



## THE ROLE OF CLINICAL PHARMACY IN BENGHAZI HOSPITALS

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### Abstract:

The present study focus on the role of clinical pharmacy in some of the hospital in Benghazi during Dec 2012 to July 2013 .

### Objective of the study :

- 1-Explore the role of pharmacy as a part clinical team.
- 2-Explore the know ledge and attitude of health team about clinical pharmacy.

### Method and materials :

The study was conducted as descriptive “cross sectional“ study about the role of clinical pharmacy practice in Benghazi medical center and hawari hospital . the study included department of medicine , pediatric and gynecology .

### Questionnaires were developed by the researcher as tools for data collection :-

The questionnaire was divided to:-

1. main characters {sex, education level ..ete }
2. information about the clinical pharmacy.

3. information about role clinical pharmacy as understood and accepted by health team in the hospital.
4. information about presence any previous training in the field clinical pharmacy or any another training
5. positive feature for communication between clinical pharmacy and health team
6. composition health team to contribution in treatment of patient in hospital
- 8-information about effect of presence health team including pharmacist in hospital , patient , and community

**Training about data collection :-** For the purpose of reducing the error of data collection researchers has been trained about the method of collection and data entry into computer for analysis including questionnaire distribution and collection , cleaning the data .

**Data analysis :-** The data collected was cleaned and sorting for computer entering using SPSS version 16<sup>th</sup> for statistical analysis using description tables of percentages.

**Result:-**The present study included a total 98 participate out of all the pharmacist and other medical team in Benghazi hospital and hawari hospital it show that 43.9% for age less than 30 year and 74.5% female more than half compared with male.

**Conclusion:-**The most health team focus on training in field clinical pharmacy for all hospital staff specially the medication team and nearly half participants needed for presence clinical pharmacy in departments to help on reduce of percentage the error , nearly half participants who know benefit of medication discussion with clinical pharmacist female more than half compared with male.

**Key word:** clinical , pharmacy, medical team, clinical pharmacy,

# The Role Of Clinical Pharmacy In Benghazi Hospitals

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## 1. Introduction

Pharmacist plays a key role in the treatment of diseases; they advise both doctors and patients about dosage and side effects of medications, that is actually only a small part of a pharmacist job (2).

Hospital pharmacists were mostly engaged in traditional pharmaceutical activities such as dispensing and manufacturing , until the mid-1960. Then, the increasing range and sophistication of medicines available, awareness of medication errors and the widespread use of ward-based prescription charts brought pharmacists out of the dispensary and on to the wards in increasing numbers (1).

Clinical pharmacy practice in the UK developed from the work of two pharmacists. *Graham Calder* pioneered a new role for pharmacists on hospital wards in *Aberdeen*. They initiated the review of medication orders on the wards to ensure safe prescribing. In the same period, the late sixties, John Baker based at Westminster Hospital, introduced the formulary concept and developed the role of the pharmacist as part of the prescribing system, practiced in all healthcare settings, but its main origins lie in the hospital sector(1,3,4,5).

Clinical pharmacy practice is the practice where pharmacists provide patient optimizes medication and promotes health and disease prevention, which is, assist clinicians and benefit patients, including contributing to prescribing decisions, monitoring and modifying drug therapy, counseling patients and involvement in clinical trials practice (6,7).

The aim of the present study was to explore the importance of a pharmacist as a part of the health care team in improving drug use, with emphasis on explore the role of pharmacy as clinical pharmacist and knowledge and attitude of health team about the practice.

## 2. Role of pharmacy

Pharmacist review of medication orders has been shown to prevent errors, consultation has reduced drug costs. However, the main role of pharmacist: (11).

1. Formulary development.
2. Medication order.
3. Medication administration
4. Medication storage.

5. Minimizing adverse drug reaction.
6. Elimination medication error.
7. Managing drug product.
8. Unit dose packaging.
9. Medication information.
10. Optimizing the use of medicines is central to delivery of high quality patient care.
11. Medication error and adverse reaction .
12. Training and education (7, 12).

