

## JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH

**How to cite this article:**

ALAM K, PALAIAN S, MISHRA P, SAH AK, UPADHYAY DK, BHANDARI RB. PERFORMANCE OF THE MEDICATION COUNSELING CENTER IN MANIPAL TEACHING HOSPITAL: A FOLLOW UP STUDY. Journal of Clinical and Diagnostic Research [serial online] 2009 February [cited: 2009 February 2]; 3:1319-1325.

Available from

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## ORIGINAL ARTICLE

# Performance Of The Medication Counseling Center In Manipal Teaching Hospital: A Follow Up Study

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### ABSTRACT

**Objective:** Non-compliance to drug therapy is a common problem worldwide. Providing counseling to the patients regarding their medication is a better means to improve patient compliance. The present study evaluated the performance of the Medication counseling center in Manipal Teaching Hospital, Pokhara, Nepal.

**Methods:** The filled medication counseling documentation forms during the period of three years (September 2004 to September 2007) were analyzed. The data obtained were entered in a Microsoft Excel spread sheet and were analyzed.

**Results:** Altogether, 1105 patients were counseled (as per the Omnibus Budget Reconciliation Act -1990 guidelines) by the center from September 2004 till August 2007. Females comprised 51% of the patients who received counseling. Nearly half of the counseled patients were from the Department of Otorhinolaryngology. Nasal spray was the most commonly used counseling aid (44.48 %). A majority of patients were counseled regarding the dosage form of the medication (97.29%), the dosage regimen (96.38%), the description of the medicine (96.02%), the route of administration (95.84%), duration of therapy (90.41%) and storage conditions (80.45%). Nearly 6-10 minutes were spent while counseling one third of the patients. In general, patients with modified drug delivery system, such as the metered dose inhaler and dry powder inhalers, were counseled more frequently.

**Conclusion:** It can be concluded that the Medication counseling center in the Manipal Teaching Hospital plays an important role in educating the patients regarding safe and effective use of their medications.

**Practice implications:** In resource limited countries like Nepal, pharmacists can provide counseling to the patients through medication counseling centers. This may in turn improve patient adherence, which is one of the common causes for therapeutic failures in countries like Nepal.

**Key words:** Nepal, Non-compliance, Patient counseling.

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## Introduction

Non-compliance to drug therapy is a common problem worldwide. The problem of non-compliance is documented even in developed countries. Evidence suggests that non-compliance can lead to adverse drug reactions (ADRs) [1] and therapeutic failures [2]. There are several reasons for non-compliance. The most common reasons include ADRs due to medication, poor understanding of instructions, the cost of medications, frequent administration, etc[3],[ 4],[ 5]. Several strategies can be taken to improve patient compliance. One of the best means is the counseling of the patient by the pharmacists. Several studies have acknowledged that counseling by pharmacists can improve the patient's understanding about medication and lifestyle modifications[6],[7] ,[8]. Patient counseling is defined as providing medication related information orally or in written form to the patients or their representatives, on topics like direction of use, advice on side effects, precautions, storage, diet and life style modifications[9]. The ultimate goal of counseling is to provide information directed at encouraging safe and appropriate use of medications, thereby enhancing therapeutic outcome[.10]. The concept of patient counseling is very new in South Asia. One study from the neighbouring country, India, evaluated the impact of counseling by pharmacists[11].

In Nepal, due to poor literacy rates, lower economy and various other reasons, there are inadequate resources for patients to get information about their medicine. Moreover, there are no patient information leaflets in the pharmaceutical products manufactured by the Nepalese companies. Even while dispensing the medication, the retail Pharmacists do not provide adequate information to the patients. Even the Doctors and Nurses do not spend adequate time in counseling the patients. Manipal Teaching Hospital (MTH) is the first hospital in Nepal to set up a Medication Counseling Center (MCC) in Nepal. The counseling is done as per the Omnibus Budget Reconciliation Act -1990 (OBRA-90)[12]. The preliminary evaluation of the MCC after the

initial six months of functioning, concluded that the medication counseling center can play a definite role in enhancing the patient's understanding about the medications and the disease pattern, which in turn, may improve patient compliance[13]. Successively, a number of initiatives have been carried out to improve drug use situations in MTH. A hospital drug and therapeutics committee (DTC) was formed, consisting of staff from the departments of the hospital and the clinical pharmacy, pharmacology, medicine, administration and other clinical departments. The DTC has undertaken a number of initiatives to improve the prescribing of medicines[14]. Restricting the number of brands in the hospital pharmacy and creating a hospital drug list, were some of the initiatives carried out[15]. The department of pharmacology runs a drug information and pharmacovigilance center (DIPC) in the teaching hospital. The DIPC also introduced a Continuing Pharmacy Education (CPE) program for the pharmacists working in the hospital. The CPE focused mainly on diseases like diabetes, hypertension, asthma etc, where the pharmacists need to know more while counseling the patients in the MCC[16]. The impact of these initiatives on the functioning of the MCC was not studied. Hence, the present study was carried out.

