

MEDICATION COUNSELING CENTER IN A TEACHING HOSPITAL

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ABSTRACT

Patient compliance is often not achieved during drug therapy. Many reasons including lack of patients' understanding regarding medication and disease, poor socioeconomic pattern, unavailability of drugs are attributed to this situation. Providing counseling to patients can improve their understanding regarding medication, disease and life style modifications which in turn improves compliance. Medication counseling centers are one of the means to counsel the patients. The study was conducted to analyze the performance of such a center at Manipal Teaching Hospital, a teaching hospital in Western Nepal. Patients were counseled as per the Omnibus Budget Reconciliation Act-1990 guidelines and data were collected from the documentation form of the center and analyzed. Results indicated that 84.5% of the patients were directed to the medication counseling center by the pharmacists. Nearly one quarter of the population was either asthmatic or chronic obstructive pulmonary disease patients. Bronchodilators were found to be the major therapeutic category of drugs and were found in 26.7% of the patients. Among the various counseling aids, placebo inhalers were used in 45.1% of the patients. The counseling pharmacists dedicated an average time period of 6-10 minutes in about 42.1% of the patients. Language was found to be the major barrier while counseling 16.5% of the patients. The study concluded that the medication counseling center can play a definite role in enhancing patients' understanding about medications and disease pattern, which in turn may improve patient compliance.

Key Words: *Compliance aids, Counseling aids, Counseling barriers, Medication counseling center, Patient compliance.*

INTRODUCTION

With the advancement in science and technology, the understanding of etiology, pathophysiological basis of various diseases, and development of new biologically active molecules possessing pharmacological actions have become more apparent. However, many times clinicians fail to achieve the desired therapeutic goals. One of the major reasons for this can

be attributed to the patients' non-compliance or partial compliance.¹ Compliance with the therapy implies an understanding of how medication 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 (eg, enhanced daily functioning and well-being). Some have recommended the use of the terms adherence, concordance, or persistence rather than the term

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compliance; however, the latter term continues to be the most widely accepted and used.² Reports suggest that up to 10% of hospital admissions³ and 23%⁴ of nursing-home admissions are related to non-compliance. A review of published studies of drug-related hospital admissions reported that 22.7% of adverse drug reaction related hospitalizations were due to non-compliance.⁵ Patient counseling is known to improve patient compliance.⁶ The term 'counseling' has been used increasingly to describe the sympathetic interaction between pharmacist and patient, which may go beyond the conveying of straightforward information about the medication and how and when to use it. The goal of medication counseling is to provide information to the patients directed at encouraging safe and appropriate use of medication, thereby enhancing therapeutic outcomes.⁷ Studies have demonstrated the usefulness of pharmacist-provided medication counseling in terms of patient compliance, therapeutic outcomes and quality of life.^{8,9,10} Ideally, medication counseling should be provided to all patients so as to ensure appropriate use of drugs. If constraints preclude verbal counseling for all patients, categories of patients should be identified where maximum benefit is likely. These patient categories include patients with serious and unstable disease states, patients receiving specific medications such as drugs with a narrow therapeutic index, patients treated with complex drug regimens, patients whose established medications have been altered, elderly and pediatric patients, patients identified as non-intentional non-compliers and patients with language or reading difficulties.¹¹ Several techniques can be adopted for effective counseling; some of them include providing written information to the patient, usage of audiovisual materials and use of compliance aids such as labeling, medication calendars, drug reminder chart and by providing special medication containers and caps.² Changing the physical design of the pharmacy to accommodate a counseling station is known to reduce the barriers encountered during counseling.¹² The concept of medication counseling by pharmacists is new in Nepal. The medication counseling center (MCC) at Manipal Teaching Hospital (MTH), Pokhara has been functioning since February 2004. Periodic evaluation of such a center would be of great help to improve its performance.

The present study was conducted with the objective of analyzing the services provided by the MCC at MTH, Pokhara.

MATERIAL AND METHODS

Setting

The study was carried out at the MCC, located adjacent to the out-patient pharmacy, MTH. The MCC was established in February 2004 and functions as a unit of Drug Information Center of the hospital.