In 2008, study Jordan show decrease of errors in the presence of a clinical pharmacist by 87% was to avoid occurrence of drug toxicity and side effects of drugs by 12.7%, while therapeutic results improved by 24.1% and increased the utilization rate of the effectiveness of drugs by 21.7% (13).

The presence of a pharmacist on rounds as a full member of the patient care team in a medical ICU was associated with a substantially lower rate of ADEs (Adverse drug events) caused by prescribing errors. Nearly all the changes were readily accepted by physicians 99% (11).

Most of the physicians and nurses acknowledged the pharmacists contribution to improved drug use in the ward. The clinical pharmacy practice improves documentation of drug therapy and estimated patient compliance, decrease the duplicate prescription, & could prevent the risk of other dose and reduce drug cost (9,11,14).

### 3. Material and Method

The study was conducted as a descriptive cross sectional study about clinical pharmacy practice in Benghazi hospitals, from Dec. 2012 to July 2013, included two public hospitals.

Participant were medical team who work as full time, accept to participant in our study, and those who were available at the time of data collection in the hospital.

Questionnaire was constricted as the tool for data collection, and divided to main characters (sex, education level...etc), Information related to clinical pharmacy, role of pharmacist and health team, previous training in the field of clinical pharmacy, communication between pharmacist and health team. For the purpose of reducing the error of data collection and analysis, short trained was conducted. The data collected was cleaned and sorting for computer entering using SPSS version 17<sup>th</sup> statistical package for analysis using description tables of percentages.

### 4. Results

The present study included total of 98 participate out of all the pharmacist and other medical team working in Benghazi medical center and Alhawari hospital, it show that 43.9% age less than 30 year and 74.5% female participate marital status

show that single and married are nearly as same, single 54.1% while married 42.8%. Education level In case university graduate and more represent 82.8% , about 52 % of participant were physician and pharmacist 14.3%, participants according to working hour between (36-42 hr) as 36.7% (table.1).

Looking for the composition of health team for patient medication care consist of (physician, pharmacist and nutrition, nurse ) as 33.7% and 6.1% think health team only physician.

Recognizing the role of clinical pharmacy practice by medical team in the hospitals, 19.4% of participate include medicine information and medicine knowledge but participate who know the role as dispensing of drugs in hospital and those who include knowledge on drugs and attend the morning round as member of the medical team 18.4%.

Responsibility of medication decision show that 38.7% of participants think it is the responsibility of (physician, pharmacist, nursing) while 27.6% for clinical pharmacist only. Prescription discussions with all medication team appear to be accepted by all team members in this study as 90.8.

59.2% of the participant who thought that error is due to give prescription without discussion with the clinical pharmacy, or might be due to unavailability of the clinical pharmacy in the hospital. (table.2)

Benefit of medication discussion with clinical pharmacist 57.1% for safe medication comparing to participate not have known for benefit 15.3%.

Responsibility of patient consulting is understood by 41.9% of participant as pharmacist role.(table.3).

The benefit of the clinical pharmacist as member of the health team on deferent level show that, in hospital level benefit for decision taken about patient medication 35.7%, and 33.6% for education of patient about handling and taken medicine, benefit on patient include side effect and provide necessary medication to patient 29.5% and 28.5% respectively

On community basis almost half participant do not know the benefit of having clinical pharmacy practice this percent might be due to ignore 47.9%

In case of reduce spending on medicine cost 24.4%, of participant admit so and about the contribution in provision of providing high quality of health care for patient is count for 22.4% (table 4 ).

participants who know the intervention of clinical pharmacy, as in case of administration, information about medicine use 76.5% of participant could recognize it as contribution of clinical pharmacy. (table 5).

The Majority think of the need for such training in the field of clinical pharmacy practice 84.7% of the participants (table 6).

Participants do not know the role of clinical pharmacy 9.2%, regarding the knowledge of participant about clinical pharmacy practice, out of all participant 49% physician who know about clinical pharmacy from all medication team who participated in this study .