The objectives of the present study were

1. To study the demographic details of the patients visiting the medication counseling center
2. To study the therapeutic category of the drugs about which the patients were counseled
3. To study the counseling and compliance aids used by the pharmacists during the counseling process
4. To study the content of counseling provided to the patients
5. To study the time spent by the pharmacists in counseling the patients

(Table/Fig 1)  
**Medication counseling Documentation Form**  
**Medication counseling center**  
 A unit of Drug Information center  
 (in collaboration with USIP/QUASAD)  
 Maulana Teaching Hospital, Pokhara, Nepal

S.No. \_\_\_\_\_ Dept. \_\_\_\_\_

Patient Name \_\_\_\_\_ Hospital No. \_\_\_\_\_ Date \_\_\_\_\_

Sex M/F \_\_\_\_\_ Status M/S/D/W \_\_\_\_\_ Age \_\_\_\_\_

Purpose of the visit \_\_\_\_\_ Presumed diagnosis \_\_\_\_\_  
 Intentional \_\_\_\_\_  
 Directed by the pharmacist \_\_\_\_\_  
 Directed by the doctor \_\_\_\_\_  
 Others (Mention) \_\_\_\_\_

Evaluation (Pre counseling)				
Drug regimen	How to take	When to take	How much to take	How long to take

Counseling aids used  
 Inhaler  
 Insulin pen  
 Spacer  
 Rotahaler  
 Syringes  
 Suppositories  
 Pessaries  
 Others(Please mention) \_\_\_\_\_

Counseling given to:  
 Patient \_\_\_\_\_  
 Party(Mention) \_\_\_\_\_  
 Others(Mention) \_\_\_\_\_

Points covered during counseling  
 Description of the medication  
 The dosage form  
 The dosage  
 Route of administration  
 Duration of therapy  
 Special direction  
 Common side effects and methods to prevent, detect and manage  
 Techniques of self monitoring of drug therapy  
 Storage conditions  
 Prescription, refill information  
 Action to be taken in case of missed dose  
 Others (Please mention) \_\_\_\_\_

Compliance aids used:  
 Envelope  
 Medication calendar  
 Others(Mention) \_\_\_\_\_

Barriers to counseling:  
 Language \_\_\_\_\_  
 Lack of patient interest \_\_\_\_\_  
 Others(Mention) \_\_\_\_\_

Time taken to counsel (Approx)  
 From \_\_\_\_\_ To \_\_\_\_\_ Total duration \_\_\_\_\_

Evaluation (Post counseling)				
Drugs	How to take	When to take	How much to take	How long to take

Explanation given  
 Once  
 Twice  
 Thrice  
 More than 3 times

Pharmacist note: \_\_\_\_\_

Name and signature of the attending pharmacist: \_\_\_\_\_



Appendix 2: Various counseling aids used by the counseling pharmacists



Appendix 3: Medication envelope, the most commonly used compliance aids while counseling

## Methods

The filled medication counseling forms [Table/Fig 1] during the period of three years (September 2004 to September 2007) were analyzed. The data obtained were entered in a Microsoft Excel spread sheet and analyzed as per the study objectives.

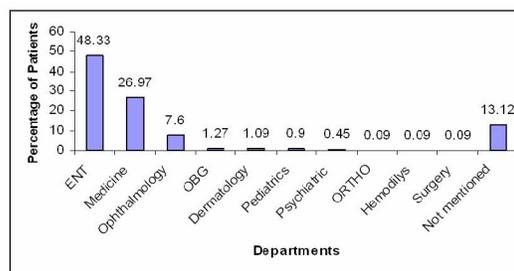
## Results

Altogether, 1105 patients were counseled during the study period. Among these patients, a majority [51% (n=566)] were females. Among the total patients, [49.5 % (n=547)] were married. The age distribution of the patients who received counseling is given below in the [Table/Fig 2].

(Table/Fig 2) Age distribution of patients (n=1105)

Age group	Total number	Percentage
Less than 10 yrs	39	4
11-20 Yrs	165	15
21-30 Yrs	248	22
31-40 Yrs	152	14
41-50 Yrs	119	11
51-60 Yrs	138	12
61-70 Yrs	121	11
> 70Yrs	69	6
Not mentioned	54	5

The departments from where the patients came to the MCC were studied. The details are shown in [Table/Fig 3].



