A Study on Prescription and Dispensing practice at a government medical college hospital: A Review

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Abstract: Medication errors are one of the leading causes of mortality and morbidity in many countries can occur in any step of medication use process that is, prescribing, administration and dispensing error. Clinical pharmacist can play a major role in this situation appears to be a strong intervention and earlydetection and prevention of medication errors and thus can improve the quality of care to the patients. The main aim of this study is to evaluate the prescribing and dispensing practice at a government medical college hospital of Udaipur, Rajasthan. This prospective observational/Survey study is conducted in outpatients those who participate in patient counselling. Educating the patients about the drug and their importance of right use, literacy can be helpful in minimizing errors.

Key words: Medication errors, Clinical pharmacist, Counselling, Prescribing, Dispensing practice.

INTRODUCTION

Over the past decades, the pharmacy profession had gone through various stages to conquer one of the relevant positions in the Health care system throughout the world. Earlier, pharmacy professionals called compounders were focused on the preparation, compounding, storage and dispensing of medicines. With significant growth and development over the past 30 years, the profession of pharmacy has evolved a new concept called pharmaceutical care.

Now-a-days medical practitioners really more heavily on medications than in the past.[8] For these medications to work to their full potential, patients need to take them correctly. One of the important aspects of pharmaceutical care is counselling patients concerning medications. It has been the responsibility of pharmacists to counsel the patient's before dispensing the medication. Counselling not only enhances compliance, but also reduces complications resulting from non-adherence to treatment.[6] Patient counselling is defined as providing medication information orally or in written form to the patient or their representative on direction of use, advice on side effects, precaution, storage, diet and life style modification. Good communication skills are needed to gain the patients' confidence and motivate the patient to adhere to the recommended regimen.[7] In 1994 the WHO assembly drew up a declaration that stated "Patients have the right to be given factual, supportable, understandable and appropriate information, to be provided in such a way as to allow them to decide whether they wish to receive therapy". There has also been an increase in the demand for health-related information by patients.[9]

1. National scenario:

In India the first master in pharmacy practice was developed in 1996 but from then more emphasis was given on attending ward rounds, drug information and drug therapy review but important given for patient counselling was not up to the mark. In India 95% of pharmacist do not offer counselling services to patients. This is because of provider based, patient based and system based barriers.[7]

2. International scenario:

In developed countries pharmacist take the responsibility of patient counselling. In America the pharmacist counselling patients on the correct use of medication was started from 1964 and the use of private hospital for patient pharmacist interaction, counselling the patients was started from 1965.

3. Medication Error

"Medication error as the administration of the wrong medication or dose of medication, drug, diagnostic agent, chemical, or treatment requiring the use of such agents, to the wrong patient or at the wrong time, or the failure to administer such agents at the specified time or in the manner prescribed or normally considered as accepted practice [4]".

Barker & McConnell (1962)

Health professionals are always looking for to improve

the quality and safety of healthcare. Medicines are a key component of healthcare and errors relating to medication may impact on patient safety.[12] Medication error, one of the leading causes of mortality and morbidity in many countries, can occur in any step of medication use process i.e. prescribing errors, administration errors, dispensing errors.[13] In 1999, the Institute of Medicine reported that 44,000 to 98,000 people annually die in US hospitals as a result of medical errors. Medication errors occurring either in or out of the hospital are estimated to account for at least 7,000 deaths each year. Although most of these errors are harmless, or intercepted on time, some do result in an adverse drug event (ADE).[15] Medication errors are more common than adverse drug events, but result in harm less than 1 % of the time. About 25 % of adverse drug events are due to medication errors. In Indian Hospital pharmacies dispense hundreds of thousands to millions of medication doses annually, for both ambulatory and hospitalized patients.[7] A medication error is a failure in the treatment process that leads to, or has the potential to lead to, harm to the patient.[13] Many Healthcare literatures are rich with evidence indicating the medication errors that lead to increased hospital readmissions and healthcare costs.[7] The American Society of Health-System Pharmacists (1993) defined a medication error as any preventable event that may cause or lead to inappropriate medication use or patient harm, while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems including: prescribing; order communication; product labelling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.[4] Prescription and dispensing errors are the most sensitive phases in medication errors[5]. Sometimes prescribing errors leads to cause dispensing errors. Errors made during prescribing and dispensing are the most common type of error and it is avoidable.

