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Research

A Prospective Study on Assessment of the Drug Interventions during Ward Rounds in the Department of General Medicine at a Tertiary Care Hospital.

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Abstract

The aim of the present study was a prospective study on assessment of the drug interventions during ward rounds in the department of general medicine at a tertiary care hospital. Out of 18 drug need not prescribed were 3(16.66%), inappropriate dosage form were 6(33.33%), wrong dose taken were 1(5.55%), dose too low were 3(16.66%), dose too high were (5.55%) and duration of treatment inappropriate were 4(22.22%). Highest number of interventions identified were minor 48.71%. Having highlighted the importance of clinical pharmacist in this study, a multidisciplinary team approach is required to effectively minimize the potential of drug related problems. Furthermore, the high degree of acceptance by prescribers encourages clinical pharmacists to continue their service and to extend it to other wards and departments. The present results point to the establishment of drug related problem reporting system at each hospital and to share data with other hospitals healthcare settings. Participation and interventions of clinical pharmacists in health care positively influence clinical practice. Many studies have monitored interventions in clinical areas to provide quantitative and qualitative data on pharmaceutical input.

Keywords: A Prospective Study, Drug Interventions, General Medicine, Tertiary Care Hospital.

INTRODUCTION

Multimorbidity, the presence of a few co-happening conditions, is available in around 70% of the more seasoned grown-up populace and turns into a significant clinical and monetary test for medical services systems[1,2].

For instance, the majority of the clinic clinical affirmations are the consequence of ongoing illnesses in the more seasoned adults[3,4]. There is a need of an extensive methodology including the social circle, sustenance and pharmacotherapy, to look with the rising necessities of multimorbidity patients[5].

Pharmacotherapy has been related with negative wellbeing results like unfriendly impacts, connections, adherence issues, practical decay, mental issues, falls, urinary incontinence and metabolic or nourishing problems[6]. The gamble of these issues increments with the quantity of medications. Polypharmacy, characterized as the utilization of more than four or five medications, happens in 40% of the grown-ups north of 65 years old[7]. Commonness of polypharmacy comes to up to 90% of grown-ups more than 75 years right now of medical clinic admission[8]. Plus, during hospitalization, drug changes and new medications for intense medical conditions will represent a higher gamble of negative wellbeing results. Up to 40% of hospitalized patients experience the ill effects of medication related iatrogenesis6, arising as the fourth to 6th mortality cause at this medical services level[9].

A few elements may fundamentally expand the gamble of experiencing a medication related issue (DRP), characterized as "an occasion or situation including drug treatment that really or possibly impedes wanted wellbeing outcomes" as recently depicted, for instance, in encounters of care changes across the continuum of care[10,11]. In the medical clinic setting, DRP might happen at all stages, from admission to discharge[12]. Certain circumstances, drugs in unambiguous restorative gatherings and fluctuation of pharmacology information across medical care experts could likewise be connected with DRP. Notwithstanding, there is debate on the effect of these factors and others like orientation, age, social elements or readmissions on the gamble of creating DRPs, particularly in clinical practice.[13]

Luckily, a significant extent of DRP can be prevented[14]. Drug store practice suggests the survey of solutions and applicable clinical information of hospitalized patients to upgrade the viability and wellbeing of medicines. The joining of clinic drug specialists into multidisciplinary groups has been displayed to build the discovery of DRPs as per research.[15] Mediations portrayed in research concentrates on zeroing in on DRP are changed and cover an expansive scope of viewpoints, for example, medicine compromise, drug adherence, portion change or helpful indication[16]. Notwithstanding, exercises in genuinely clinical practice are neither homogeneous nor normalized and information assortment, like the commonness or the portrayal of DRPs, is uncommon.

