



Drug Interactions – A View on Doctors

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Abstract

Drug can be useful tools in the prevention and treatment of Symptoms and Diseases, but if not used properly, they may be Harmful and cause new symptoms (or) produce suboptimal effects. Most drugs have multiple pharmacologic effects in patients, specially the newer, more complex drugs being marketed. Clinically significant drug interactions can occur when two or more drugs are taken in combination. The resulting pharmacological action (either potentiation or antagonism of the interacting drugs) can be lesser or greater than the total effects of the drugs individual actions. Drugs identified as having a high risk of being involved in a clinically significant drug interaction frequently have a narrow therapeutic index, a very steep dose-response curve or potent pharmacologic effects. A toxic dose of these drugs may be only slightly above the therapeutic dose. A slight increase in the dose may produce a large increase in serum drug levels and clinical effect. Conversely, a slight decrease in the plasma level of drugs with a steep dose-response curve may result in a significant loss of therapeutic effect. More than 30 medications are introduced each year, and physicians receive frequent mailings about discovered drug interactions. As a result, many physicians feel overwhelmed and question the safety of multiple drugs Regimens. Some drug interactions may seriously harm to the patients.

Key words: Drug interactions, Physicians, Questionnaire.

Introduction

A large number of drugs are introduced every year, and new interactions between medications are increasingly reported. Consequently, it is no longer practical for physicians to rely on memory alone to avoid potential drug interactions. The interaction may increase (or) decrease the effectiveness of the drug, it also may result in a new side effects. Recognizing drug interaction is a daily challenge for family physicians, and remembering all potential interaction has become virtually impossible [1].

The magnitude of the drug interactions problem increases significantly in certain patient populations and as the number of medications taken each day increases. Drug interactions that may be of minor clinical significance in patients with less severe forms of a disease can cause significant exacerbation of the clinical condition in patients with more severe forms of the disease. Patient populations at high risk include the elderly, critical care patients, and patients undergoing complicated surgical procedures. The elderly populations are at high risk because of the number of medications consumed, complicated drug regimens, and clinical states often presented. About 80% of elderly patients routinely take prescription and nonprescription medications concurrently. Some patients may see multiple physicians for acute and chronic conditions, as well as obtain medication from more than one community pharmacy or mail-order pharmacy [2, 3].

Clinical management of drug-drug interactions should include prospective and concurrent patient, disease and drug-monitoring measures that are sensitive enough to alert the pharmacist or healthcare provider to monitor specific patient, disease or drug-therapy parameters and, whenever possible, correlate these findings with clinical laboratory tests. Follow-up monitoring of a patient's therapy and making appropriate adjustments in the drug regimen can circumvent potentially significant drug interactions. Patients at high risk for drug interactions who also take drugs with a narrow therapeutic index should be monitored more closely for drug interactions, especially when a new drug is added or discontinued.

Depending on the drugs in question, likely drug interactions will generally occur within a few days following a change in drug regimen. If two drugs have been identified as having high potential to interact and cause harm, the pharmacist can contact the patient's physician to obtain an order for another medication that will not cause the troublesome interaction [4].

Materials and Methods

Site of study

The entire studies of Drug-Drug interactions Questionnaires were carried out in doctors from various specialties in hospital and clinical practice from October - 2009 to December - 2009.

Study Design

Design of Drug – Drug Interaction Questionnaire

A standard Questionnaire containing 12 Questions regarding Prescription writing, importance, experience, training program attended, training needs, source of information's, software need and software design for Drug-Drug interaction were prepared.

Collection and analysis of Drug Interaction Questionnaire

The prepared Questionnaire circulated to 100 Doctors of various specialties. The filled Questionnaire were collected and analyzed.

