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Research Article

Relationship Between Omission, Commission Errors and Number of Drugs Prescribed

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Abstract

Background and Aims: Medication prescribing error is common, the consequences of such errors are more harmful and frequent among patients in the hospital, the specific aim of the study was identified types of prescribing errors, identify the most common drugs prescribed in the hospitals and to see if there is correlation between the numbers of drugs prescribed and the number errors (omissions and commissions).

Method: Prospective cross-sectional study was performed in the security force clinics in Riyadh, the 300 prescriptions were collected from the central pharmacy with convenience sampling procedure to select the prescriptions, the study used a descriptive and inferential analysis to answer the research questions.

Results: A total of 759 drugs were prescribed, in which 4118 errors were discovered in the prescriptions (2408 omissions errors,1710 commissions errors), the most common omissions errors in the prescription under study was omit patient gender, in which nearly all the prescription didn't determine the gender of patients, following by omit name of department 298 (99.3%), the most common commission errors was illegible writing 650 (86%) in the prescriptions under study, following by omit strength of drugs 464 (61.4%), omit route of drugs administrations 417 (55.2%), the most common drugs prescribed through the study periods were analgesics 203 (26.9%), and the second highest category of drugs were antibiotics (antibacterial), 136 (18%), the most common drugs subjected to prescribing errors were analgesic 27.10%, antibiotics 15.20%, and bronchodilators 10.70%, there is a strong positive correlation between the number of drugs prescribed and the number of commission errors.

Conclusion: Application of modification prescriptions forms, structured prescribing training program, strict legislation measures relating to drugs prescriptions and development of system by applying CPOE and CDSS are among the necessary intervention(s) that may reduce the prescription errors, increase the patient safety and protect them from medication errors.

Keywords: *Omission, Commission; Errors; Omitted Dose; Prevention Prescription Errors; Computerized Physician Order Entry*

Introduction

Prescriptions are the primary means for communicating medication instructions between prescribers (healthcare professionals) and pharmacists, therefore; the prescription paper should be complete, legible, precise and unambiguous in its interpretation to minimize drug errors [1].

The global number of prescriptions written increases annually [2], as well as the number of errors, in which there was a large percentage of outpatient paper prescriptions contain one or more errors, resulting in millions of prescriptions with the potential harm to patients [2,3].

Errors occur in different stages, so every stage of the medication use process (prescription, dispensation, administration, monitoring of a drug) is vulnerable to errors [4].

Errors are an integral part of human life, therefore the classification of the type of error that occurs, based on an assessment of the actions that led to that error,5an unintentional action may lead to an error due to a failure of attention (slip) or memory (lapse), and an intentional action may lead to an error due to a failure or lack of expertise (mistake) or a deliberate rule break (violation) [6,7].

Prescribing errors are worldwide highly prevalent problem in the health care system1, it is often associated with a health professional's inexperience and lack of knowledge regarding the medication in general(dose, frequency, strength, interaction, etc) and other factors such as tiredness and lapse of memory. In addition to prescription drugs, consumers self-prescribe and take drugs they buy over the counter. Sometimes these drugs can cause an adverse event particularly when taken with other drugs [8].

Dosing errors are the most common type of prescribing error, it is widely recognizing in the prescription errors [9].

It is difficult to statistic the errors accurately, many of previous studies use the incident reporting to identify the rate of errors1 but the accurate methods for identify and assessing the types and the rates of prescribing errors are different, but according to previous studies, retrospective review of prescriptions by pharmacists is noted to be the most effective method [9,10].

Material and Method

Research design

This research is explorative the study conducted in security force hospital in Riyadh, to assess the quality of the medications prescribing in the security force clinics.

Population and Sampling

Populations

The population of this study is all out-patient's prescriptions arrive to central pharmacy of security force hospital in Riyadh city.

Sampling procedure

The researcher will use the convenience sample method.

Research Instruments

The suitable tool for collecting information of this study is a prospective reviewing which is selected by the researcher. It consists of 2 parts or sections:

- **Section 1:** Evaluate the errors of omissions (Quality of prescription form) by researcher.
- **Section 2:** Evaluate the errors of commissions (Errors of drugs writing). By specialist pharmacy.

Instrument validity and reliability

To assure the validity, the following procedures were conducted, first review was made of the relevant literature. and the previous instrument were examined to develop drafts, secondly the method was reviewing by professors specialized in same field.

Reliability

Collection of prescriptions

Achievement of the research involved a collection of 300 prescriptions form during the work hours from central pharmacy, the prescription will include all departments in the hospital.