Specifically, the investigation of DRP in patients confessed to clinical wards consequences of extraordinary premium as these patients might be at a higher gamble of DRP because of a few elements: intense circumstances prompting the confirmation, old age with high weight of persistent comorbidities, more youthful patients with serious sicknesses, polypharmacy, hazard of renal debilitation, successive changes in drug therapy and length of the stay[17]. Concentrates on zeroing in on clinical units have generally would in general zero in on unambiguous clinical fields or mobile patients.[18] Likewise, many examinations on clinical wards are research projects that may not reflect genuine practice as there might have a portion of the accompanying constraints: imminent investigations with prohibitive consideration rules, explicit conventions and showing programs, little example sizes, utilization of automatized DRP cautions without direct drug specialist mediation, unfortunate philosophy depiction of the drug care process, absence of approved enlistment devices and dependable data in review investigations, absence of DRP risk factors investigation or investigation of a restricted rundown of expected factors, short review span or pathology/drug-trotted as opposed to patient-situated approach.[19] Likewise, a couple of studies have investigated the level of acknowledgment of suggestions by the clinical team.

The aim of the present study was a prospective study on assessment of the drug interventions during ward rounds in the department of general medicine at a tertiary care hospital.

METHODOLOGY

The study was conducted in a tertiary care teaching hospital (KIMS) at Bangalore in Karnataka.

Source Of data

The patients demographical, clinical, and therapeutic data were collected from

- Patients casenotes
- Immunization record book
- Patient's parent or guardian'sinterview

Study duration: This study was carried out during December 2019 to June 2020.

Study criteria

Inclusion criteria

Healthy Neonates, Infants, and children up to 18 years ofage.

Parents/guardians who consented to participate inthe study, as respondents

Exclusion criteria

- Above 18 years of age
- Prematurebaby
- Immuno-compromisedchildren
- Malnourishedchildren
- Paediatrics with history of chronic or neurological illness
- Paediatrics who has received any blood products, high doses of corticosteroids, cytotoxic agents or radiotherapy

Study design: Descriptive study
Sample size: 164 children, who attended Immunization center of Paediatric OPD, were studied for adverse reactions following immunization. Of these, a sub sample of mothers were interviewed for parent's awareness on immunization.

Statistical methods

The collected data were analyzed for statistical inference by computing proportion, percentages, and also presented in graphical methods.

MATERIALS

In the present study 164 children, who attended Immunization center of Paediatric OPD, who have fulfilled the inclusion and exclusion criteria were recruited for the study. Of these 164, a sub sample of 72 mothers with clear address and phone numbers were selected and interviewed for parent's awareness on immunization schedule by using parent's awareness evaluation form.

RESULTS

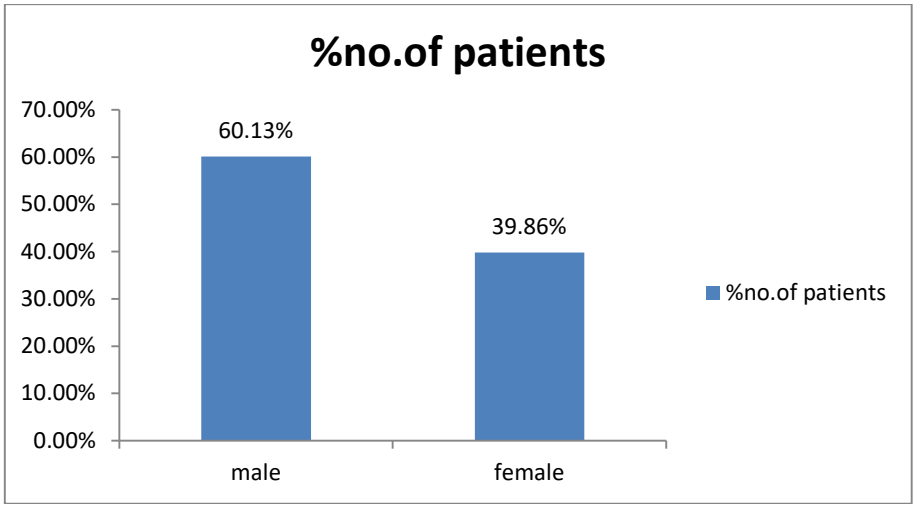

Fig 1: Gender Wise Distribution

According To Gender Wise Distribution of Patients Males Were Found Highest Number than the Females. Out of 143 sample size males were 86(60.13%) and females were 57(39.86%). Results were summarized in fig 1.

