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Research Article

A RESEARCH STUDY AND REPORT ON CLINICAL PHARMACY SERVICES PROVIDED BY DOCTOR OF PHARMACY DURING THEIR CLERKSHIP IN HOSPITAL

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Abstract

Clinical pharmacy is the branch of pharmacy concerned with the science and practice of rational medication use. Clerkship or rounds rotation refers to the practice of medicine by medical students. Aim: The aim of the study is the implementation of Doctor of pharmacy in clinical pharmacy services during the clerkship postings at the ESI Hospital, Indiranagar, Bangalore. Objective: Prescription study and analysis and preventing medication related problems such as adverse drug reactions, drug interactions and over dosages, performing drug utilization evaluation, providing drug information, patient counseling, improving the patient safety initiatives and health related outcomes, reducing work burden of physicians and providing better health care. Methodology: All the required data was collected from patients through patient representative interview and case sheets and treatment charts analyzed and reported by using adverse drug reactions, drug interactions, drug information query and answer, patient counselling and feedback forms. Discussion and Results: A total of 420 peoples were selected for the study from the different departments includes general medicine, pediatric, obstetrics and gynecology, orthopedic and surgery a total of 674 services provided by the doctor of pharmacy professional and the data was analyzed with the help of prism graph pad software and the P-value was ≤ 0.001 which states that the study was highly significant. Conclusion: The present study concludes that the Physicians has an increased workload, they are not able to manage all the healthcare services. So, it shows that the Doctor of pharmacy professionals can reduce the workload of physicians by acting as a bridge between the Physicians and Patients. Its urge that the Indian government should take an initiative to implement Doctor of Pharmacy services in our Hospitals to reduce the emergency and to provide better health care services.

Keywords: Clinical Pharmacy, Doctor of Pharmacy, General Medicine, Obstetrics and Gynecology, Prism graph pad software, Orthopedic, Pediatric and Surgery.



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INTRODUCTION**Clerkship**

Doctor of Pharmacy is a 6 years course and a program described in which is Clerkship. Clerkship students provide pharmaceutical care by identifying Drug-related problems, suggesting interventions to solve the problems and documenting the patient's outcome.[1]

Clinical Pharmacy

Clinical Pharmacy is the branch of pharmacy in which clinical pharmacists provide direct patient care that optimizes that use of medication and promotes health, wellness and prevention of disease.[2]

Clinical Pharmacist

Clinical Pharmacists are those persons who provide direct patient care that optimizes that use of medication and promotes health, wellness and prevention of disease by practicing rational medication use and clinical practice skills.[3]

Functions of Clinical Pharmacist

Clinical Pharmacists are expert in therapeutic use of medications in the health care system. They can provide medication therapy evaluations and recommendations to patients and other health care professionals. The overall role of clinical pharmacist is to promote the suitable use of medications and medicinal devices, which can be used in the prevention, diagnosis and treatment of any disease condition. These activities can be helpful to reduce the drug related problems such as adverse drug reactions, drug interactions etc... it will also help us to reduce expenditure of patient on medicinal products. [4,5]

Clinical Pharmacy Services [6].

- ❖ Taking the medical history of patient
- ❖ Patient education
- ❖ Formulation and management of drug policies
- ❖ Drug information
- ❖ Teaching and training to medical and paramedical staffs
- ❖ Research and development of new medications or diseases
- ❖ Participation in drug utilization studies
- ❖ Patient counseling
- ❖ Therapeutic drug monitoring
- ❖ Drug interaction surveillance
- ❖ Adverse drug reaction reporting
- ❖ Safe use of drugs
- ❖ Disease management cases