The study was carried out by visiting the hospital and collecting different prescription from 13-9-2015 to 13-12-2015.

All information related to patients and hospitals were kept confidential, also all prescriptions were included without exclusion criteria, being these prescriptions obtained from outpatient.

Statistical treatment

The prescriptions will be evaluated into two steps, then the data was also analysed using of SPSS version 20 program descriptive and inferential analysis. Each item was scored one or zero with a total score of 16 for evaluate prescription form and 8 for evaluate the drugs prescription errors. If the omission or commission item was present and clear, it was given a score of zero. If it was absent or not readable, a score of one was given.

Literature Review

The prescribing of medicines is an essential skill required by doctors, for every prescribing decision the potential for benefit needs to be balanced against the risk of harm. The prescriber must use clinical knowledge and improvisational skills to apply a body of rules (e.g. contra-indications, risk factors) to a specific prescribing decision.

The challenge of prescribing has increased as new drugs are developed, and older and more severely ill patients are treated [2].

Medication prescribing errors are common, so many of previous studies reported this errors [1,7,12,15], but it is particularly common in hospitalized patients specially among those who require multiple forms of pharmacological therapies, elderly, critically ill and paediatric patients, 16 so many patients appear to be harmed by errors every year 2, the adverse consequences of medication errors can increase the treatment cost and prolong hospital stay, result in hazards for patients and their families [5,8,17].

Unfortunately, even though a clinic or hospital may have policies for reporting incidents, such as medication errors, the actual reporting of these incidents is often sporadic and different among the different hospitals and different countries [8].

Every stage of the medication use process (storage, prescription, transcription, preparation, dispensation, and administration of a drug) is vulnerable to errors but errors are most frequent and common during prescribing and administration [4].

Prevalence rate and frequency of medication prescribing errors

The Rates of prescribing errors in the competency assessment are higher than published results shown in practice (23.1%) in study conducted in Royal Manchester Children's Hospital (RMCH) in 2010 - 2011 in United Kingdom [9].

Study was carried out in the paediatric wards of Dessie Referral Hospital from February 17 to March 17, 2012 show that Out of the 384 Medication orders identified during the study, a total of 223 prescribing errors were identified. this corresponds to an overall medication prescribing error rate of 58.07% [4].

Prescribing errors were also common in mental health settings and a significant number of these errors may result in a serious outcome,18 also reported as the most common error in ICUs, 78% of all serious errors in ICUs were due to medication errors. the error breakdown is as follows: administration errors 43.1%, preparation errors 24.1% and transcription errors 2.5%. Administration techniques and monitoring were determined to be the most common errors [14].

The study conducted in Imam Khomeini Hospital in Iran in 2009 among nurses show that the Medication errors had been made by 64.55% of the nurses. In addition, 31.37% of the participants reported medication errors on the verge of occurrence [5].

A study was conducted in community pharmacy in Madrid in Spain over a 13-month period to review the three types of written reports of incidents: prescribing errors, dispensing near misses, and dispensing errors. data for medication errors were collected through the internal records of the pharmacy, the study result in that the error rate of 5.0% (95% confidence interval 4.8 - 5.2%) [11].

Retrospective study in England review a medication items prescribed over a 12-month period to a 2% sample of patients from 15 general practices; The study involved examination of 6,048 unique prescription items for 1,777 patients. The study shows that the Prescribing or monitoring errors were detected for one in eight patients, involving around one in 20 of all prescription items [7].

In Nigeria, patients who filled or refilled their antiretroviral medications between February 2009 and March 2011 were screened for medication errors using study-specific pharmaceutical care daily worksheet (PCDW).the study reported that the incidence rate of medication errors was 40.5 per 100 person-years [15].

Another study was conducted in the haematology ward of a teaching hospital in Malaysia. A total of 1118 opportunities for errors were observed and 127 administrations had errors. This gave an error rate of 11.4%. If incorrect time errors were excluded, the error rate reduced to 8.7% [19].

Cross-sectional descriptive study was conducted in South Korea from December 2009 to January 2010 after approval by a university Institutional Review Board, using convenient snowballed sample of 220 nurses from seven hospitals, the study result in that nearly over half (63.6%) of the participants had been involved in medication errors once or more in the past month [20].