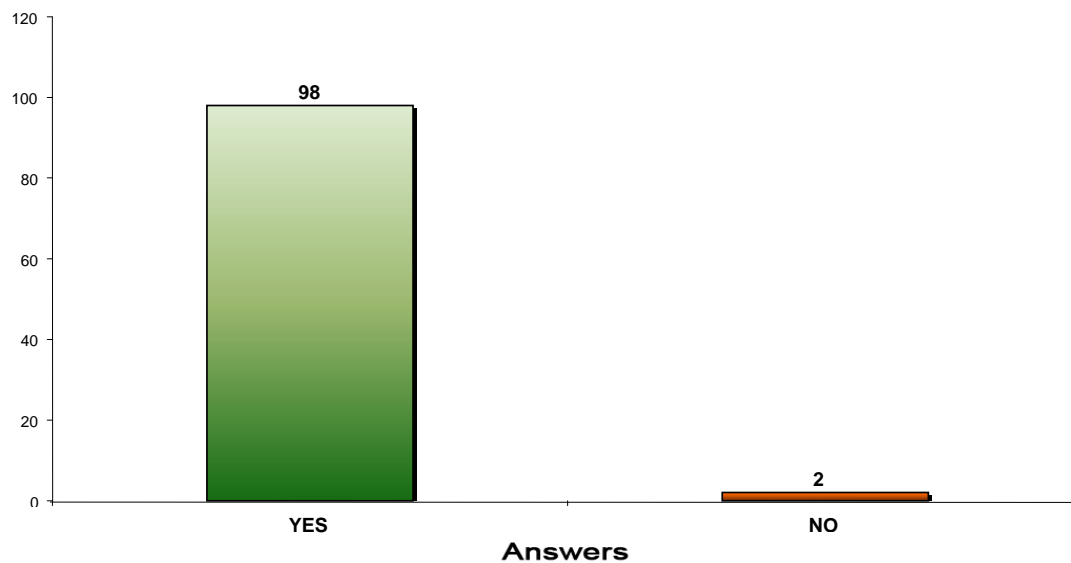
Results and Discussion

Drug-Drug Interaction Questionnaire Analysis

The standard Questionnaire containing 12 Questions regarding Drug-Drug interaction and Software need were circulated to 100 Doctor's of various specialties, the filled Questionnaire were collected, analyzed and the following results were obtained.

Fig -1: Importance of drug – drug interaction

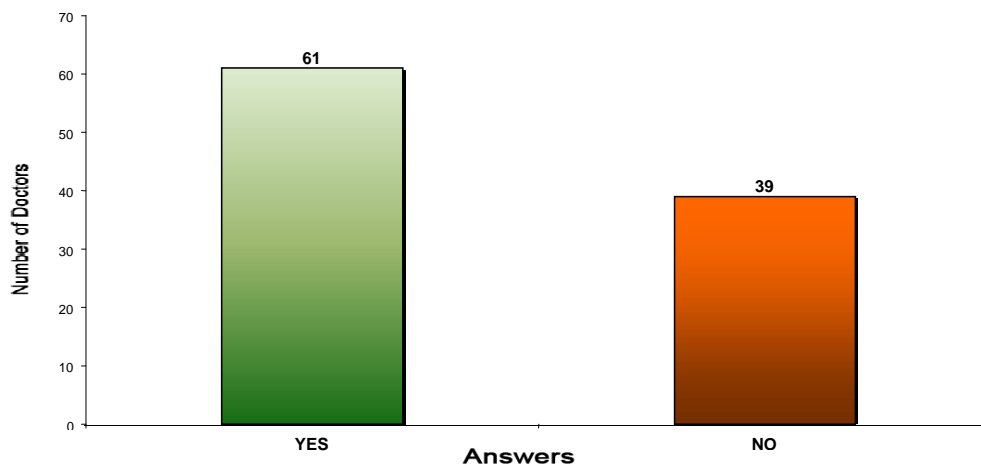
(1. Do you consider drug – drug interaction to be an important Aspect when you are writing a prescription?)



This study revealed that 98(98%) Doctors felt that a Drug-Drug interaction is an important aspect while writing a prescription.