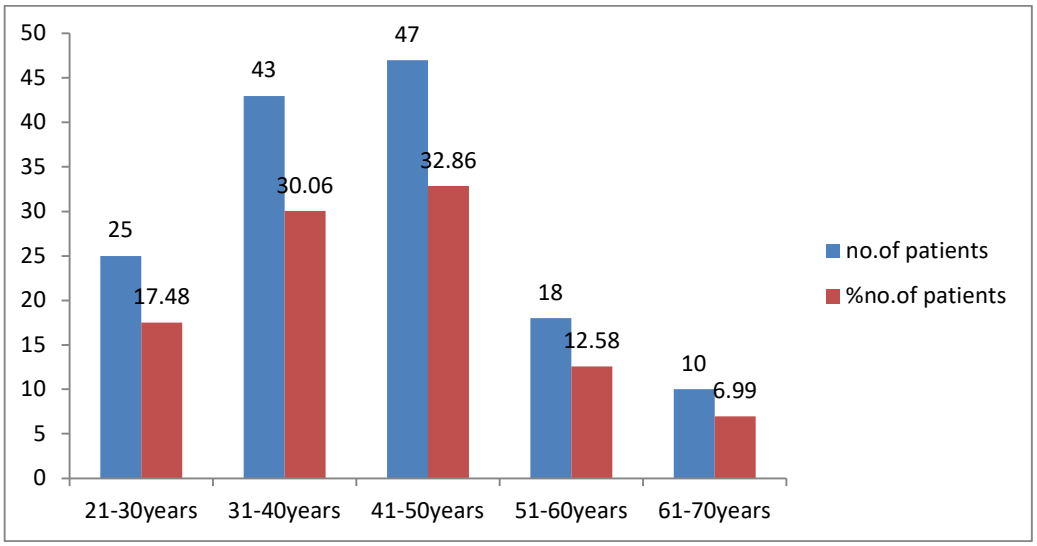

Fig 2: Age wise categorization of patients

According to our study 41-50years age group patients are high admitted in a general medicine ward during our study period compared to other age group patients.21-30years age group were 25(17.48%),31-40years age group were 43(30.06%),41-50years age group were 47(32.86%),51-60 years age group were 18(12.58%) and 61-70years age group were 10(6.99%). Results were summarized in table.2 and figure.2.

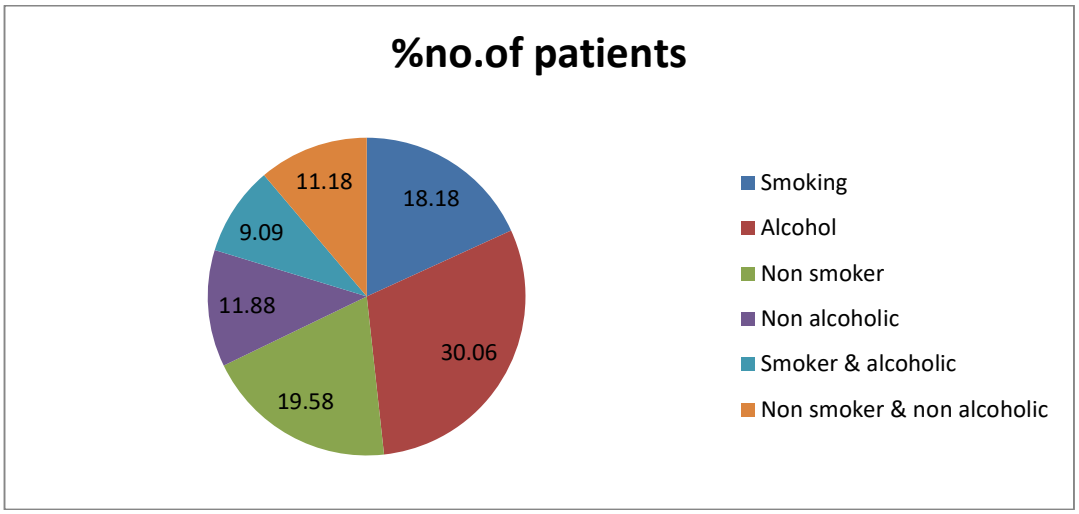

Fig 3: Social habits of the patients.