Prospective type of study was carried out at in-patient Department of medicine at H.E.E.S Basaveshwar teaching and general hospital during period from September 2010 to March 2011 (Seven Months), inpatients records of patients from six units of medicine department were reviewed during their stay in hospital, the medication errors were documented and evaluated. A total of 500 cases of the patients were selected, among them 77.4% were male and 22.6% were females. 38.5% of them were in the age group of 40 to 60 years. the study show that 167 medication errors were detected in 127 patients. Maximum medication errors (31) were detected in the month of December 2010, the overall incidence of medication error was found to be 33.4%. A total of 167 medication errors were observed, among them 30.5% were errors in medication ordering and transcription, 23.3% were errors in medication dispensing and 46.1% were nursing errors in medication administration [17].

Types of medication errors

Cross-sectional study was performed at the Family Medicine Department, Suez Canal University (SCU) in Ismailia, Egypt result in that nearly all prescriptions had one or more omission errors, errors of commission are not prevalent except wrong strength and dose of medicines that were detected in 10% of prescriptions, the percentage of total prescriptions for drugs prescribed by generic name was 1.2% while that of encounters with prescription of antibiotics and injections were 52.8 and 17%, respectively. Only, the consultation time and place of treatment were found to have significant effects on the prescriptions' quality [1]. superscription, inscription, and subscription, the study result in that the most common type of superscription error of omission was found to be age (72.44%) and gender (900 handwritten outpatient prescriptions from four different Hospitals in Oman were collected between April 2009 to July 2010. The type of error of omissions considered in this analysis includes all three important parts of prescriptions, i.e. 32.66%). More than 46% of prescriptions were incomplete on direction for use, more than 22% of prescriptions were not having the information on dose, and more than 23% of prescriptions omitted the dosage forms of prescribed drugs, the date of dispensing of medications was omitted in all the prescriptions and more than 44% of prescriptions were missing the signature of dispenser. It was also found that more than 4% of prescriptions omitted the prescriber's signature and more than 18% of prescriptions omitted the date of prescription [21].

Incomplete prescriptions and dosing errors were the two most common types of prescribing errors in the pediatric wards of Dessie Referral Hospital from February 17 to March 17, 2012 [4].

Incorrect calculation of dose also the most common type of prescribing error reflects results seen in actual practice in study conducted in Royal Manchester Children's Hospital (RMCH) in 2010-2011in United Kingdom [9].

Wrong dosage and infusion rate also has been reported the most common errors in study was conducted in 2009. In which 237 nurses were randomly selected from nurses working in Imam Khomeini Hospital (Tehran, Iran) [5].

The study conducted in a 10-bed adult medical ICU at a large teaching hospital located in Shiraz, Iran. Two hundred and fourteen medication errors were identified in 307 doses, this is equivalent to 69.7% of total error. The error breakdown is as follows: administration errors 43.1%, preparation errors 24.1% and transcription errors 2.5%. Administration techniques and monitoring were determined to be the most common errors. Nearly, 89.4% of errors did not result in imminent danger to the patients. In the ICU under this study, the most common MEs were administration and prescription errors. To improve the quality of care in the ICU and reduce MEs, efforts should be directed to correct the wrong administration technique and inappropriate monitoring [14,18].

Prescribing errors, dispensing near misses, and dispensing errors were the most common errors reported in a study conducted over a 13-month period in community pharmacy in Madrid in Spain. The data included three types of written reports of incidents; Data for medication errors were collected through the internal records of the pharmacy, the study result in that there were 2,117 medication errors consisting of 1,127 prescribing errors, 216 dispensing errors, and 774 dispensing near - misses [11].

In Nigeria, patients who filled or refilled their antiretroviral medications between February 2009 and March 2011 were screened for medication errors using study-specific pharmaceutical care daily worksheet (PCDW), the study result in that the major medications errors identified were 26.4% incorrect ART regimens prescribed; 19.8% potential drug-drug interaction or contraindication present; and 16.6% duration and/or frequency of medication inappropriate. Interventions provided included 67.1% cases of prescriber contacted to clarify/resolve errors and 14.7% cases of patient counselling and education; 97.4% of potential/actual medication error(s) were resolved [15].

Another study was conducted in the hematology ward of a teaching hospital in Malaysia, the study result in that the most common types of drug administration errors were incorrect time (25.2%), followed by incorrect technique of administration (16.3%) and unauthorized drug errors (14.1%). In terms of clinical significance, 10.4% of the administration errors were considered as potentially life-threatening [19].