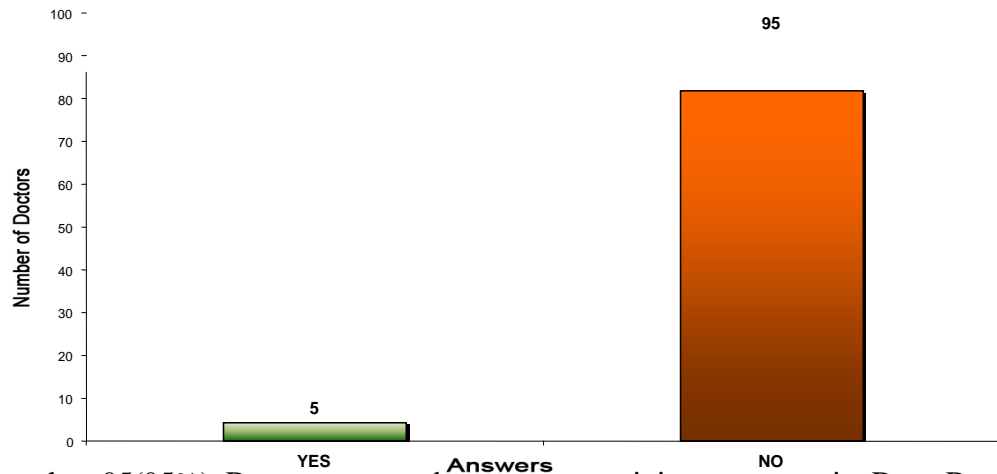
Fig 2: Experience of serious drug -drug interaction in their practice

(2. In your practice, have you come across any serious drug – drug interaction?)



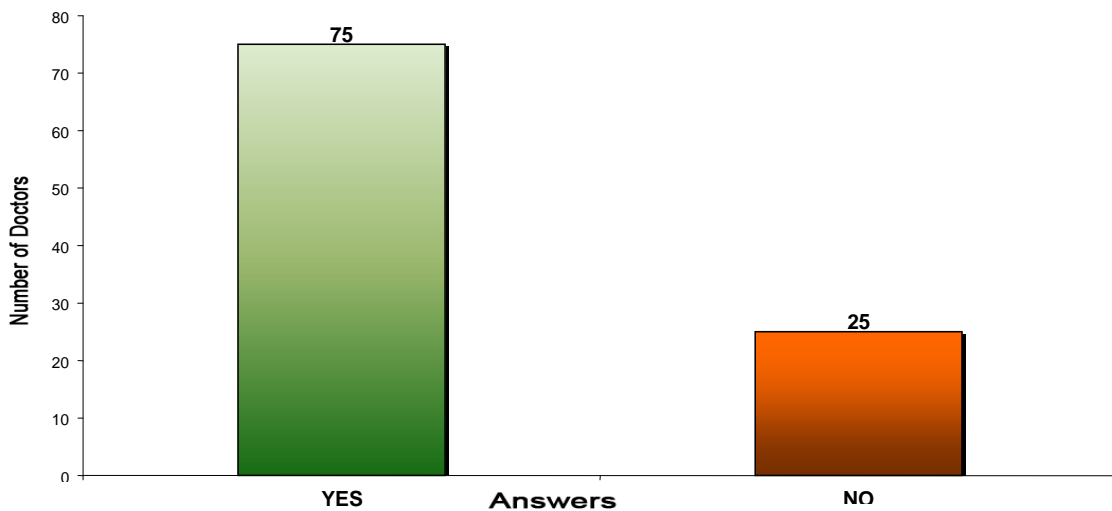
This study shows that out of 100 Doctors 61(61%) Doctors had serious Drug-Drug interaction experience in their practice and 39(39%) had no experience.

Fig 3: Training program underwent on drug–drug interaction/ adverse drug reaction
 (3. Have you undergone any DRUG-drug interaction/adverse drug reaction training program?)