❖ Pharmacoeconomics

Need of Clinical Pharmacy Services in India

India is the second largest populated country in the world. The physicians are struggling to provide the effective services to the patients because of the insufficiency of the number of physicians, in this case a clinical pharmacist can act as a bridge between the patients and physician.[7] Clinical pharmacist can reduce the workload of the physicians and both together can provide better health care services. To overcome this crisis the Pharmacy Council of India (PCI) has introduced a 6-year doctoral degree named Doctor of Pharmacy or Pharm D, but Indian health care system hasn't used the service of doctor of pharmacy effectively to improve the patient care yet.[8] Further for the survival and growth of the clinical pharmacy system in India, it must gain acceptance by the medical profession and the outcome of this challenge depends on the quality and expertise of the present Pharm D students and recent Pharm D graduates.[9]

Aim

The aim of the study is the implementation of Doctor of pharmacy /Clinical Pharmacy Services during the clerkship postings at the ESI Hospital, Indiranagar, Bangalore, Karnataka ,India.

OBJECTIVES**The main objectives of the study include**

- ✓ Prescription study and analysis
- ✓ Medication chart review
- ✓ Medication history interview
- ✓ Reducing drug related problems
- ✓ Monitoring and reporting of adverse drug reaction
- ✓ Monitoring and reporting of drug interaction
- ✓ Patient education
- ✓ Providing information about drugs
- ✓ Improving patient safety initiatives
- ✓ Patient counseling
- ✓ Reducing burden of physician

METHODOLOGY

A detailed study of clinical pharmacy services provided by the doctor of pharmacy during my clerkship postings at different wards of ESI Hospital, Indiranagar, Bangalore, Karnataka ,India.

Study design

It is a prospective observational and interventional study

Study period

The study was conducted for a period of 6 months from 2018 october to 2019 March

Study site

The study was conducted at the inpatient departments of ESI hospital, Indiranagar, Bangalore

Sample size

The study was conducted for a period of 8 months and the sample size was 420

Source of data

All patients satisfying the inclusion criteria were selected from the inpatient department of ESI Hospital, Indiranagar, Bangalore, Karnataka, India. All the required data was collected from patients through patient representative interview and case sheets and treatment charts analyzed and reported by using adverse drug reactions, drug interactions, drug information query and answer, patient counseling and feedback forms.

Inclusion criteria

- Patients who are willing to participate in the study

Exclusion criteria

- Patients who are not willing to participate in the study

RESULTS AND DISCUSSION

Table 1 shows that there are 59 males, 58 females and a total of 117 patients were in General Medicine which is 27.9% of the total population. 32 males, 23 females and a total of 55 patients were in surgery ward which is 13.1% of the total population. 63 males, 72 males and a total of 135 patients were in pediatric ward which is 32.1% of the total population. 65 females were in the obstetrics and gynecology ward which is 15.5 % of the total population. 31 males and 17 females and a total of 48 patients were in the orthopedic ward respectively.

Note:

GM- General Medicine

OB & G- Obstetrics and Gynecology

ESI- Employees State Insurance

Table No. 1: Distribution of number of female and male population along with along with their total number and percentage in different inpatient department of ESI Hospital

TYPE OF DEPARTMENT	GM	SURGERY	PAEDIATRIC	OB & G	ORTHOPEDIC
Number of Males(M)	59	32	63	--	31
Number of Females (FM)	58	23	72	65	17
Total (M+FM)	117	55	135	65	48
Percentage(M+FM) %	27.9	13.1	32.1	15.5	11.4