Causes of medication prescribing errors

Causes were grouped according to reason's model of accident causation into active failures, error-provoking conditions and latent conditions. The active failure most frequently cited was a mistake due to inadequate knowledge of the drug or the patient. Skills-based slips and memory lapses were also common. Where error-provoking conditions were reported, there was at least one per error, these included lacks training or experience, fatigue, stress, high workload for the prescriber and inadequate communication between healthcare professionals. Latent conditions included reluctance to question senior colleagues and inadequate provision of training [12].

Slips in attention and lack of drug knowledge were not the single causative factor in any incident. Risk factors identified included individual, team, environment, and task factors. Junior doctors were affected by the prescribing habits of their seniors. Organizational factors identified included inadequate training/experience, absence of reference materials and absence of self-awareness of errors [7,23,24].

The majority of self-reported errors resulted from unintentional actions (24,21.6.1) Interruptions and pressure from other staff were commonly cited causes of errors [6].

Using abbreviations instead of full names of drugs and similar names of drugs were the most common causes. Therefore, the most important cause of medication errors was lack of pharmacological knowledge [5].

The consultation time and place of treatment were found to have significant effects on the prescriptions' quality [1].

The most common drugs and departments subjected to errors

Antibiotics were the most common classes of drugs subjected to prescribing error which represent (54.26%) as reported in study conducted in the pediatric wards of Dessie Referral Hospital from February 17 to March 17, 2012. Data on the prescribed drugs were collected from patient charts and prescription papers among all patients who were admitted during the study period [4].

The study conducted in a large teaching hospital located in Shiraz, Iran, the most common medication errors were administration and prescription errors in ICU [14].

Prospective type of study carried out at in-patient Department of medicine at Basaveshwar teaching and general hospital from September 2010 to March 2011, Inpatients records of patients from six units of medicine department were reviewed during their stay in hospital, detected medication errors were documented and evaluated. the study result in that the majority of medication errors were belonging to CNS drug class (19.7%). On evaluation of severity, majority of medication errors 89.8% were classified as category Error, No harm, followed by 7.7% were in category No Error and remaining 2.3% were in category Error, Harm. This study concluded that 33.4% medication errors were detected during study period and revealed that pharmacist can play a major role in preventing these errors by early detection [17].

Medication dosing errors occur in up to 17.8% of hospitalized children so the researcher studied patients aged ≤ 11 years who were treated by paramedics from eight Michigan EMS agencies in united states, from January 2004 through March 2006 in administering six EMS medications commonly given to children: albuterol, atropine, dextrose, diphenhydramine, epinephrine, and naloxone, there were 5,547 children aged ≤ 11 years who were treated during the study period, of whom Received November 4, 2010, from the Emergency department of different hospitals, these patients received a total of 360 medication administrations. Multiple drug administrations occurred in 73 cases. Medication dosing errors occurred in 125 of the 360 drug administrations (34.7%)Relative drug dosage errors (with 95% CI) were as follows: albuterol 23.3%, atropine 48.8%, diphenhydramine 53.8% and epinephrine 60.9% [25].

Results

Background characteristics

Three hundred prescribing forms were collected and investigated for the outcome variables of the present study, in which a total of 759 drugs were prescribed. The maximum drugs prescribed per prescription were 11 drugs and the minimum drug prescribed was one.

4118 errors in general were discovered in the prescriptions, 2408 omissions (The range was 12 maximum number of errors discovered per prescription, 2 minimum number of errors discovered per prescription), 1710 errors of commissions (The range was 41 maximum number of errors discovered per prescription, with no number of errors discovered per prescription).

It can be seen from table 1 that the drug with highest frequency of occurrence were Analgesics 203(26.9%), and the second highest category of drugs were antibiotics(antibacterial) 136(18%), Furthermore bronchodilators 80(10.6%), cardiovascular, hypertension 68(9%), gastrointestinal 57(7.5%), vitamins 55 (7.3%), antihistamine 39 (5.2%), anti-diabetic 26 (3.4%), skin drugs and corticosteroids 23 (3%), eye drugs 16 (2.1%), mouth wash 14 (1.9%), The CNS 11 (1.5%), hormones 9 (1.2%), muscle relax 8 (1.1%), normal saline 6 (.8%) psychological drugs 5 (.7%) were drugs with the lowest frequency.it also show in the following figure 1.