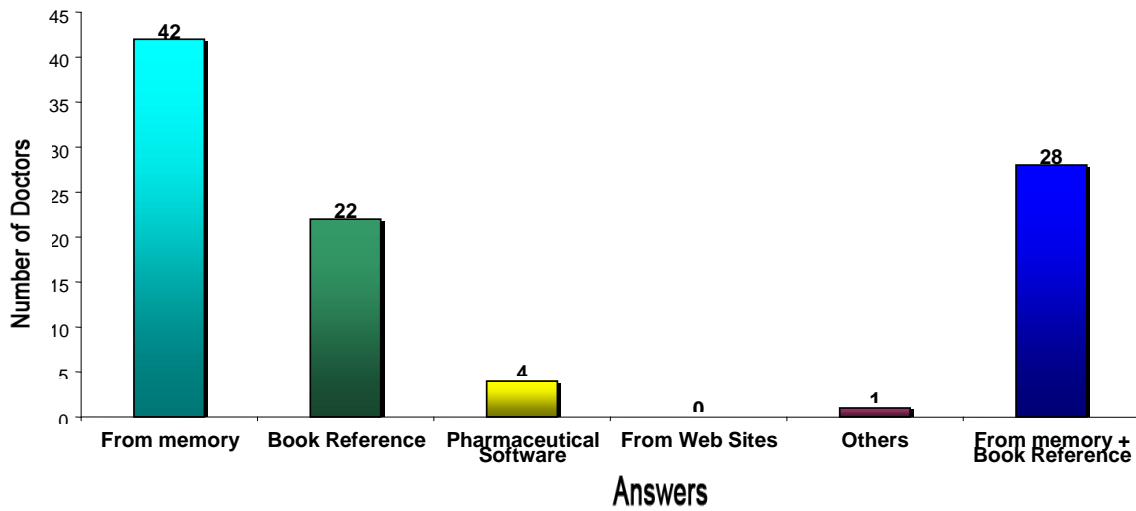
This study shows that 95(95%) Doctors not underwent any training program in Drug-Drug interaction/Adverse drug reaction.

Fig 4: Interest in attending training on drug-drug interaction /adverse drug reaction
 (4. Are you interested in attending any training on drug – drug interaction / adverse drug reaction?)



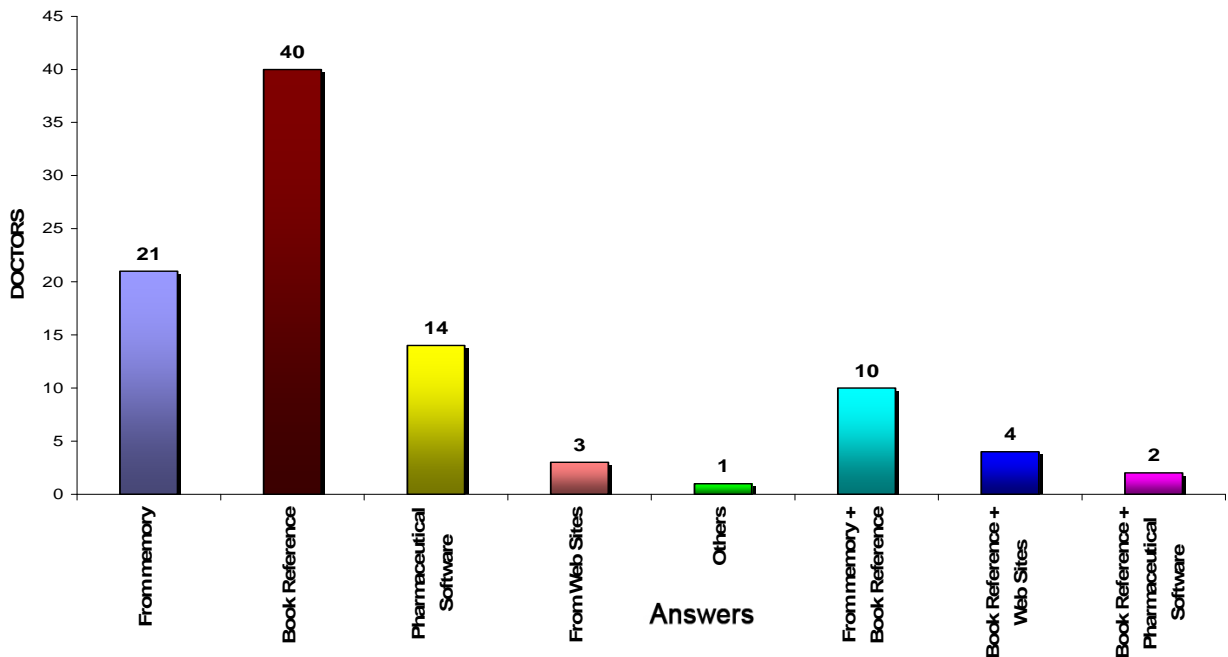
This study shows that out of 100 Doctors, 75(75%) Doctors expressed their interest in attending Training program on DDI/ADR.