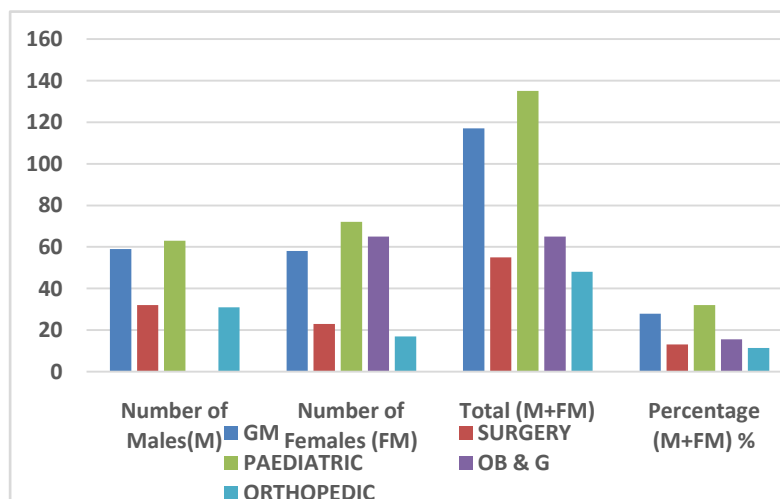


Fig. No.1: Distribution of number of female and male population along with their total number and percentage in different inpatient department of ESI Hospital[1,2]

Table 2 shows the age wise distribution of patients at different inpatient wards. In General medicine 15 patients belongs to the category of 10-20, 20 patients belong to the category of 20-30, 25 patients belong to the category of 30-40, 34 patients belong to the category of 40-50, 18 patients belong to the category of 50-60 and 5 patients belongs to the category of 60-70. In surgery ward, 8 patients belong to the category of 10-20, 13 patients belong to the category of 20-30, 15 patients belong to the category of 30-40, 7 patients belong to the category of 40-50, 8 patients belong to the category of 50-60 and 4 patients belongs to the category of 60-70. In Pediatric ward 108 patients belong to the category of 0-10 and 27 patients belong to the category of 10-20. In OB & G ward 6 patients belong to the category of 10-20, 26 patients belong to the category of 20-30, 14 patients belong to the category of 30-40, 12 patients belong to the category of 40-50, 5 patients belong to the category of 50-60 and 2 patients belong to the category of 60-70. In orthopedic department 6 patients belong to the category of 10-20, 7 patients belong to the category of 20-30, 12 patients belong to the category of 30-40, 21 patients belong to the category of 40-50 and 2 patients belong to the category of 50-60.

Table. No.2: Age wise distribution of patients along with their total number and percentage in different inpatient department of ESI Hospital

Departments	GM	Surgery	Pediatric	OB & G	Orthopedic
0-10	--	--	108	--	--
10-20	15	8	27	6	6
20-30	20	13	--	26	7
30-40	25	15	--	14	12
40-50	34	7	--	12	21
50-60	18	8	--	5	2
60-70	5	4	--	2	--
Total	117	55	135	65	48
Percentage %	27.9	13.1	32.1	15.5	11.4

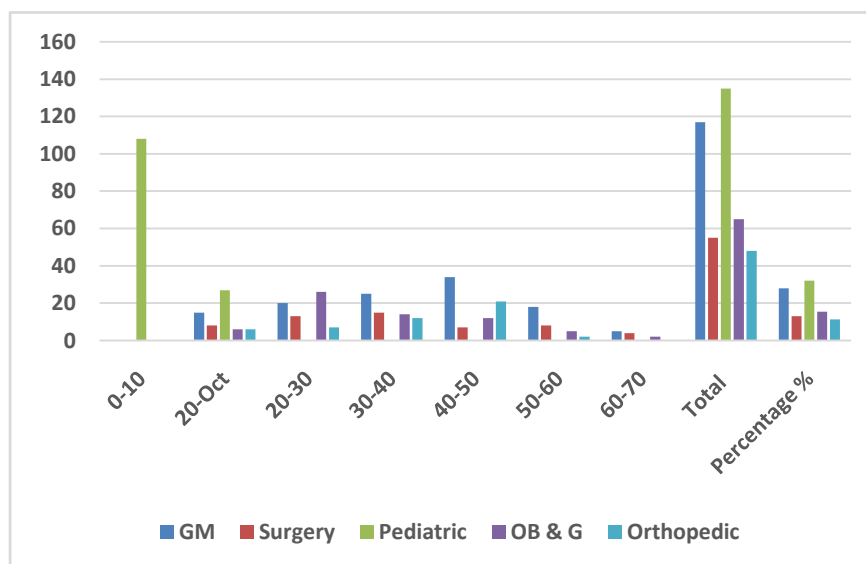


Fig. No. 2: Age wise distribution of patients along with their total number and percentage in different inpatient department of ESI Hospital[1]