(Table/Fig 3) Department wise distribution of patients visiting the MCC

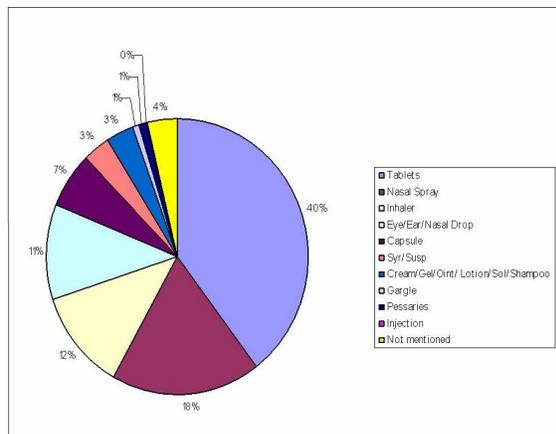
Note: ENT= Otorhinolaryngology, OBG= Obstetrics and gynecology, Ortho=Orthopedics

Most of the patients who visited the MCC were directed by the pharmacists (62.3%) and then by the doctors (12.9%). However, 7.2% of the patients visited, based on their own interest. The therapeutic classifications of the drugs counseled by the pharmacists in the MCC are given in [Table/Fig 4].

(Table/Fig 4) Therapeutic classifications of drugs counseled in the MCC

Therapeutic classification	Number of drugs	Percentage
Hormone and hormone antagonists	599	22.33
Antimicrobials	434	16.18
Antihistaminics	370	13.8
Bronchodilators	267	9.96
Respiratory drugs	181	6.75
Drugs acting on the autonomic nervous system	173	6.45
Drugs acting on cardiovascular renal and hemopietic systems	134	5
Analgesics and anti-inflammatory agents	93	3.47
Drugs acting on the gastrointestinal tract	72	2.68
Vitamins, minerals and dietary supplements	58	2.16
Antifungals	40	1.49
Antidiabetics	31	1.16
Dermatological and topical drugs	29	1.08
Anti-parasites	24	0.89
Centrally acting drugs	23	0.86
Not mentioned	16	0.60
Others	136	5.07

Most of the drugs about which counseling was given were of oral dosage form (48.1%), followed by inhalation medications (34.14%), topical agents (14.8%) and few (0.41%), which belonged to the parenteral dosage forms. The details of dosage form of the counseled drugs are shown in [Table/Fig 5].



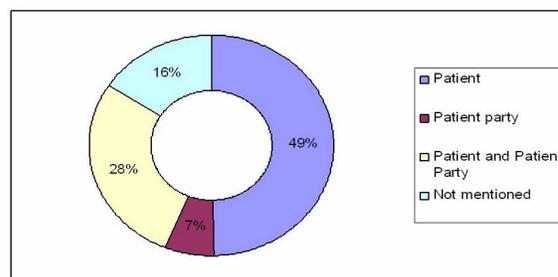
[Table/Fig 5] Dosage form of the counseled drugs.

The pharmacists used certain counseling aids while counseling the patients. The details regarding the use of counseling aids are given in [Table/Fig 6].

(Table/Fig 6) Counseling aids used to counsel the patients

Counseling aids	Total number of counseling aids	Percentage
Nasal spray	492	44.48
Metered dose inhalers	283	25.59
Eye/ ear/ nasal drops	193	17.45
Rotahaler (Dry powder inhaler)	78	7.05
Cream / ointments	37	3.35
Pessaries	10	0.9
Insulin pen	3	0.27
Spacer	3	0.27
Others	7	0.63

The pharmacists provided counseling to the patients directly in a private space. Sometimes the counseling was given to the patient parties as well. The details of the receivers of the counseling are given in [Table/Fig 7].



(Table/Fig 7) Details of counseling receiver

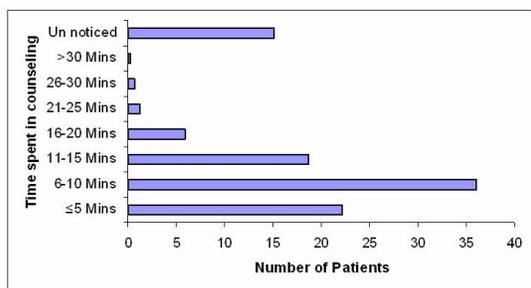
The various points covered while counseling the patients are studied. The details are given in [Table/Fig 8].