Considering the knowledge of participant about clinical pharmacy practice, 73,5% know about the practice of clinical pharmacy as university level and more.( table 7)

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**Table (1) The General Characters**

Characters		No.	%	Characters		No.	%
Age (years)	<30	43	43.9	Education Level	Less University	17	17.3
	30 –40	35	35.7		University grad	81	82.7
	> 40	13	7.1	Occupation	Physician	51	52
Sex	Male	25	25.5		Pharmacist	14	14.3
	Female	73	74.5		Nursing	21	21.5
Marital status	Single	53	54.1		Nutrition	7	7.1
	Married	42	42.8		Laboratories	5	5.1
	Divorced	3	3.1				
Working Hours (Hrs)	< 36	24	24.5				
	36 – 40	36	36.7				
	40	24	24.5				
	N.A	14	14.3				

**Table (2) Medical personal and their knowledge about Medical team in hospital**

Health Team Compassion	No.	%
Physician	6	6.1
Physician and pharmacist	2	2.0
Physician and nurses	8	8.2
Physician, pharmacist and nurses	27	27.6
Physician, pharmacist, nurses and nutrition	33	33.7
Physician, pharmacist, nurses and alienist	2	2.0
Physician, pharmacist, nurses, nutrition, alienist	4	4.1
Physician, pharmacist, nurses, laboratories technician and radiologist technician	10	10.2
N.A	6	6.1

Table ( 3 ) Knowledge About Role Of Clinical Pharmacist  
in Hospital

Expected Role	No.	%
Drug distribution, attending round and information about drug	18	18.4
Medicine information and medication knowledge	19	19.4
Medicine distribution inside the hospital	7	7.1
optimizing patient medication, follow up of medication with nurse	29	29.6
Morning round, information about drug, drug distribution, patient medication record with nurses	7	7.1
Knowledge about medication use in hospital	3	3.1
N.A	15	15.3
<b>RESPONSIBILITY MEDICATION DECISION</b>		
Clinical pharmacist	27	27.6
Physician	21	21.4
Physician, pharmacist and nurses	38	38.8
N.A	12	12.2
<b>Need For Prescription Is Discuss With.....</b>		
Physician only	5	5.1
Pharmacist only	1	1
Health team	89	90.8
N.A	3	3.1
<b>PARTICIPATION OF CLINICAL PHARMACIST &amp; MEDICAL ERROR</b>		
route of administration , drug interaction, dose determine and in special antibiotic for pediatric	58	59.2
Error in trade name	5	5.1
Food-drug interaction	2	2
N.A	33	33.7



**Table (4) Participation of clinical pharmacist with the health team for patient care**

<b>Participation</b>	<b>No.</b>	<b>%</b>
<b>Why clinical pharmacy</b>		
Knows more about drug	40	40.8
Knows about drug interaction	29	29.7
Knows about dosage form	5	5.1
Knows about alternative drug	2	2.0
N.A	22	22.4
<b>Benefit Of Medication Discussion With Clinical Pharmacist</b>		
Safe medication	56	57.1
Safe medication time	22	22.4
Efficient result	5	5.2
N.A	15	15.3
<b>Responsibility of patient drug education</b>		
Pharmacist	41	41.8
Physician and pharmacist	27	27.6
The entire medical staff	22	22.4
N.A	8	8.2

**Table (5) Benefits of having clinical pharmacy  
In medical setting**

<b>Benefits</b>	<b>NO</b>	<b>%</b>
<b>For the ( hospital)</b>		
Participate with the medical team in determine curative.	35	35.7
Save time and money	8	8.1
N.A	22	22.5
<b>For ( patient)</b>		
Provide necessary medication to the patient	28	28.6
Decreasing the side effects	29	29.6
Knowledge necessary for medication user	14	14.3
N.A	27	27.5
<b>For community</b>		
Reduce the drugs budget	24	24.5
Contribute in reduce the spread of diseases	5	5.1
Contribute to the provision of high-quality health care	22	22.4
N.A	47	48

