

IDENTIFICATION OF TRANSCRIBING ERRORS IN PRESCRIPTIONS FOR TYPE 2 DIABETES MELLITUS PATIENTS AT CLINIC X, JEMBER REGENCY

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ABSTRACT

Clinical Pharmacy Services play an important role in health services in hospitals. Pharmaceutical service standards are direct and responsible services to patients related to pharmaceutical preparations with the aim of achieving definite results to improve the quality of life of patients. Medication error (ME) is an incident that causes or has an impact on inappropriate drug services or endangers patients when the drug is under the control of health workers or patients. Transcribing Error (TE) is an error in reading a prescription before entering the dispensing stage. TE includes changes to the drug name, drug formulation, route, dose, dosage regimen to prescription orders. According to the East Java Health Service in 2021, Diabetes Mellitus (DM) sufferers in East Java were 2.6 of the population aged 15 years and over. This study aims to Identifying transcription errors in prescriptions for type 2 DM patients at clinic x, Jember district. This research uses research descriptive using observation method The data source taken from this study is data from out patient prescriptions for type 2 Diabetes Mellitus for the period January - December 2022-2024 at clinic x Jember district. The population of this study was 37 medical prescriptions for outpatients with type 2 DM for the period January - December 2022-2024 at clinic x Jember district. The sample in this study was prescription data for patients diagnosed with type 2 DM who met the inclusion and exclusion criteria with a total of 37 samples by total sampling. The results of this study were obtained. Data from the identification of transcription errors still contained errors. From the total sample taken, 37 prescriptions, the results of the identification of transcription errors still contained errors



including no medical record number (89.2%) no patient age (45.9%) no dosage form (43.2%).

Keywords: *Medication error, transcribing error, DM type 2*

INTRODUCTION

A prescription is a written request from a doctor, dentist or veterinarian who is licensed under applicable laws to a pharmacist managing a pharmacy to provide and deliver medicine to a patient. A complete prescription must include the date and place of the prescription, the written instructions for use of the medicine, the initials/signature of the doctor who wrote the prescription, a sign opening the prescription with R/ and the name of the medicine, the amount and instructions for use. (Ministry of Health Regulation, 2017).

Pharmaceutical services are drug services and clinical pharmacy services in order to increase therapeutic effects and minimize the risk of errors in treatment. One of the pharmaceutical services carried out in pharmacies is prescription review. ME is an incident that causes or has an impact on inappropriate drug services or endangers patients when the drug is under the control of health workers or patients. (Timbongol et al., 2016). Transcription sheet is an identical copy of the doctor's order in the form of an electronic sheet as an aid to the pharmacist. Errors in reading the prescription before entering the dispensing stage are TE. TE includes changes in the drug name, drug formulation, route, dose, dose regimen to the prescription order (Putri et al., 2023).

Percentage of medication error incidents in hospitals in India in 2020 with 410 medication errors out of 6,705 prescriptions examined. In the TE phase, the prevalence was 44.1%. (Zirpe et al., 2020), while medication errors in the transcribing phase in Indonesia that occurred in hospitals in 2020 were 29.3% (Tanty et al., 2022). According to several studies, research conducted by Astriani Maulida and Wempi Eka Rusmana at RSI Assyfa Sukabumi in the 2021 period showed that medication errors in the transcribing phase, the results of the study obtained unclear dosage forms 96.77%, incomplete instructions for use 4.58%, incomplete patient age 91.64%, no request date 49.87%, no patient name 7.55%, no patient medical record number 100%, unclear drug name 0.27%, and unclear drug dosage



3.77%.(Maulida et al, 2021)whereasAccording to a study conducted by Rumi et al. in one of the Outpatient Pharmacy Installations of a hospital in Palu city, the results of the incorrect transcribing phase showed that patient status was missing 81.65%, patient age was missing 72.88%, medical record number was unclear 59.32%, and dosage form was unclear 53.38%.(Rumi, 2020).