Table 3 shows that a total of 674 clinical pharmacy services were provided by the Doctor of Pharmacy professionals, in General medicine ADR-62, DI-25, Drug information services – 33, Patient counseling services 43 and DUE 48, a total of 211 clinical pharmacy services provided which is 31.3% of the total clinical pharmacy services provided. In surgery ward ADR-12, DI-15, Drug information services-18, Patient counseling services-22 and DUE-8, a total of 75 clinical pharmacy services were provided, which is 11.1% of the total clinical pharmacy services provided. In pediatric ward ADR-53, DI-58, Drug information services-16, patient counseling services-63

and DUE-8, a total of 207 clinical pharmacy services were provided, which is 30.7% of the total clinical pharmacy services provided. In OB & G department ADR-14, DI-12, Drug information services-16, Patient counseling services-32 and DUE-30, a total of 104 clinical pharmacy services provided, which is 15.4% of the total clinical pharmacy services provided. In orthopedic department ADR-7, DI-12, Drug information services-6, Patient counseling services-40 and DUE-12, a total of 77 clinical pharmacy services provided which is 11.4% of the total clinical pharmacy services provided. For statistical analysis prism graph pad software was used for this study and the P-value was ≤ 0.001 which states that the study was highly significant.

Table No. 3: Type of Pharm D services provided by the Doctor of Pharmacy professionals to the patient along with their total number and percentage in different inpatients departments of ESI Hospital

Type of Pharm D services provided	GM	Surgery	Pediatric	OB & G	Orthopedic
ADR Identification and Reporting	62	12	53	14	7
DI Identification and Reporting	25	15	58	12	12
Drug Information Services	33	18	16	16	6
Patient counseling services	43	22	63	32	40
DUE (Drug Utilization Evaluation)	48	8	17	30	12
Total Services	211	75	207	104	77
Percentage of services (%)	31.3	11.1	30.8	15.4	11.4

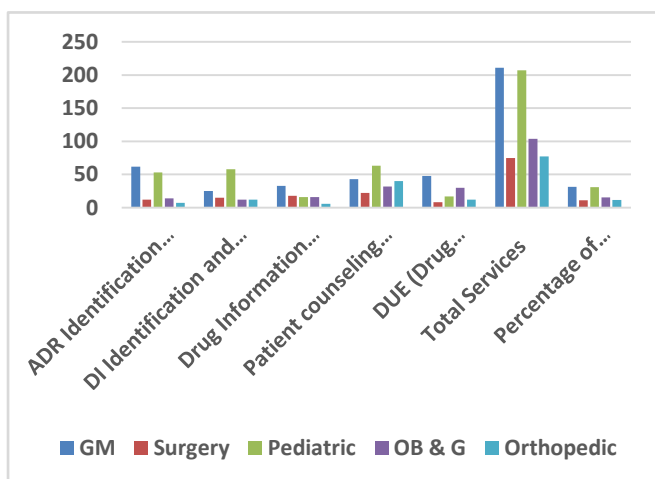


Fig. No.3: Type of Pharm D services provided by the Doctor of Pharmacy professionals to the patient along with their total number and percentage in different inpatients departments of ESI Hospital [1,2,3]

CONCLUSION

The present study concludes that the Physicians has an increased workload, they are not able to manage all the healthcare services. So, it shows that the Doctor of pharmacy professionals can reduce the workload of physicians by acting as a bridge

between the Physicians and Patients. Its urge that the Indian government should take an initiative to implement Doctor of Pharmacy services in our Hospitals to reduce the emergency and to provide better health care services.

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