In our study we evaluated the social habits of the patients. Out of 143 patients smoking were 26(18.18%), alcoholic were 43(30.06%),nonsmoker were 28(19.58%),nonalcoholic were 17(11.88%),smoker and alcoholic were 13(9.09%) and non -smoker and non -alcoholic were 16(11.18%) identified. patients with alcoholics are identified more compared to other social habits. results were summarized in fig 3.

Table 1: Comorbidities of the patients

No. of Comorbidities	No. of patients	%No. of patients
One	68	47.55
Two	41	28.67
Three	26	18.18
>Four	8	5.59

In our study patients with one co-morbidity were 68(47.55%), two co-morbidities were 41(28.67%), three co-morbidities were 26(18.18%) and with more than four co-morbidities were 8(5.59%). Highest number of patients are with one co-morbidity. Results were summarized in table1.

Table 2: Drug related problems identified

S.no	Medication errors	No. of errors	% no. of errors
1	Drug needed not prescribed	3	16.66
2	Inappropriate dosageform	6	33.33
3	Wrong dose taken	1	5.55
4	Dose toolow	3	16.66
5	Dose too high	1	5.55
6	Durationinappropriate	4	22.22

S.no	Name of the drug related problems	No. of DRP'S
1	Medication errors	18
2	Adverse drug reaction	07
3	Drug drug interactions	11
4	Untreated indications	03

In our study we have identified the drug interventions during ward round participation. The identified drug related problems were medication errors (18), adverse drug reactions (7), drug drug interactions(11) and untreated indications (3).results were summarized in table 2.

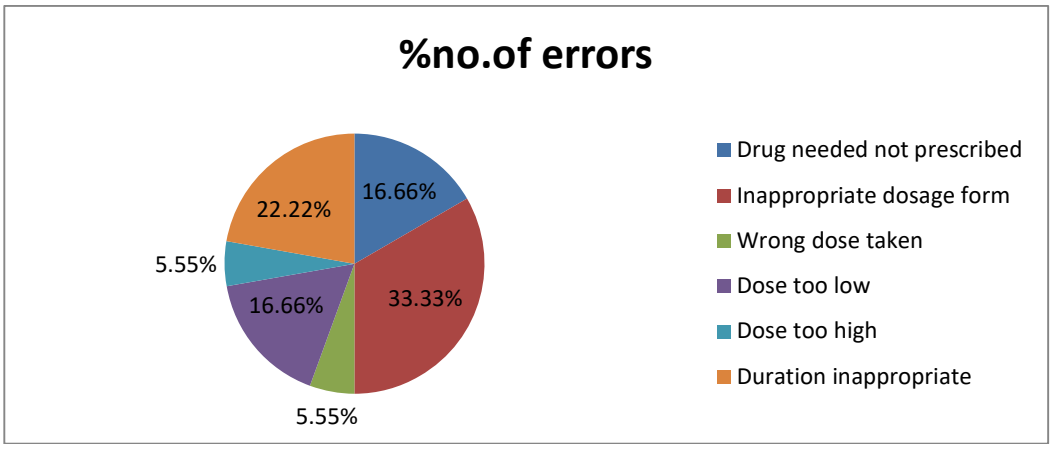

Fig 4: Medication errors identified

According to our study medication errors identified were 18. Out of 18 drug need not prescribed were 3(16.66%), inappropriate dosage form were 6(33.33%),wrong dose taken were 1(5.55%),dose too low were 3(16.66%),dose too high were (5.55%) and duration of treatment inappropriate were 4(22.22%).highest number of medication errors seen with inappropriate dosage form. results were summarized fig.4.