Medication Errors occurring either in or out of the hospitals resulting patient injury and death are significantly high and unacceptable numbers. One of the most important works was the Harvard Medical Practice study. In this study, it was shown that 3.7% of patients admitted to hospitals in the State of New York experienced injury resulting from care. It was also shown that 19% of these injuries were caused by the use of medications. Evidence from a number of sources over several decades indicates that a substantial number of patients suffer iatrogenic injuries while in hospital[10]. Medication errors should be identified and documented in order to recognize recurring causes and therefore develop systems to minimize them.[7] The difficulty, however, in detecting medication errors has been recognized for many years. It is accepted that most medication errors are probably undetected and that of those that are detected only 5% are reported. The remainders are not reported for a variety of reasons including lack of awareness that an error has been made, lack of familiarity with reporting mechanisms, difficulty/time constraints in completing report forms, fear of possible legal ramifications for both individual and the organization, and lack of feedback to staff causing a reduction in motivation to continue submitting reports. Direct comparison of error rates between studies becomes difficult when a variety of error definitions and data collection methods have been used.[12] Ongoing monitoring programs for the detection and management of medication errors within a hospital are needed. According to the American Society of Health System Pharmacists guidelines on preventing medication errors in hospitals, medication errors should be identified and documented and their causes studied in order to develop systems that minimize recurrence. A first step toward improving the quality of a drug distribution system and reducing drug-related errors is to employ an effective mechanism for systematic collection and feedback on errors. The main aim of this study was to detect, identify and document the onset, underlying cause, incidence and type of medication errors and assess the severity of medication errors in the outpatient departments of a south Indian hospital.[10]

DEFINITION AND KEY CONCEPTS

1. Clinical pharmacy

Clinical pharmacy has been defined by the American College of Clinical Pharmacy as a "Health science specialty which embodies the application by pharmacists, of the scientific principles of pharmacology, toxicology, pharmacokinetics and therapeutics to care for the patient[8]"

2. Prescribing

The act of deciding to treat a patient with a drug and communicating the decision and the instructions for

preparation and use of the drug. [33]

3. Dispensing

Dispensing practice ensure that as effective form of the correct medicine is delivered to the right patient in the correct dosage and quantity with clear instruction and is a package that maintain the potency of the medicine dispensing includes all the activities that occur between the time the prescription is printed and the time the medicine or other prescribed item are issued to the patient.[3]

4. Pharmaceutical Care

In 1990, pharmaceutical care was defines ad "The responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life" (Hepler and Strand). The definition has changed and was in 2004 defined as "a patient-centred practice in which the Practitioner assumes responsibility for a patient's drug-related needs and is held accountable for this commitment".[8]

5. Medication Profile

A medication profile is a patient record specific to one single patient, including information on patient demographics, diagnoses and health problems, medications (both past and present), doses, dosing frequency, allergies, and other information relevant for the medication therapy review. Information is collected both from the patient records at hospital and provided by the patient.[8]

6. Medication errors

According to ASCP, A medication error is defined as any preventable event that may cause or lead to inappropriate medication use or patient harm, while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems including: prescribing; order communication; product labelling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.[3]

7. Prescribing Error

The inappropriate selection of a drug (based on indication, contraindication, known allergies, existing drug therapy, and other factors), dose, dosage form, route of administration, concentration, rate of administration, inappropriate or inadequate instruction for use of a medication order by physician.[3]

8. Polypharmacy

Polypharmacy has been variously defined; in research studies a commonly applied definition has been the concomitant use of five or more drugs[34].

9. Drug interaction

"The pharmacologic or clinical response to the administration of a drug combination different from that anticipated from the known effects of the two agents which given alone."