Data source

After providing counseling to the patients, the counseling pharmacist fills the details in the medication counseling documentation forms. (Appendix I). The filled medication counseling documentation forms of the patients visiting the MCC was analyzed.

Design

Cross-sectional.

Sampling

All the medication counseling documentation forms filled in the center during the study period (February-August 2004) were taken for analysis.

Data collection

After getting their medications from the pharmacy, the patients were counseled by qualified pharmacists at the MCC as per the Omnibus Budget Reconciliation Act-1990 (OBRA-1990) committee recommendations that include description, dosage form, dosage regimen, route of administration, duration of therapy, special directions, common side effects and methods to overcome them, self monitoring techniques, storage condition, refill information, missed dose and other relevant information. For the purpose of effective counseling, several counseling aids were used. Compliance aids such as medication envelopes were used for better patient compliance. Pharmacists documented all the relevant data regarding the patient and medication in the medication counseling documentation form. These data from the documentation forms have been used for the analysis in this study.

RESULTS

During the study period, a total of 439 patients were counseled encompassing a total of 1323 drugs.

Out of the 439 participants counseled, females were more (56.95%). Patients between the age group of 21-30 years were highest in number (18.60%), followed by 31-40 (17.44%), 61-70 (16.28%), 11-20 (15.81%), 51-60 (15.58%), 41-50 (10.23%), >70 (6.74%), and <10 (1.40%) years, respectively. Among the study population, majority of the patients were married. It was also found that pharmacist directed counseling was observed to be significant in number 371 (84.5%), followed by direction as per the doctor order, comprising 38 (8.6%) and intentional visit 17 (3.9%).

Since the diagnosis of the patients were not written in the prescription, pharmacists made the provisional diagnosis of the study subjects. Since the type of counseling needed for the

patients depends upon the patient diagnosis, there was a need for the pharmacist to make a provisional diagnosis.

Table I depicts the presumed diagnosis of the patients who were counseled at the center. Among the study population, asthma or chronic obstructive pulmonary disease (COPD) were found to be the major illnesses, followed by allergy, sinusitis, and thyroid disorders.

Therapeutic category of drugs

Bronchodilators (26.76%) were the drugs found to be used in majority of the patients as well as the drug category counseled in major patient population. Table II lists the therapeutic category of drugs counseled by the center.

Use of counseling aids

Table III demonstrates the use of counseling aids. Among the

Table I : Presumed diagnosis (n=439)

Presumed Diagnosis	No. of patients (%)
Asthma or Chronic Obstructive Pulmonary Disease	96 (22%)
Allergy	70 (15.95)
Sinusitis	53 (12.07)
Thyroid Disorders	12 (2.73)
Asthma and Hypertension	7 (1.59)
Chronic Obstructive Pulmonary Disease	6 (1.37)
Respiratory Tract Infection	6 (1.37)
Neck Congestion	5 (1.13)
Agoria	4 (0.91)
Diabetes	4 (0.91)
Sinobitus	2 (0.46)
Chronic Obstructive Pulmonary Disease and Hypertension	2 (0.46)
Epilepsy	2 (0.46)
Astoria, Cough and Asthma	1 (0.23)
Hypertension	1 (0.23)
Cholelithiasis	1 (0.23)
Diabetes and Hypertension	1 (0.23)
Chronic Obstructive Pulmonary Disease and Respiratory Tract Infection	1 (0.23)
Allergy & Hypertension	1 (0.23)
Others/Unidentified	164 (37.35)

Table II : Therapeutic category of drugs counseled (n=1323)

Therapeutic category	No. of drugs (%)
Bronchodilators	354 (26.76)
Analgesics and non-steroidal anti-inflammatory agents	262 (19.80)
Antibacterials	179 (13.53)
Infectious diseases (Antimicrobials)	136 (10.29)
Chromosomal agents	85 (6.42)
Drugs acting on cardiovascular system, kidney and blood	74 (5.59)
Dermatological and topical agents	31 (2.34)
Vitamins, minerals and dietary supplements	28 (2.12)
Central nervous system drugs	24 (1.81)
Hormones and Hormone analogues	21 (1.59)
Anti-diabetics	2 (0.15)
Anti-parasites	3 (0.23)
Others (Topical preparations, multiple combinations, injective drugs, liquid preparations)	92 (7.00)