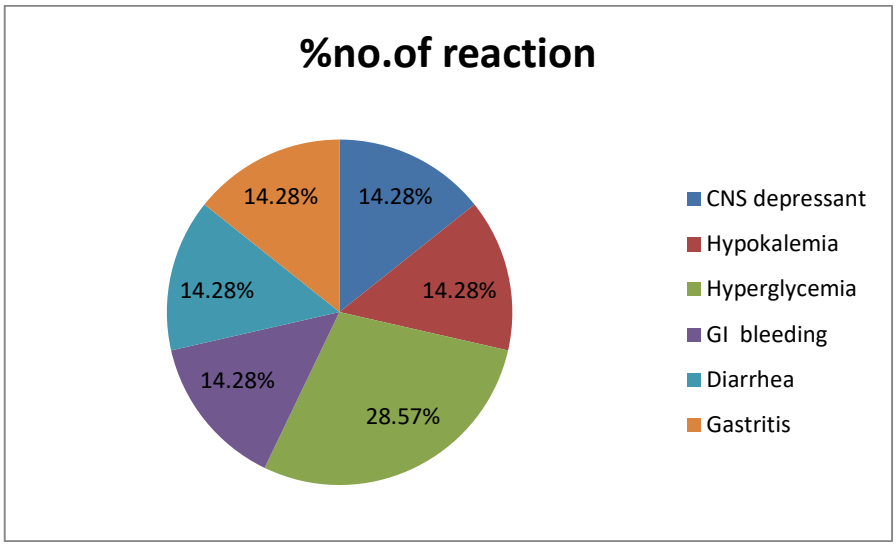

Fig 5: Adverse drug reaction

According to our study 07 adverse drug reactions identified. out of 7 clonazepam induced CNS Depressant 1(14.28%), insulin induced hypokalemia 1(14.28%), steroid induced hyperglycemia 1(14.28%), NSAIDS induced GI bleeding 1(14.28%), antibiotics induced diarrhea 1(14.28%) and NSAIDS induced gastritis 1(14.28%). Results were summarized in fig 5.