Fig 5: Evaluation of drug-drug interaction at the time of prescription writing
 (5. How would you evaluate a potential DRUG –DRUG INTERACTION when writing a prescription?)



This study shows that out of 100 Doctors, 42 (42%) Doctors Evaluating potential Drug-Drug interaction from memory, 22 (22%) from Book Reference and 28 (28%) Doctors from memory & Book reference.

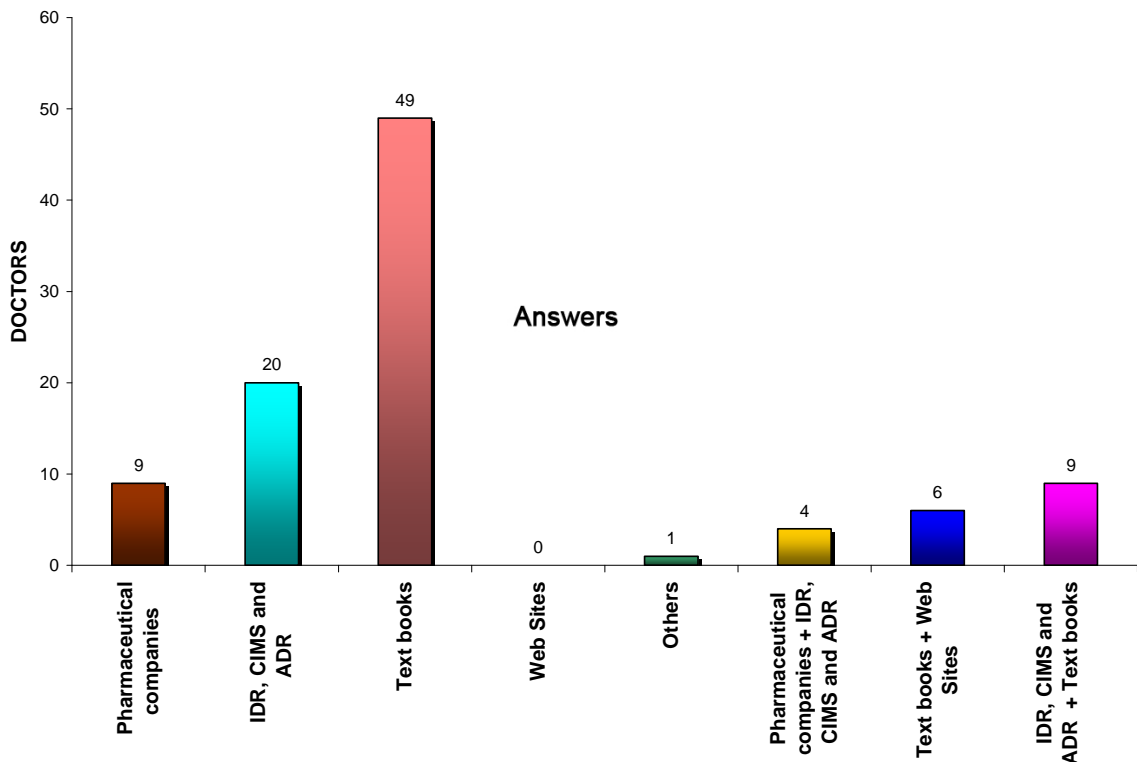
Fig 6: Ideal method for evaluating drug-drug interaction
 (6. Which one of the method is ideal for evaluating a potential drug – drug interaction?)