Diabetes Mellitus (DM) is one of the dangerous diseases known by the Indonesian people as diabetes. Diabetes is a metabolic disorder characterized by hyperglycemia caused by impaired insulin secretion, insulin action or both. Diabetes mellitus is a chronic degenerative disease that if not treated properly, can eventually cause various complications. Patients with this disease tend to receive polypharmacy aimed at treating their diabetes, complications that arise or for concomitant diseases that may exist(Saibi et al., 2018).

There are four types of classification of Diabetes Mellitus according to(ADA.2023)among others :

- 1) Type 1 diabetes (due to autoimmune destruction of β cells, can cause absolute insulin deficiency including latent autoimmune diabetes in adulthood)
- 2) Type 2 diabetes (due to progressive loss of β -cell insulin secretion and often due to insulin resistance)
- 3) Diabetes Mellitus caused by other causes, such as monogenic diabetes syndromes (such as neonatal diabetes and diabetes of the young), diseases of the exocrine pancreas (such as cystic fibrosis and pancreatitis), and drug or chemical-induced diabetes (such as the use of glucocorticoids, in the treatment of HIV/AIDS, or after organ transplantation).
- 4) Gestational Diabetes Mellitus (GDM; diabetes diagnosed in the second or third trimester of pregnancy that did not clearly indicate diabetes before pregnancy) (Bingham, 2024).

Pharmacy plays an important role in preventing ME. Pharmacy technicians can help reduce the incidence of ME by performing tasks such as screening prescriptions, confirming with doctors, and providing complete drug information to patients.(Kumalasari et al., 2021). The results of a preliminary study conducted at



Clinic X, Jember Regency in the outpatient installation in the period January - December 2022-2024 obtained a population of 37 type 2 Diabetes Mellitus patients.

Based on the description above, the researcher is interested in conducting research related to prescription transcription errors in type 2 diabetes mellitus patients at Clinic X, Jember Regency. This research was conducted to determine the transcription errors in prescriptions for type 2 diabetes mellitus patients at one of the clinics in Jember Regency. The reasons why the researcher chose the title are first, the results of the preliminary study at Clinic X until now there has been no research on medication errors, especially in the transcribing phase at Clinic X, Jember Regency, second because the researcher chose the theme of medication errors in the transcribing phase where in that phase it is easy to observe in pharmaceutical institutions because the pharmaceutical installation manages pharmaceutical preparations and medical devices and serves clinical pharmacy services such as prescription services or drug requests.

MATERIALS AND METHODS

This research is a descriptive research type using observation method with checklist measurement tool. This research will be conducted in September 2024 at clinic x Jember Regency. The population of this study is prescription data of outpatients with type 2 diabetes mellitus for the period January - December 2022-2024 at clinic x Jember Regency totaling 37 prescriptions using total sampling. Patient prescription data is then observed with 9 parameters, namely patient name, medical record number, patient age, drug name, dosage, duration of administration, route of administration, dosage form, prescription request date. Data is processed using Microsoft Excel and SPSS data is analyzed univariately to see the frequency and percentage of transcribing errors in prescriptions for type 2 diabetes mellitus patients at clinic x Jember Regency.

RESULTS AND DISCUSSION

GENERAL DATA

The purpose of this research is identifying medication errors in the transcribing error phase in prescriptions for type 2 diabetes mellitus patients at clinic x Jember district. The sampling technique used in this study was

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the Total sampling technique. After the Total sampling technique was carried out, the results of the sample size were 37 recipes. This study has obtained ethical approval with the number 573 / KEPK / UDS / IX / 2024. The following are the research results based on 9 parameters presented in the table below

Sample 1 Based on the results of research on the completeness of prescriptions for type 2 DM patients as follows:

Based on table 1 above, from the total samples taken, 37 recipes were taken using the total sampling technique. The results of the transcription error identification still contain errors including no medical record number (89.2%), no patient age (45.9%), no dosage form (43.2%). While the parameters of patient name, drug name, dosage, duration of administration, route of administration, date of prescription request have been complete, there are no errors.