Table III : Usage of counseling aids

Counseling aids	Number (%) n=439
Tablets	198 (45.10)
Syringes	19 (4.33)
Tablet syringe	5 (1.14)
Resubals	3 (0.68)
Tablet pack	2 (0.46)
Suppositories	0 (0)
Pastilles	0 (0)
Others (Neck sprays, Respiratory masks, Tablets)	124 (28.25)
None	28 (6.38)

Table IV : Points discussed during counseling

Points discussed	No. of drugs (%) (n=1,323)
Description	472 (35.28)
Dosage form	430 (32.50)
Dosage regimen	426 (32.20)
Route of administration	422 (31.90)
Duration of therapy	345 (26.08)
Special directions	190 (14.36)
Common side effects, contraindications	215 (16.25)
Self monitoring techniques (for e.g. monitoring the blood glucose by the diabetic patients)	175 (13.23)
Storage	361 (27.29)
Refill information	218 (16.48)
Missed dose	265 (20.03)
Others (Drug and disease related queries)	23 (1.74)

Table V : Time taken for counseling

Time taken (min)	Number (%) (n=409)
< 5	74 (18.09)
6-10	125 (30.56)
11-15	93 (22.73)
16-20	31 (7.58)
21-25	12 (2.93)
26-30	3 (0.68)
> 30	3 (0.68)
Unrecorded	38 (9.26)

various counseling aids, inhalers (45.1%) were used most frequently than any other counseling aids.

Points discussed during counseling

As shown in table IV, various points were discussed during counseling process. It was found that the description of the dosage forms was found to be the major counseling point made by the pharmacist, followed by description, dosage regimen, route of administration, storage conditions, duration of the therapy, missed dose, refill information, common side effects, special directions and self monitoring.

Time taken for counseling

Majority of the patients were counseled for 6-10 minutes (42.14%). The details are as listed below in table V.

Barriers to counseling

The major barrier (16.5%) during counseling was found to be the language between the patient and the counseling pharmacist. It was quite appreciable to notice that, first counseling was effective in 67.43% patients, while 30% had to be counseled for a second time also during the same visit. Three times and more counseling were done for only 0.7% and 0.2% of patients, respectively.

The effectiveness of counseling was assessed based on the feedback obtained by the pharmacist from the patients regarding their medications. The feedback obtained was filled in the Medication counseling documentation form (Appendix I). If the patient was able to repeat the instructions given by the pharmacist then the patient was considered familiar with his/her medications.

DISCUSSION

The study was evident in describing the performance of MCC, Pokhara. It was found that women were more inclined to get medication counseling. This shows the inquisitiveness of women for knowing their medicines. It could be because they were less educated than males.

We could not find any major difference between the age groups of patients visiting the center. However, it was noticed that there were less pediatric and geriatric patients. The less in number of geriatric patients (>60 yrs) visiting the MCC (23.02%) is comparable with the hospital medical records data (10.89 %). However, the number of pediatric patients (<10 yrs) visiting the MCC (1.40%) was much lower than the pediatric patients visiting the OPDs (12.02%). It could be related to the adequate

advice they received from doctors at OPDs and did not need any more counseling at MCC. It was interesting to note that few patients visited the center due to their own interest. These patients might have been counseled previously and were influenced by the counseling provided by the center.

Majority of the patients counseled were suffering either from asthma or COPD. This justifies the use of placebo inhalers more often as the counseling aids. It is well known phenomenon that incorrect use of the inhaler is known to cause suboptimal treatment in approximately 75% of the patients using metered dose inhalers.¹³ This specialized dosage forms require more focused counseling. In our study, we could not evaluate the impact of counseling in terms of correct use of inhalers.

Drugs for which counseling has done varied among wide therapeutic categories. Bronchodilators were the category of drugs counseled more frequently. The reason behind this could be, bronchodilators are commonly available as inhalers and hence required specialized counseling. Antimicrobial agents and anti-inflammatory analgesics have also been counseled in a significant number of patients. The counseling regarding these agents is very essential to reduce the possibility of resistance development as well as side effects, respectively. During counseling, the pharmacist laid emphasis upon the importance of drug therapy as well as the methods to detect and manage adverse drug reactions. However, we could not evaluate the impact of seasonal variation of disease on the drug use pattern of bronchodilators, antimicrobials and analgesics due to lack of availability of data.