**Table ( 5) The clinical pharmacyrole in intervention**

<b>Intervention</b>	<b>No.</b>	<b>%</b>
The duration for the patient in the hospital	3	3.1
Alternative proposal medicines	10	10.2
Information for medication	75	76.5
NA	10	10.2

**Table ( 6 ) The need for training in the field of  
clinical pharmacy**

<b>The need for training program</b>	<b>No.</b>	<b>%</b>
<b>Yes</b>	<b>83</b>	<b>84.7</b>
<b>No</b>	<b>15</b>	<b>15.3</b>

**Table (7) knowledge participant bout clinical  
Pharmacy practice**

<i>Item</i>	<b>KNOW</b>		<b>DO NOT KNOW</b>	
	<b>No.</b>	<b>%</b>	<b>No.</b>	<b>%</b>
<b>Medical Team</b>				
Physician	48	49	3	3.1
Pharmacist	14	14.3	0	0
Nurse	15	15.3	6	6.1
Nutrition	5	5.1	2	2
Laboratory	5	5.1	0	0
<b>Education Level</b>				
Universitygraduate	10	10.2	7	7.1
> University	72	73.5	9	9.2

## 5. Discussion

The present study included total 98 participant out of all the pharmacist and other medical team working in Benghazi medical center and Al hawari hospital, it show that 43.9% for age less than 30 year and 74.5% female.

Participate who have known the role of clinical pharmacy 19.4% including medicine information and medicine knowledge compare with other study

appear that it goes most physician and nurse acknowledge of the role of clinical pharmacy in hospital as improving drug use (9).

Other study show that it is quite important for the benefit of medical care and patient care, as it show in study done in Boston (USA) where 99% of clinical pharmacy intervention was accepted (11), It occur without consultation of pharmacist and discussion as part of medication team 59.2% of participant think it will affect the drug administration, dose intake. where the presence and discussion with clinical pharmacy can be decreased by 87% which is quite effective and better than our condition. This might be due to lack of knowledge about the clinical pharmacy practice in our hospital (13).

Looking at benefits which may result from having discussion between pharmacy and medication team about medication discussion to be taken to treat or reduce the illness 57.1% of participate related to safe medication, which is very important in any hospital, as will as other benefit. this might be considered to emphasis the need for such practice in our hospital. As it is practiced in developed countries, such as U.K (9).

Regarding the intervention of clinical pharmacy, in case administration information on medicine 76.5% which count of  $\frac{3}{4}$  participants and 3.1% in case of duration of patient stay in hospital. This stating the importance of clinical pharmacy present as main member of medication team, for the benefit of patient and hospital, as will play part in education of public about use of drugs. This go along with elsewhere.

The Majority think of the need for training in the field clinical pharmacy and should be concerned on this field in future to improve efficacy of patient medication administration and benefit.

## **6. conclusion**

1. Most health team focused on the need of training program in the field of clinical pharmacy for all hospital staff specially the medication team.
2. Some of the health team who participate in our study know very little about to clinical pharmacy Practice.
3. Nearly half of the medical team have acceptable to include clinical pharmacist with in the medical team.
4. Most participant have recognize the importance of discussion about prescription with clinical pharmacist in the hospital.
5. Nearly half participant have stated that error is due to give prescription without clinical pharmacy consultation and discussion.
6. Nearly half participant recognize the advantage of outcome for prescription presented with clinical pharmacy discussion, this benefit on patient, hospital, and community.

7. More than half participant prefer the intervention of clinical pharmacy practice due to the fact that it will reduce the spending on drug and effective.

### **Recommendation**

1. Establishment of specialized training courses, in the field of clinical pharmacy practice, this program includes all medication care for patient in the hospitals.
1. Contribution of the pharmacist to educate the general community members about drugs use and related topics.
2. Encourage implementation of this practice in all health facilities ( hospitals, poly clinic , health center ).
3. Work on the development of interest in this area to provide efficient health services, through discussion with all health personal.
4. Promote more research work in this field by different specialties, to be able to explore more of the practice of clinical pharmacy within the medical field discussion taken and planning for improving the quality of health benefit to the community.

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