Based on the Regulation of the Minister of Health of the Republic of Indonesia No. 73 of 2016, a prescription is the most important instrument before a patient receives medication. Pharmacists play an important role in the management and clinical pharmacy aspects of pharmacies, therefore pharmacists are required to carry out the prescription screening process in the prescription service flow. Prescription screening or prescription review is a pharmacist's activity in reviewing a prescription which includes administrative review, pharmaceutical suitability, and clinical considerations.

Completeness of prescription based on patient name

Based on the research results, it was found that there were patient names on all 37 prescriptions (100%) for DM patients.type 2.

Patient data or identity is a crucial component of a doctor's prescription because it is a reference for pharmacists to ensure that the medicine will be received by the patient concerned. Patient name, age, gender, weight, address, and telephone number. The identity filling format is usually printed on the prescription form, so the doctor just has to fill it in. (Chanafi, 2022)

Based on the research results of all DM patient prescriptionsType 2 contains the patient's name according to the researcher, this is because the



patient's name is very important to ensure that the prescription made is given to the patient based on the prescription name, in addition, at the research site, the pharmacist will call the name of the patient who will receive the medicine before giving the medicine. In this study Researchers concluded that all DM patient prescriptiontype 2 existsThe patient's name is not only because the prescription must always have a name but also because the name is used by the pharmacist to provide the medicine, this is also because when giving a prescription to the pharmacist the patient's medical records are placed in a different place so that the prescription and medical records are not in 1 place.

Completeness of the recipebased on medical record number

Based on the research results, it was found that as many as 33 prescriptions (89.2%) did not have a medical record number on the DM patient prescriptions.type 2, while as many as 4 prescriptions (10.8%) contained medical record numbers on the DM patient prescriptiontype 2.

The numbering system in medical record services, namely the procedure for writing the number given to patients who are being treated, as part of the patient's personal identity. The medical record number is useful as an indication of the owner of the medical record file, as a guideline in the procedure for storing medical record files, and as a guide in searching for medical record files that have been stored in the filing room. (Kristijono, 2022)

Based on the research results, it was found that 33 prescriptions for type 2 DM patients did not have medical record numbers. According to researchers, medical records are very important to avoid name similarities, but in this study, 33 prescriptions were found to have no medical record numbers. This is because medical record numbers are rarely used to identify patients who will receive medication. Researchers concluded that this was due to the function of medical records when giving medication to patients.

Completeness of the recipebased on patient age

Based on the research results, it was found that 20 prescriptions (54.1%) contained the patient's age in the DM patient prescriptions.type 2, while as



many as 17 prescriptions (45.9%) did not include the patient's age on the DM patient prescriptiontype 2.

Writing age in a prescription is also important because it is related to determining the dosage of the drug, age in writing a prescription is very necessary because it is necessary to know whether the dose given is appropriate or not. In determining the dosage, experts have created a special formula based on a person's weight, for that reason weight is very necessary to be included in writing the prescription.(Purwaningsih, 2020)

Based on the research results, it was found that 17 prescriptions (45.9%) did not include the patient's age on the prescription for Type 2 DM patients. According to the researcher, this was because at the research site, the respondent's age was not used as a reference for administering medication. In addition, age was also not used in adult patients except for child patients. In addition, at the research site, age was also not used to identify patients when receiving medication. Therefore, the researcher concluded that the problem of completeness of age data on prescriptions was caused by the age not being used when identifying patients when taking medication. However, the researcher also concluded that this was because prescriptions were still found.As many as 20 prescriptions (54.1%) contained the patient's age on the prescriptions for DM patientstype 2 then this can also be caused by human error when writing the prescription.

Completeness of prescription based on drug name

Based on the research results, it was found that there were drug names in all 37 prescriptions (100%) for DM patients.type 2.

Writing the name of the drug is very important in the prescription so that during the service process there are no errors in administering the drug, because many of the drugs written are almost the same or have the same denominator. For that, doctors must write the name of the drug clearly so as to avoid errors in administering the drug.(Yusuf A, 2020).