Studies have revealed that placebos can be a good tool for better patient understanding of drugs.¹⁴ In our study, we also found placebo inhalers as the major counseling aids. However, we did not evaluate the impact of placebo inhalers in terms of patients' understanding of correct usage of metered dose inhalers.

In majority of the cases, the patient alone was counseled whereas in few cases, both the patient and the patient party were counseled. In certain patient groups such as pediatric, psychiatric, debilitated and elderly patients, it is better to counsel the patient party as well. Several guidelines specify the minimum points to be covered during counseling. It was evident from the study that almost every point as per the OBRA-1990¹⁵ was covered during the counseling. Description of the dosage forms, the regimens and the routes of administration were the commonly counseled points.

One of the important objectives of counseling is to make the patients involve more in their drug therapy. A study conducted in a community pharmacy setup revealed that pharmacist integrated care services can involve patients in self-monitoring of

drug therapy.¹⁶ It was a welcoming effort that self-monitoring techniques were also emphasized during counseling. It is also known that pharmacist provided patient education increases patients understanding regarding drug therapy.¹⁷

Storage condition for drugs is one of the important parameter as the temperature varies from 5 to 30° C in the Western region of Nepal. Improper storage can lead to molecular modification of drug products which may lead to reduced therapeutic activity as well as toxicity.^{18,19} In case of patients with chronic illness such as diabetes, hypertension, psychiatric illness, patients tend to refill the prescription for a duration more than prescribed by the doctor. The counseling regarding refill information in this category of patients can be a tool to reduce self medication and can prevent drug abuse as well. The patients may have doubts regarding missed dose. It is necessary to emphasize the action to be taken during a missed dose so that the patients become an active partner in their drug therapy. This is essential in case of drugs such as antimicrobials and antidiabetics where specialized instruction is warranted.

Dedicating extra time may have an additional impact on the quality of counseling. However, it may be a difficult task for a dispensing pharmacist during the busy hours. In the present study, majority of the patients were counseled for a period of 6-10 minutes.

There are several barriers to counseling; some of them are lack of time, lack of personnel, layout of pharmacy, patient attitude, and lack of privacy etc.^{20,21} In our study, we found language to be the main barrier to counseling. It is because some of the pharmacists working in the center were from neighboring country, India, for whom Hindi is the vernacular. It was noted that some of the patients asked several doubts during counseling. In few cases, counseling was repeated to the patients so that they could understand the details of their therapy more clearly.

The functioning of the MCC at Manipal Teaching Hospital is impressive. The center allows the pharmacists to perform their professional roles and enhance them to be more patient oriented. The demand of counseling by pharmacists is increasing as more and more drugs with different administration techniques are being widely used. Added to this, the increase in patients with chronic diseases who require lifelong medications also necessitates the need for counseling. Moreover, the clinicians are overloaded with patients, which necessitates pharmacist to involve actively in providing medication counseling. MCCs can definitely play a key role in providing drug related information to patients and should be supported in developing countries like Nepal. Moreover, the cost involved in setting up a MCC is less and allows even a small hospital to run such a center without much financial implications. The role of community

pharmacists in implementing the concept of medication counseling is very vital. Training for the pharmacist in this area is warranted urgently.

Limitation of the study

The diagnosis of the patient does not represent the true clinical diagnosis. It was presumed by pharmacist. Due to lack of manpower, we could not follow up these patients to evaluate the impact of practice outcomes due to counseling. We also could not use any sort of audio-visual aids or patient information leaflets, which could have made counseling more effective.

Future directions

The counseling process may be extended to the hospitalized patients and the patients should be followed up for a period of time. In addition, patient information leaflets and other specialized techniques like audiovisual aids, medication calendars etc can be developed for better patient understanding.

CONCLUSION

The study concluded that MCC in MTH performs patient-oriented activities so as to enhance patient compliance, which is the key factor in drug therapy.

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