(Table/Fig 8)Points covered during the counseling process (As per OBRA 90) [12]

Points covered	Total number of patients	Percentage
Dosage form	1075	97.29
Dosage regimen	1065	96.38
Description of the medicine	1061	96.02
Route of administration	1059	95.84
Duration of therapy	999	90.41
Storage	889	80.45
Special directions	779	70.5
Refill information	581	52.58
Missed dose	577	52.22
Self monitoring techniques	563	50.95
Common side effects, methods to overcome	562	50.86
Others	3	0.27

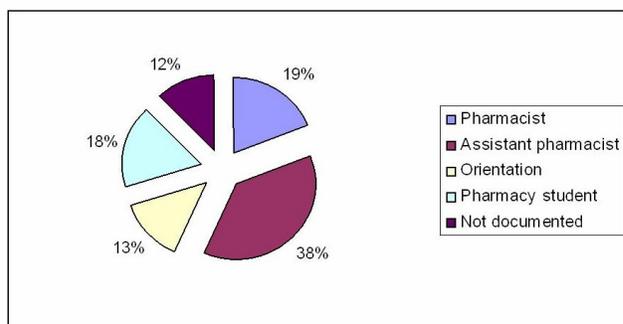
While counseling, the pharmacists used ‘compliance aids’ in order to improve the compliance following the counseling. The most commonly provided compliance aids were ‘medication envelops’ (52%), followed by ‘medication calendar’ (0.63 %) and Leaflets

(0.09%). However, in 44.71% of the cases, compliance aids were not used. The amount of time spent by the pharmacists to counsel the patients is given in [Table/Fig 9].



(Table/Fig 9) Time spent by the pharmacists to counsel the patients

The majority of times counseling was given by the ‘pharmacy assistant’ and then by the ‘pharmacist’. The details are given in [Table/Fig 10].



(Table/Fig 10) Professional background of the counseling pharmacists

### Discussion

The present study evaluated the performance of the MCC in MTH. Most of the patients visiting the MCC were from the Department of Otorhinolaryngology. This is because a considerable number of patients were prescribed with nasal sprays. In general, patients with nasal sprays required counseling regarding the use of the device. However, the previous study identified placebo MDIs to be the most commonly used counseling aids[13]. This finding suggests that many patients who initially received counseling for the MDIs did not need counseling during their follow-up visits. We found hormone and hormone

antagonists to be the most commonly counseled class of drugs. This is because these patients were prescribed with corticosteroids to be inhaled, which required counseling.

For better counseling, the pharmacists used ‘counseling aids’. Counseling aids are one of the better means to improve counseling (Appendix 2) Refer: [Table/Fig 1]. The most commonly used counseling aids were nasal sprays, metered dose inhalers (MDI) and rotahalers (a form of dry powder inhaler). Counseling patients with MDI is very essential. It has been shown that approximately 75% of the patients using MDIs do not take them properly[ 17].

In cases such as paediatric patients, elderly etc, the pharmacists counseled the patient party. It was understood that it was better to counsel the patient attendants of these patient population, so as to have a better compliance.

In MCC, counseling is provided as per the OBRA recommendations. As per the OBRA recommendations [12], the pharmacist must provide certain information to the patients while dispensing medication in the US. In Nepal, recently the good pharmacy practice (GPP) guidelines has been drafted, which also provides certain guidelines for the pharmacist to counsel the patients [18].

Dedicating adequate time is an important factor while counseling the patients. In our study, the pharmacists spent 6-10 minutes for more than one third of the patients, which is a welcoming effort. Dedicating more time will certainly have a positive impact on counseling.

In order to improve the outcome of the counseling, the pharmacists used ‘compliance aids’ that include medication envelopes, medication calendar and leaflets. The use of leaflets and medication calendar were very poor, and needs to be improved. The use of medication envelopes is one of the better means while counseling the illiterate patients.

## Conclusion

The present study was successful in identifying the performance of the Medication counseling in MTH. Patients from the Otorhinolaryngology were the ones visiting the MCC more often. In general, the patients with modified drug delivery systems such as the MDIs and dry powder inhalers were counseled more frequently. The time spent by the pharmacists is adequate and in some cases, the patient parties were counseled for better outcomes. It can be concluded that, MCC at MTH plays an important role in educating patients towards safe and effective use of medicines.

**Practice Implications** In resource limited countries like Nepal, pharmacists can provide counseling to the patients through medication counseling centers. This may in turn improve patient adherence, which is one of the common causes for therapeutic failures in countries like Nepal.

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