Groups of drugs	Frequency	Percent
Analgesic	203	26.9
Antibiotics. antivirus, antifungal(antibacterial)	136	18.0
Bronchodilators, nasal decongested	80	10.6
Cardiovascular(CVS), hypertension, anticoagulant, anti-cholesterol	68	9.0
Gastrointestinal drugs	57	7.5
Vitamins	55	7.3
Antihistamine	39	5.2
Anti-diabetics	26	3.4
Corticosteroids, skin drugs	23	3.0
Eye drugs (drops and gel)	16	2.1
Mouth wash	14	1.9
CNS	11	1.5
Hormones	9	1.2
Muscle relax	8	1.1
Normal saline	6	.8
Psychological drugs	5	.7
Total	756	100.0

Table 1: *The most common drugs prescribed in the study.*

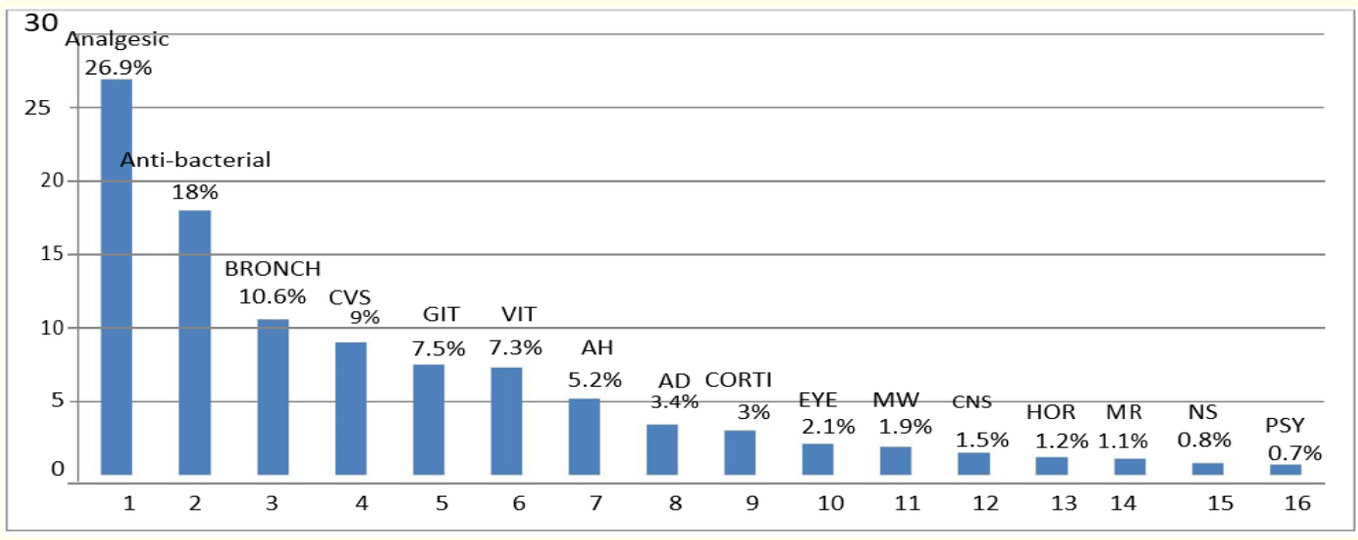

Figure 1

It can be seen that the most common drugs subjected to prescribing errors were analgesic 27.10%, antibiotics 15.20%, bronchodilators 10.70% and cardiovascular drugs 10.10%, the muscle relax drugs, normal saline solutions and psychological drugs .023% were the drugs with the lower frequency subjected to an error. Also show in the following figure 2.