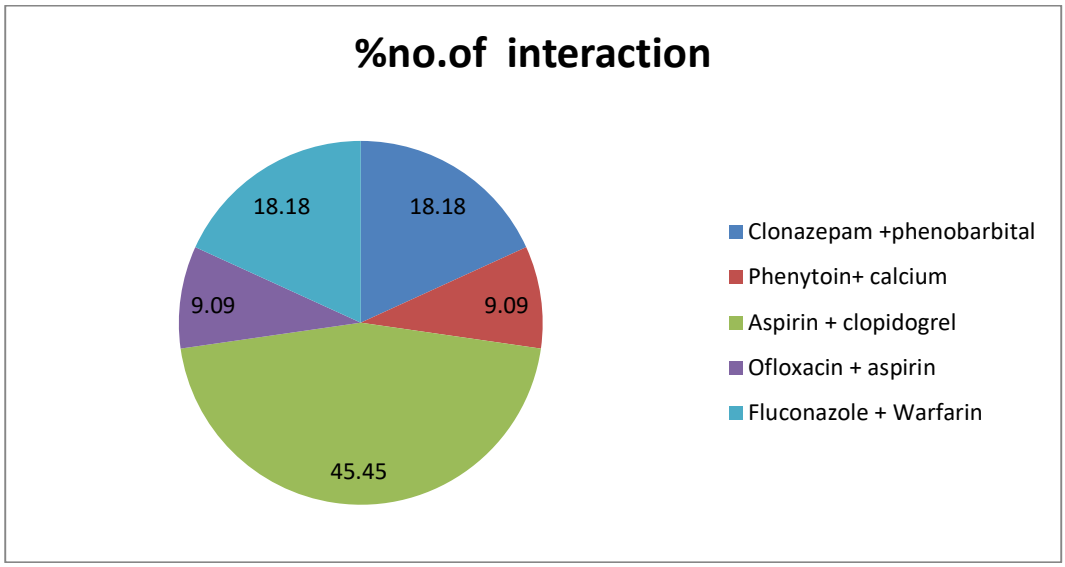

Fig 6: Drug -drug interactions

In our study 11 drug-drug interaction s were identified. clonazepam +phenobarbital were 2(18.18%), phenytoin+ calcium 1(9.09%), aspirin + clopidogrel were 5 (45.45%), ofloxacin + aspirin were 1(9.09%) and fluconazole + warfarin was 2(18.18%) identified. Results were summarized in fig 6.

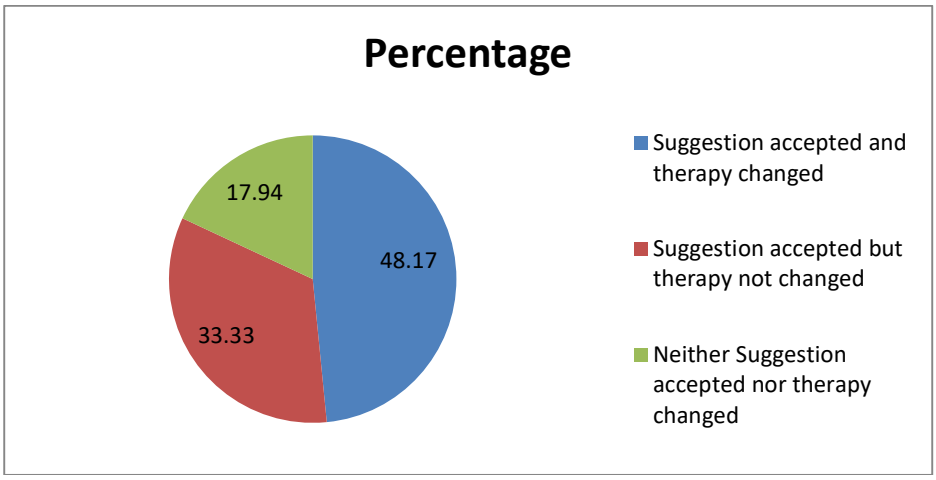

Fig 7: Clinical pharmacist Recommendation status about DRPS

In our study clinical pharmacist recommendation to physicians about the identified drug interventions. out of 39 interventions 19(48.17%) were Suggestion accepted and therapy changed,13(33.33%) were Suggestion accepted but therapy not changed and 17(17.94%) were Neither Suggestion accepted nor therapy changed.results were summarized in fig 7.

Table 3: Time taken for identification of drug interventions

Time	No. of interventions	% No. of interventions
5-10 mins	8	20.51
15-30 mins	11	28.20
30-60 mins	16	41.02
>60 mins	4	10.25