Based on the research results, all DM patient prescriptions were obtainedtype 2There is a drug name, according to researchers, the drug name is very important in determining the drug that should be given to the patient,



but in this study, all prescriptions are complete with the name of the drug that will be given to the patient, researchers concluded that this is because the drug name is very important in determining the drug that the doctor expects for the right patient to avoid drug errors.

Completeness of prescription based on dosage given

Based on the research results, it was found that there was a dose given in all 37 prescriptions (100%) of DM patients.type 2.

Drug dosage is a certain amount or measure of a drug that has a certain effect on a disease. The administration of drug dosage must be precise because if the dose is too low, the therapeutic effect will not be achieved. Conversely, if it is excessive, it can cause toxic effects or poisoning or even death. The purpose of calculating drug dosage is so that patients get the drug according to what is needed by the patient, either based on their own wishes or based on the dose determined by the prescribing doctor if the drug must be prescribed by a doctor(Riskika, 2020).

Based on the research results, it was found that all prescriptions for type 2 DM patients contained a dosage, according to the researcher, the dosage is very important in providing an explanation of the use of drugs, at the research site when the pharmacist gave the drug to the patient, he would explain the dosage of the drug so that because the dosage is an important thing in giving drugs to patients, in this study no prescriptions were found that did not contain a dosage of the drug.

Completeness of prescription based on duration of administration

Based on the research results, it was found that there was a duration of administration in all 37 prescriptions (100%) of DM patients.type 2.

It is important to know the interval between taking the medication because it is related to the half-life of the medication or how long the medication lasts in the body. Medications that have a short half-life tend to work faster, but their effects also wear off faster. These medications usually need to be taken several times a day for their effects to continue to work. While medications with a longer half-life generally take longer to start working, but



their effects can last longer. These medications usually only need to be taken once a day or even less often (Agustin,2023).

Based on the research results, it was found that all prescriptions for type 2 DM patients contained a duration of administration, according to the researcher, the writing of a complete duration of administration on prescriptions for type 2 DM patients is because the duration of administration in type 2 DM patients is very important in treatment so that doctors will try to provide clear data on the duration of administration, whether taken at night, morning or morning, afternoon and evening. So the researcher concluded that the duration of drug administration is on every prescription for type 2 DM patients, not only because it is mandatory but also because of the importance of the duration of drug administration for patients (Awaliya et al., 2024).

Completeness of prescription based on route of administration

Based on the research results, it was found that there was a route of administration in all 37 prescriptions (100%) for DM patients.type 2.

Writing the route of drug administration is very important in the prescription so that during the service process there is no mistake in administering the drug, because many drug preparations have several forms of administration routes. For this reason, doctors must write the name of the drug clearly so as to avoid errors in the route of drug administration.(Yusuf A, 2020).

Based on the research results, it was found that all prescriptions for type 2 DM patients contained a route of administration, according to the writing of the route of administration on all prescriptions for type 2 DM patients because all the drugs taken home by patients were oral routes of administration, so the writing of the drugs on all prescriptions was the same so that it would become a habit in writing drugs so that according to researchers this caused the writing of the route of administration of drugs at the research site to be complete on every prescription for type 2 DM patients.

Completeness of prescription based on dosage form



Based on the research results, it was found that 21 prescriptions (56.8%) contained dosage forms in the prescriptions of DM patients.type 2, while as many as 16 prescriptions (43.2%) did not contain the dosage form in the DM patient's prescriptiontype 2.

Based on the research results, it was found that as many as 16 prescriptions (43.2%) did not contain a dosage form in the prescriptions for DM patients.type 2. According to researchers, this is because at the research site, the drug was used for patientsDMtype 2 is all oral swallow drugs so that the writing of the preparation on some prescriptions is empty. The researcher concluded that because the dosage form at the research site of Type 2 DM drugs was only oral swallow drugs, the pharmacist already understood the name of the drug without the drug preparation, so it is possible that because of the many patients or human error, the writing of the preparation on the drug prescription was incomplete on all prescriptions.