(Tatro (Ed.) drug interaction facts J.B Lippincott Co.st.Louis 1992)

10. Incomplete prescription

According to WHO Guide to Good Prescribing Practical Manual A Prescription should include:

- Name, address, telephone of prescriber
- Date
- Name of the drug, strength
- Dosage form
- Name, address, age of patient
- Signature or prescriber

If there is any missing of above contents in any prescription consider as incomplete prescription.[3]

11. Dispensing Error

The failure to dispense a medication upon physician order (omission error) or within a specified period of time from receipt of the medication order or reorder (time error) dispensing the incorrect drug, dose, dosage form; failure to dispense correct amount of medication; inappropriate, incorrect, or inadequate labelling of medication; incorrect or inappropriate preparation, packaging, or storage of medication prior to dispensing; dispensing of expired, improperly stored, or physically or chemically compromised medications.[3]

12. Wrong drug:

A medication that is different from what the prescriber wrote on the prescription order or, for refill prescriptions, what is printed on the prescription label.

13. Wrong strength:

A dosage unit containing an amount of medication that is different from what the prescriber specified is dispensed without an adjustment to the dosing instructions to the patient.

14. Wrong dosage form (correct drug):

The form of the medication used to fill the prescription is different from what the prescriber wrote on the prescription order.

15. Wrong quantity*:*

The number of dosage units or the volume of a product was different from what the prescriber ordered. Unless

the observer could see a difference in the number of solid oral dosage forms without counting on a tray, we assumed that the correct quantity was used. Liquid measures were included if it was possible to observe the volume dispensed. If the quantity or volume of liquid could not be determined, the prescription was classified as "no error" if there were not errors in any other categories.

16. Wrong label instructions:

The directions on the prescription label deviated in one or more ways from what was prescribed, except for changes made based on good pharmaceutical practice.

17. Deteriorated drug:

A medication that had passed its expiration date was used to fill a prescription or a prescription was filled with a medication that was stored in a location not in accordance with the manufacturer's recommendations.

AIM, OBJECTIVE

To evaluate the prescribing and dispensing practice used in outpatients in a Medical college hospital.

METHODOLOGY

1. Study design
   It is a Prospective Survey/Observational Study
2. Study site
   The study is to be conducted in the patient counselling department in [Maharana Bhupal Government Hospital, Udaipur, Rajasthan having multispecialty facilities.
3. Study period
   The study is to be conducted for six months.
4. Source of data
   The data would be collected from various sources such as patient prescription and dispensing drugs from the pharmacy.
5. Study procedure
   A prospective observational study would be performed in an 800 bedded government medical college hospital to evaluate the drug prescription and drug dispensing practice used in outpatient. The concept of this practice is adopted from the discrepancy between the written instruction found on prescription and the accomplishment of this instruction by the pharmacy when drug is dispensed to the outpatient. Data collection is performed only the patient who participate in patient counselling. Patient counselling is performed during the day in the patient counselling department. Data is collected from all patients including paediatric, geriatric, and all types of population and also from various departments like (General Medicine, Psychiatry, Cardiology, Gynaecology, Orthopaedic, Urology, Endocrinology, Nephrology, Paediatric, Ophthalmology, Neonatology, Dentistry, Rheumatology Otolaryngology, Pulmonology, Gastroenterology, Neurology, Dermatology, and oncology).

The study would be limited to pharmacy dispensing activities between 10AM to 5PM when the majority of medication are dispensed.

Here Prescribing and dispensing errors would be classified into various types: Prescribing errors, classified into omission error and decision error. Dispensing errors, classified in to drug/content error and labelling error.

The following would be included in the study: All prescriptions to be collected which contain two or more than two medication. All types of errors would be included both harm and harmless. Data would be collected from outpatients those who participate in the patient counselling and willing to participate in the study.

The following would be excluded from the study: the patients who admitted in hospital (in patients) and also the patients who are not interested in patient counselling. OTC medication is not included.

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