This study shows that out of 100 Doctors, 21(21%) Doctors felt ideal method for evaluating potential Drug-Drug interaction from Memory, 40(40%) from Book reference, 14(14%) from pharmaceutical software and 10(10%) from Memory and Book reference.

Fig 7: Sources of drug-drug interaction information

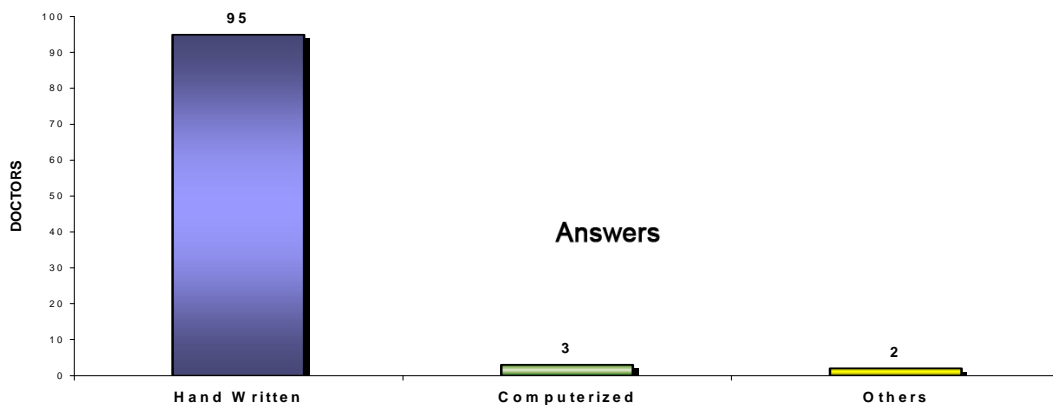
(7. Who / which is your prime source of information on drug – drug interaction?)



This study shows that out of 100 Doctors, 49(49%) Doctors were gets drug interaction information from Books, 20(20%) from IDR, CIMS & ADR, 9(9%) from pharmaceutical companies and 9(9%) from combination of IDR, CIMS and ADR + Text Books.

Fig 8: Method of prescription writing

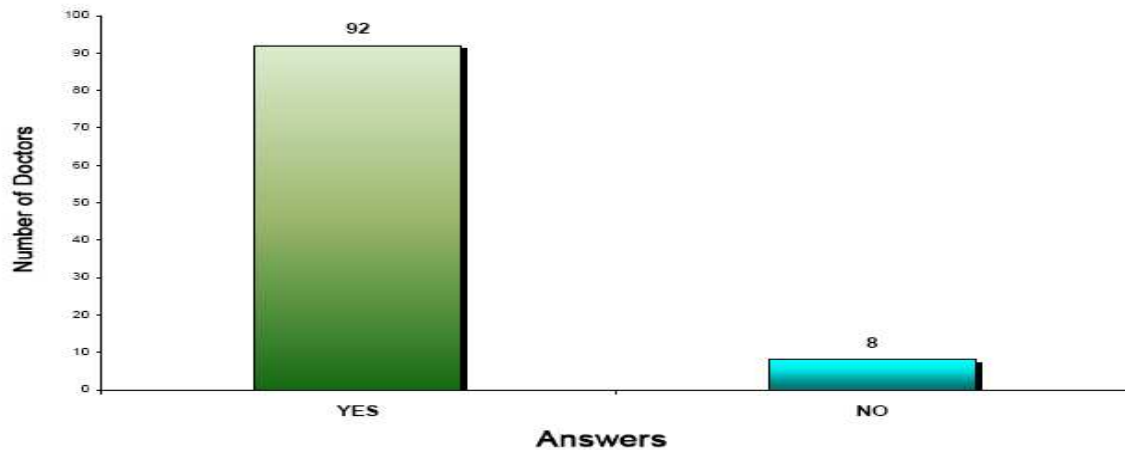
(8. Your preferred method of giving out a prescription is)



This study shows that 95(95%) Doctors writing their prescription by Hand written and 3(3%) Doctors using computer.