Completeness of prescription based on prescription request date

Based on the research results, it was found that there was a prescription request date for all 37 prescriptions (100%) of DM patients.type 2.

One of the skills that a doctor must have is prescribing medication. Writing a doctor's prescription aims to facilitate health services and reduce the risk of errors in administering medication.A prescription is a legal document containing a written request from a doctor to a pharmacist to prepare and provide medication to a patient. This prescription is made according to the patient's needs after the doctor has performed a medical examination and determined a diagnosis. Legally, onlygeneral practitioners, specialist doctors, anddentistauthorized to write prescriptions(Agustin S, 2022); (Mayasari, 2023).

Based on the research results, all prescriptions for type 2 DM patients have a prescription request date. According to the researcher, the complete date of the drug request on the prescription for type 2 DM patients is because the date is an important thing in providing drugs at the pharmacy. In addition, the prescription request date is located above the prescription section so that the first thing written is the prescription request date. So the researcher



concluded that in addition to the obligation to write the prescription request date and the importance of the prescription request date, it is also caused by the factor of writing the prescription request date above the prescription.

CONCLUSION AND SUGGESTIONS

CONCLUSION

From the description above it can be concluded that:

1. Based on the research results, 37 prescriptions (100%) contained the patient's name.
2. Based on the research results, it was found that 33 prescriptions (89.2%) did not have a medical record number. Meanwhile, 4 prescriptions (10.8%) had a medical record number on the DM patient's prescription.type 2.
3. Based on the research results, it was found that as many as 17 prescriptions (45.9%) did not include the patient's age in the prescriptions for type 2 DM patients. Meanwhile, as many as 17 prescriptions (45.9%) did not include the patient's age in the prescriptions for DM patients.type 2.
4. Based on the research results, 37 prescriptions (100%) contained drug names.
5. Based on the research results, 37 prescriptions (100%) contained the prescribed dosage.
6. Based on the research results, 37 prescriptions (100%) were found to have a duration of administration.
7. Based on the research results, 37 prescriptions (100%) were found to have a route of administration.
8. Based on the research results, it was found that as many as 16 prescriptions (43.2%) did not contain a dosage form in the prescriptions of type 2 DM patients. Meanwhile, as many as 16 prescriptions (43.2%) did not contain a dosage form in the prescriptions of type 2 DM patients.type 2.



9. Based on the research results, 37 prescriptions (100%) were found to contain the prescription request date.

SUGGESTION

1. Research site

The results of the study can be an evaluation for the Muna Parahita Clinic clinic regarding the completeness of the prescription. In addition, it is also to maintain the quality or improve the quality of service of the Muna Parahita Clinic, Jember Regency.

2. Educational institutions

The research results can be additional literature to be used as a reference for further researchers.

3. For further researchers

The results of the study can be used as a reference, so it is hoped that more critical research can be carried out with more samples regarding the completeness of reading and writing patient prescriptions.

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Based on the results of research on the completeness of prescriptions for type 2 DM patients as follows:

Table 1. Completeness of the recipe type 2 DM patients

	Classification	Total %
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Completeness of the recipe	There is (%)	There isn't any (%)	
Patient Name	37 (100 %)	0 (0%)	37 (100 %)
RM Number	4 (10.8 %)	33 (89.2 %)	37 (100 %)
Patient Age	20 (54.1 %)	17 (45.9 %)	37 (100 %)
Drug Name	37 (100 %)	0 (0%)	37 (100 %)
Dosage	37 (100 %)	0 (0%)	37 (100 %)
Duration of Administration	37 (100 %)	0 (0%)	37 (100 %)
Route of Administration	37 (100 %)	0 (0%)	37 (100 %)
Dosage Form	21 (56.8%)	16 (43.2%)	37 (100 %)
Prescription Request Date	37 (100 %)	0 (0%)	37 (100 %)





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