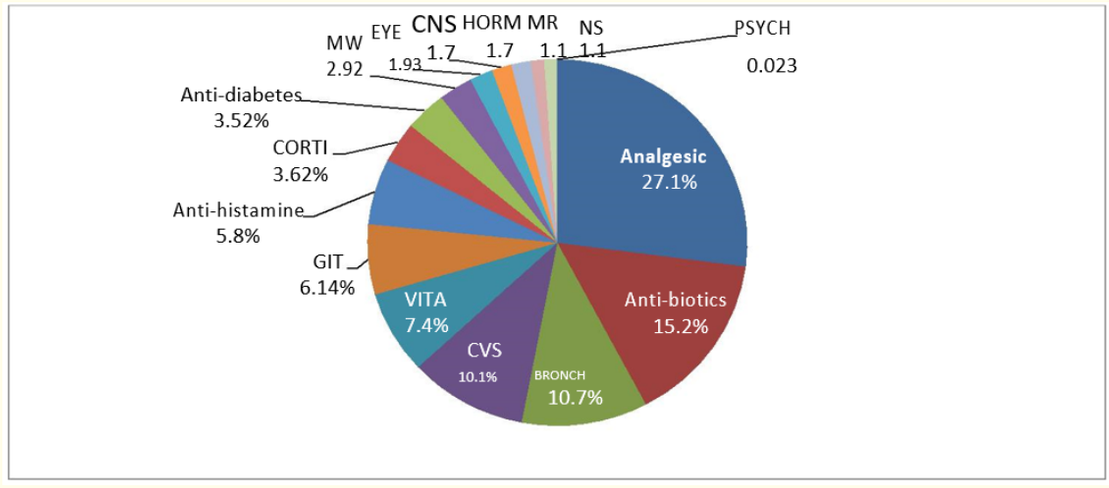

Figure 2

It can be seen from above figure that the most common commission errors were illegible writing 650 (86%) in the prescriptions under study, following by omitted of strength of drugs 464 (61.4%), absence route of drugs administrations 417 (55.2%), omitted of drugs dose 336 (44.4%). The least common errors of commissions were omitted drug duration 230 (30.4%) and drugs frequency 209 (27.6%). There were no any interactions between the drugs in the prescriptions under study, the frequency of commissions errors also shows in the following figure 3 and 4.