Fig 9: Need of solution for drug-drug interaction

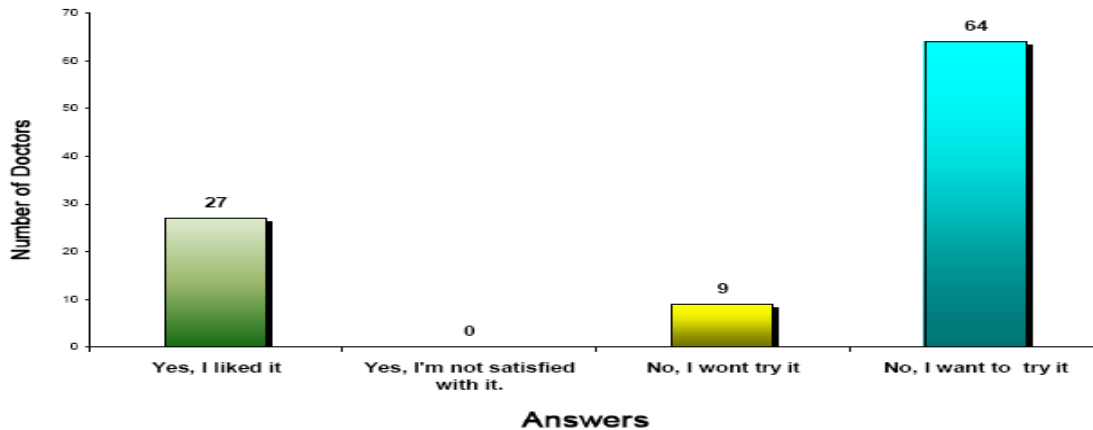
(9. Have you felt a need for a Better, Reliable and Speedy solution to help you decide on drug – drug interaction?)



This study revealed that out of 100 Doctors, 92(92%) Doctors were need speedy, reliable, better solution to solve the Drug-Drug interactions.

Fig 10: Experience on computer based software for identifying a potential ddi.

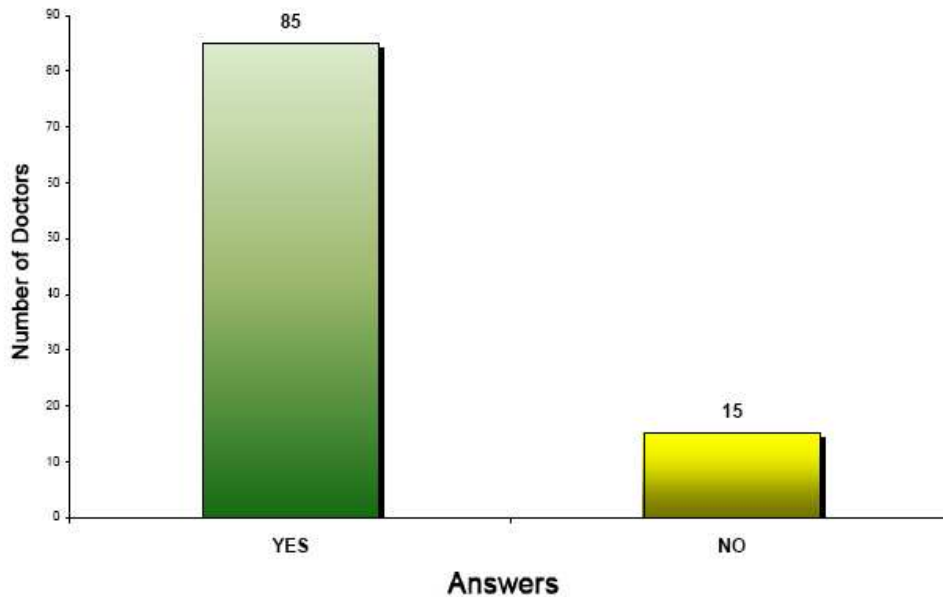
(10. Have you tried any computer – Based solution to identify a potential drug –drug interactions?)