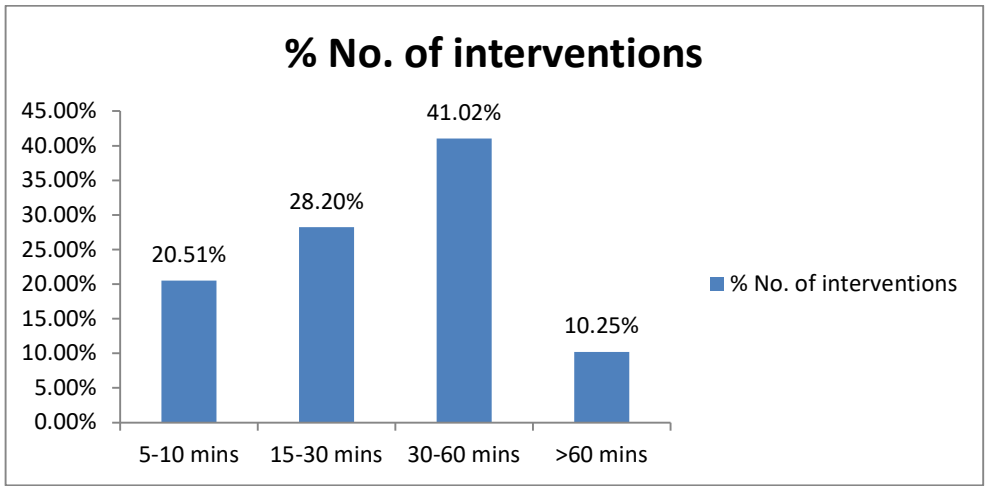

Fig 8: Time taken for identification of drug interventions

In our study we have identified time taken for the identification of drug interventions. In duration of 5-10 mins,we have identified 8(20.51%),15-30 mins 11(28.20%), 30-60mins 16(41.02%) and >60mins 4(10.25%) were identified. results were summarized in fig 8.

Table 4: Drug Interventions Reported To Various Helth Care Professionals

Health care professional	No. of interventions	percentage
Doctors	23	58.97
Nurses	12	30.76
Post graduates	4	10.25

In our study drug interventions submitted to various health care professionals based on the availability.58.97% were doctors, 30.76% were nurses and 10.25% were post graduates. Results were summarized in Table 4.

Table 5: Grade of interventions

Grade of intervention	No. of interventions	percentage
Minor	19	48.71%
Moderate	13	33.33%
major	7	17.94%

According to our study 39 interventions identified. Out of 39 mild were 19(48.71%),moderate were 13(33.33%) and major were 07(17.94%).highest number of interventions identified were minor 48.71%.results were summarized in table 5.

Table 6: Drug interventions feedback from clinicians

Opinion of clinicians	No.of clinicians	percentage
Helpful	9	56.25
Very helpful	6	37.5
No comments	1	6.25

In our study we have taken the feedback from the clinicians in the general medicine ward. Total 16 clinicians gave the feedback.09 were given helpful,06 were given very helpful and 1 were given no comments about the intervenes carried out by clinical pharmacist. Results were summarized in table 6.

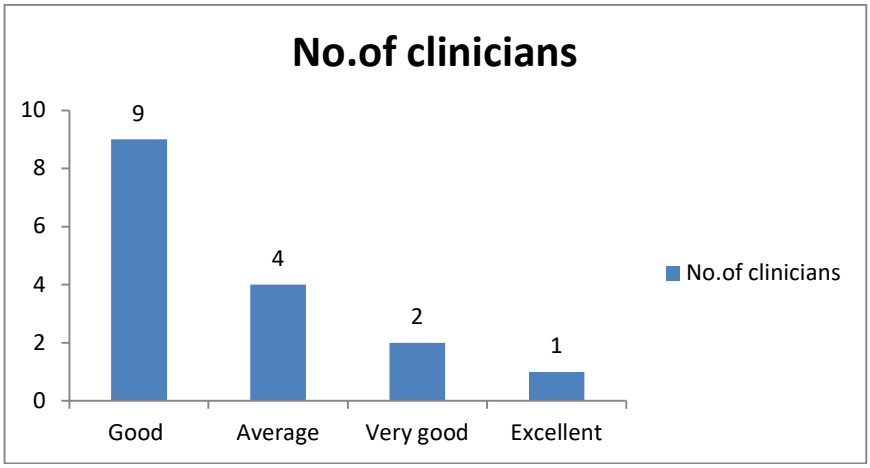

Fig 9: Opinion of clinicians about the interventions provided by clinical pharmacist

Out of 16 clinicians 09(56.25%) were given good about the services provided by clinical pharmacist,04(25%) were given average,02(12.5%) were given very good and 01(6.25%) were given excellent. Results were summarized in fig 9.

Table 7: Other clinical pharmacy services expecting by clinicians from clinical pharmacist

Clinical pharmacy services	No.of clinicians	Percentage
Drug information	6	37.5

Patient counselling	5	31.25
Medication history interview	2	12.5
All the above	3	18.75

In our study 16 clinicians asked us to provide the other clinical pharmacy services. Outof 16 clinicians 06(37.5%) were asked us to provide drug information,05(31.25%) were patient counseling ,02(12.5%) required the medication history interview and 03(18.75%) were asked to provide all the clinical pharmacy services in their unit. Results were summarized in table 7.