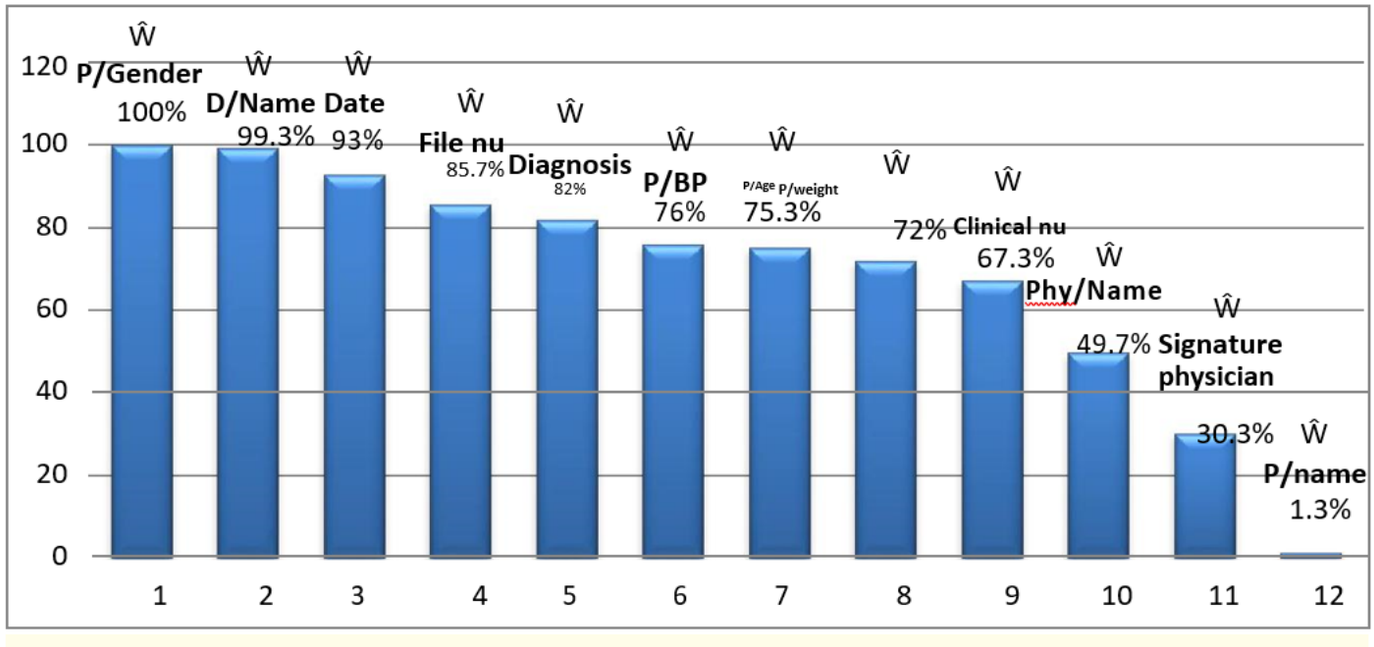

Figure 3

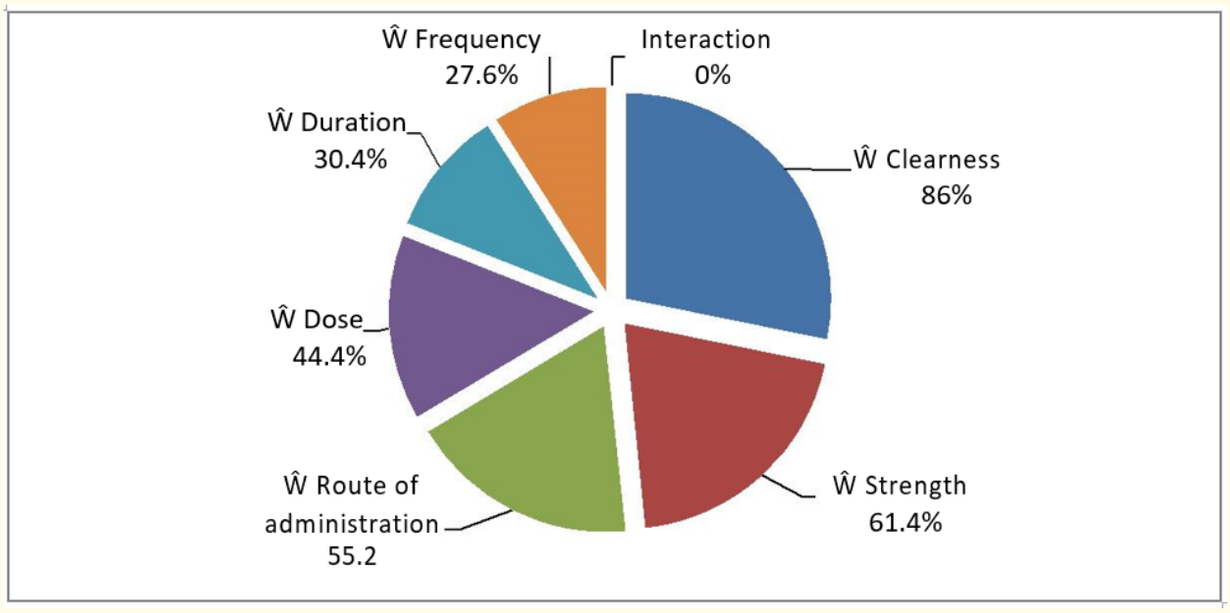

Figure 4

Correlation Analysis

Test of Correlations between the number of drugs prescribed and the number of omission and commission errors.

Analysis of Pearson was performed to determine the correlation, we can see from the table 2 that there is a strong positive correlation between the number of drugs prescribed and the number of commission errors.

Pearson test		Number of drugs prescribe	Number of commission errors
Number of drugs prescribe	Pearson Correlation	1	.709**
	Sig. (2-tailed)		.000
	N	300	300
Number of commission errors	Pearson Correlation	.706**	1
	Sig. (2-tailed)	.000	
	N	300	300

Table 2: ***. Correlation is significant at the 0.01 level (2-tailed).*

We can see from the table 3 that there is a weak negative correlation between the number of drugs prescribed and the number of omission errors.

Pearson test		Number of drugs prescribe	Number of omission errors
Number of drugs prescribe	Pearson Correlation	1	-.101*
	Sig. (2-tailed)		.081
	N	300	300
Number of omission errors	Pearson Correlation	-.101*	1
	Sig. (2-tailed)	081	
	N	300	300

Table 3: **. Correlation is significant at the 0.05 level (2-tailed).*

Discussion

Medication prescribing errors are common, so many of previous studies reported and prescribed these errors among different countries [4,5,7-9,12,14,15,17]. There were 4118 errors were discovered in the prescriptions under study, 2408 omissions and 1710 errors of commissions. Other Study was also reported high rate of errors carried out in the paediatric wards of Dessie Referral Hospital, a total of 223 prescribing errors were identified in 384 medication order [4], the study conducted at Basaveshwar teaching and general hospital also reported 167 medication errors were detected in 127 patients [17].

The most common omissions errors in the prescription under study was omit of patient gender, in which nearly all the prescription didn't determine the gender of patients, following by omitted name of department 298 (99.3%), date of prescription 279 (93%), following by omitted of medication file number 257 (85.7), Diagnosis of patient 246 (82%), Patient blood pressure 228 (76%), Patient age 226 (75%), Patient body weight 216 (72%), Clinical number 202 (67.3%), these errors also reported in other study [21] whereas the lowest errors of omissions were omitted of physician signature in 91 (30.3%) and patient name 4 (1.3%).

