomes and quality of life. Moreover the patient counseling by pharmacists also enables the doctors to spend more time on examination and diagnosis the patients as the counseling part is taken care of by the pharmacist. It also helps in many ways to improve the quality of healthcare system with better patient care and therapeutic outcomes.

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