DISCUSSIONS

Having highlighted the importance of clinical pharmacist in this study, a multidisciplinary team approach is required to effectively minimize the potential of drug related problems. Furthermore, the high degree of acceptance by prescribers encourages clinical pharmacists to continue their service and to extend it to other wards and departments. The present results point to the establishment of drug related problem reporting system at each hospital and to share data with other hospitals.

Having highlighted the importance of clinical pharmacist in this study, a multidisciplinary team approach is required to effectively minimize the potential of drug related problems. Furthermore, the high degree of acceptance by prescribers encourages clinical pharmacists to continue their service and to extend it to other wards and departments. The present results point to the establishment of drug related problem reporting system at each hospital and to share data with other hospitals.

Among the 143 patients followed during the study period. A total of 39 drug related problems were identified and assessed. There is a marked prevalence of drug related problems in medicine wards. As the patients in medicine units have a range of diseases and are frequently prescribed with large number of drugs. Clinical pharmacy services can produce a high number of interventions in this area which may benefit patients. This study had presented a pattern of findings of drug related problems identified by the clinical pharmacist which suggests that a few types of drugs and errors constitute a substantial proportion of clinical pharmacist interventions. Knowledge of the most frequent DRPs could significantly increase the efficiency of clinical pharmacist interventions. This study demonstrates that the physician's acceptance rate of pharmacist intervention is high. The acceptance rate of clinical pharmacists' interventions was comparable to studies conducted in countries where clinical pharmacy is well developed and indicates the acceptance and recognition of clinical pharmacists as active members of the healthcare team. This suggests that a joint effort between physicians and pharmacist is possible which provides a safer system, improved pharmaceutical care and better resource utilization. Some DRPs could be solved by direct contact with the nurses.

Drug related problems are frequent and may result in reduced quality of life, and even morbidity and mortality. Drug related problems may arise at all stages of the medication process from prescription to follow-up of treatment. Several easily identifiable factors are associated with drug related problems and the studies conducted by various authors concluded that the detection and prevention of drug related problems in the hospitalized patients should be a major concern for healthcare professionals because these problems can affect the patient care and treatment outcomes.Drug therapy has become so difficult that no one professional is expected to optimize the drug therapy and control drug related problems alone. A pro-active rather than a reactive approach on the part of the pharmacists seems prudent for obtaining most benefit. This includes participation of pharmacists in the ward rounds at the stage of ordering and prescribing where all types of drug-related problems, including also potential problems, should be discussed. Therefore, participation and intervention of clinical pharmacists in health care positively influence clinical practice. This prospective study demonstrated a high rate of beneficial outcomes achieved by pharmacist interventions.

CONCLUSION

Clinical pharmacist review of inpatients drug therapy can positively influence the patient outcomes. The addition of clinical pharmacist services in the care of inpatients generally resulted in improved care, with no evidence of harm. This study has proved that there is a need of clinical pharmacist in medicine units, where poly pharmacy is practiced. The result of this study is important not only for the patients care and treatment outcomes but also for the future role of clinical pharmacist services in the medicine units. This proves the fact that clinical pharmacist has an enormous role to play in the healthcare management through quality use of medicines. Having highlighted the importance of clinical pharmacist in this study, a multidisciplinary team approach is required to effectively minimize the potential of drug related problems. Furthermore, the high degree of acceptance by prescribers encourages clinical pharmacists to continue their service and to extend it to other wards and departments. The present results point to the establishment of drug related problem reporting system at each hospital and to share data with other hospitals/healthcare settings. Participation and interventions of clinical

pharmacists in health care positively influence clinical practice. Many studies have monitored interventions in clinical areas to provide quantitative and qualitative data on pharmaceutical input.

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