In general, the prescriber's signature is imperative, without it the drug cannot be dispensed to the patient but in the security force clinics, the pharmacists can dispense the drugs without signature of physician. The rate of occurrence of this error in the hospital was higher than reported in the other studies 4.6% and 5% (18,21), the date of prescription 279 (93%) also high in compare to the other study which reported (18.18%). The date of prescription is also important, in the emergency case or an adverse reaction, the date could indicate when the patient started use the drugs to determine the diagnosis and do firs aid [21].

In this study all prescriptions forms without gender information in contract to other study which reported 32.66% of prescriptions were not having the gender information. The gender has a great impact on prescription, there is Special precautions for some drugs used by female or male during some periods, therefore; it is important to determine the gender of patients in the prescription form.

Omitted age of patients in the prescriptions also reported in the 226 prescriptions which represent (75%), which were more than reported in other study (72%) [21].

The name of the patient was present nearly in all prescriptions. However, the department and file number were 298 (99.3%), 257 (85.7) which were high in compare the other study which reported 7.11% and 7.55% respectively [33].

The data from the present study indicated that the most common commission errors was illegible writing in 650(86%) in the prescriptions form under study, following by absence of strength of drugs 464 (61.4%), absence route of drugs administrations 417 (55.2%), absence of drugs dose 336 (44.4%). The least common errors of commissions were absence of drug duration 230 (30.4%) and drugs frequency 209 (27.6%). There were no any interactions between the drugs in the study prescriptions.

The result of this study contradict result reported in other studies, which result in that 18.44% of prescriptions without duration of treatment [21], other reported 26.43% without duration [22] which were less than reported in this study 230 (30.4%).

In other research the route of drugs administrations omitted in 417 (55.2%), it high in compare with result reported 46.33% [21] which could lead to misunderstandings. For instance, some drugs are to be taken orally, others intravenous, others intramuscular, these errors reported in other studies, first conducted in Oman, which result in that more than 22% of prescriptions were not having the information on dose, and more than 23% of prescriptions omitted the dosage forms of prescribed drugs, the date of dispensing of medications was omitted in all the prescriptions and more than 44% of prescriptions were missing the signature of dispenser. It was also found that more than 4% of prescriptions omitted the prescriber's signature and more than 18% of prescriptions omitted the date of prescription [4] incomplete prescriptions and dosing errors were also reported study conducted in the paediatric wards of Dessie Referral Hospital [4].

Incorrect calculation of dose also reported in study conducted in Royal Manchester Children's Hospital (RMCH) in United Kingdom, 1 wrong dosage and infusion rate also has been reported the most common errors in study was conducted in Imam Khomeini Hospital (Tehran, Iran) [5].

In Nigeria, potential drug-drug interaction or contraindication reported in 19.8%; and 16.6% duration of medication was inappropriate [15], in his study there was not any interaction in the drugs prescribed among prescriptions.

Another study was conducted in the haematology ward of a teaching hospital in Malaysia. result in that the most common types of drug administration errors were incorrect time (25.2%) [19].

The data from the present study indicated that the most common drugs subjected to prescribing errors were analgesic 27.10%, which similar the result reported in other study which reported that the NSAIDs and analgesics (35.11%) Other study reported antibiotics and injections were 52.8 and 17%, respectively [2]. The percentage of encounters with prescription of antibiotics (18%) is relatively high when compared with other studies in Bahrain (45.8%) [31], Lebanon (17.5%) [33].

The second highest category of drugs reported in this study were antibiotics(antibacterial) (15%) which were the most common classes of drugs subjected to prescribing error which was lower than reported in other study [4] other study reported cardiovascular (24.11%) [21]. Furthermore bronchodilators (10.70%), cardiovascular, hypertension (10.10%), the muscle relaxes drugs, normal saline solutions and psychological drugs .023% were the drugs with the lower frequency subjected to an error.

There is a strong positive correlation between the number of drugs prescribed and the number of commission errors, when the number of drugs prescribed increase, the number of commission errors regarding the drugs will increase, it may be result from that there was no enough time to prescribe and write all details regarding drugs, but; regarding the correlation with the number of omission errors, there is no relation or there is a weak negative relation, in which the number of omission errors more than number of commission errors.

Conclusion

This is the first study evaluate the prescriptions in Saudi Arabia. The errors of prescriptions are high which reduce the patient safety in the hospital, in which the number of legal cases related to the medical errors in Saudi Arabia has increased from 896 cases in 2005 to 1356 case in 2008 [16].

Application of modification prescriptions forms, strict legislation measures relating to drugs prescriptions and development of system applying CPOE and CDSS are among the necessary intervention(s) that may reduce the prescription errors, increase the patient safety and protect them from medication errors.

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