This study revealed that out of 100 Doctors, 64 (64%) Doctors said they want to try the computer based software, 27 Doctors said they liked it for identifying potential Drug –Drug interactions.

Fig 11: Interest on computer software for identify the drug-drug interaction

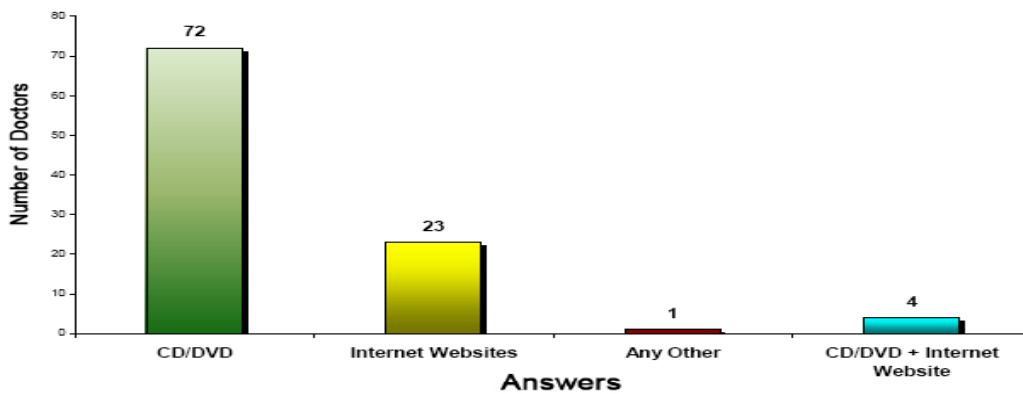
(11. Would you like computer software that helps you to identify any potential drug – drug interaction in your prescription?)



This study shows that out of 100 Doctors, 85(85%) Doctors were interested on computer based software for identifying the Drug-Drug interactions and 15(15%) were not interested.

Fig 12: Design of drug interaction software

(12. Would you like your DRUG – DRUG INTERACTION SOFTWARE?)



This study shows that out of 100 Doctors, 72(72%) Doctors were interested on CD/DVD based software and 23(23%) were Internet based software.

Conclusion

A total numbers of 100 Questionnaire containing 12 Questions regarding Drug-Drug interaction and Software need were circulated to Doctor's of various specialties, the filled Questionnaire were Collected, Analyzed. This study was concluded as follows

98% of Doctors consider Drug –Drug interaction is an important aspect while writing prescription.61% of Doctors had serious Drug-Drug interaction experience in their practice.95% of Doctors are not undergone any Drug-Drug interaction/Adverse Drug Reaction Training Program.75% of Doctors expressed their interest for attending Drug-Drug interaction / Adverse Drug Reaction Training. Most of the Doctors Evaluate the Drug-Drug interaction at the time of prescription writing, from memory (42%), book reference (22%) and both (28%).40% of Doctors felt that the ideal method for evaluating Drug-Drug interaction is from book reference. 95% of writing their prescription by Hand written.92% of Doctors need a better solution to identify the Drug-Drug interaction.64% of Doctors said, they want of try the computer-based software.85% of Doctors were interested on computer based software for identify the Drug-Drug interaction.72% Doctors interested the design of the software to be a CD/DVD based.

Prevention of potentially harmful drug-drug interactions is an important element in helping patients avoids medication related problems and improving medication safety in inpatients and outpatients settings. However, several gaps in the healthcare professionals with DDIs screening process have been identified and can contribute to the occurrence of DDIs. These include failure to properly screening of potential DDIs, inadequate DDIs detection software, inconsistencies in the severity ratings of DDIs.

References

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