

National Survey of Drug Information Centers Practice: Research and Publication System at Ministry of Health Hospitals in Saudi Arabia

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Abstract

Objective: To explore the National Survey of Drug Information Centers practice in Saudi Arabia: Research and Publications at MOH hospitals. **Methods:** It is a cross-sectional four months national survey of Drug Information Services at MOH. It contained ten domains with 181 questions designed by the authors. It was derived from Internal Pharmaceutical Federation, American Society of Health-System Pharmacists best practice guidelines. This survey was distributed to forty hospital pharmacies that run drug information services. In this study, the domain Research and Publications System was explored and analyzed. It consisted of eight questions about the written policy and procedure and application methods for Research and Publications at MOH system in the drug information centers. All analysis was done through survey monkey system. **Results:** The survey was distributed to 45 of hospitals, the response rate, was 40 (88.88%) hospitals. The highest score of investigational drug services was a written policy and procedure for IDS did not exist in 23 (57.5%) hospitals while only 6 (15%) of hospitals 100% applied the elements. The highest score of Pharmacy Professional Publications Services was the written policy and procedure for Professional Publications Services did not exist in 24 (60%) hospitals while only 6 (15%) of hospitals 100% applied the elements. The highest scores of Pharmacy Ethical and Legal Issues was a Written policy and procedure for Pharmacy Ethical and Legal did not exist in 20 (50%) hospitals while only 7 (17.5%) of hospitals 100% applied the elements. **Conclusion:** There was a weak implementation of Research and Publications system in drug information centers practice. An educating and training of drug information pharmacist on the Research and Publications system is required. In addition to setup up policy and procedures during the implementation of the services.

Key words: Drug Information Centers, Research, Publications, Ministry of Health, Saudi Arabia.

INTRODUCTION

The clinical pharmacy services are well established in several countries across the world. The clinical pharmacy services well documented of reducing morbidity and mortality with cost avoidance in the USA and several countries including Saudi Arabia.^[1-8] One of the clinical pharmacy services, which had an impact on reduction of death and saving the US \$ billion every year was clinical pharmacy research.^[9] The role of the pharmacist in clinical research is well established in the USA through American society of health system pharmacist (ASHP).^[10-11] The role of drug information center in the clinical research is described by ASHP.^[12] A few studies published locally about the role of the pharmacist in research and publications including drug information centers.^[13] Also, it seldom to find investigation about impact and role of clinical pharmacist research field. Also, it is hard to find surveys in the Kingdom of Saudi Arabia or Gulf and Middle East countries discussed clinical research and publications through drug information centers. The objective of the study was to explore national survey of drug information centers practice in Saudi Arabia with emphasis on scientific research and publications.

METHODS

It is a national survey of Drug Information Services at MOH. It contained ten domains; Leadership and Practice Management, Medication Addition and Deletion System, Hospital Formulary System, Medication Safety System, Professional and Public Education. The Evidence-Based Medicine-Therapeutics Guidelines (EBM-TG), Medication-Use Evaluation, Pharmacoeconomics System, Investigational Drug Services (IDS) and Professional Publications Services (PPPS) and Ethical and Legal Issue. It consisted of 181 questions designed by the authors. It drove from Internal Pharmaceutical Federation (FIP), American Society of Health-System

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Pharmacists best practice guidelines, the international standard of Joint Commission of Hospital Accreditation in addition to the local standards of Saudi center of health care accreditation and minimum standards of drug information centers in Saudi Arabia.^[12,14-16] This survey was distributed to forty-five hospital pharmacies that run drug information services. The information of hospitals services was from extensive records of General Administration of pharmaceutical care. In this study, the domain Research and Publications at MOH System was explored and analyzed. It consisted of twenty question about the written policy and procedure for Research and Publications implementations, written policy and procedure for IDS and IDS monitoring system. Intensive analysis was performed for all Investigational Medications. Notification of treating physician of IDS. There is evidence that the patient receives appropriate care for IDS. There is evidence that the medical record has flagged for known of Investigational Drug. Process for improving IDS system. Proof of reporting any severe or unexpected Problems to National Drug Information Center (NDIC) at the MOH and Saudi Food and Drug Authority (SFDA). The written policy and procedure for PPPS. The PPPS Monitoring system is available. Intensive analysis was performed for all Pharmacy Professional Publications. Notification of treating author of PPPS. There is evidence that the Author and Reviewer receive appropriate care for PPPS. There is evidence that the Publications in Know Biomedical Journals. Process for improving PPPS system. Written policy and procedure for Pharmacy Ethical and Legal. Pharmacy Ethical and Legal Monitoring system are available. Intensive analysis was performed for all Pharmacy Ethical and Legal Process for improving Pharmacy Ethical and Legal

system. Written multidisciplinary IPP to outline the relationship between pharmaceutical representatives with DIC staff and healthcare professionals. All analysis was done through survey monkey system.

RESULTS

The survey was distributed to 45 of hospitals, the response rate, was 40 (88.88%) hospitals. The survey distributed to 45 of hospitals, the rate of reply, was 40 (88.88%) hospitals. Of that 35 % large hospitals, 37.5 % medium size hospitals, 17.5 % small size hospitals and 10 % National and Regional Drug Information Centers. OF those, fifteen hospitals only accredited by CIBAHI and eight hospitals only accredited by Joint commission while none of them accredited by ASHP or Canada. The majority of responders were Saudi 38 (95%) and 28 (70%) were male gender and 12 (30%) were female as explored in Table 1. The highest score of investigational drug services was a written policy and procedure for IDS did not exist in 23 (57.5%) hospitals while only 6 (15%) of hospitals 100% applied the elements. The notification of treating physician of IDS available did not exist in 22 (55%) hospitals while only 5 (12.5%) of hospitals 100% applied the elements. Followed by there is evidence that the patient receives appropriate care for IDS did not exist in 22 (55%) hospitals while only 4 (10%) of hospitals 100% applied the elements. Also, the process for improving IDS system available did not exist in 23 (57.5%) hospitals while only 4 (10%) of hospitals 100% applied the elements as explored in Table 2. The highest score of pharmacy professional publications services (PPPS) was a written policy and procedure did not exist

Table 1: Size, ownership and accreditation of respondents national sex accreditation.

Hospital size (Number of staffed beds)	Number of hospitals	Percentages	Saudi	Non-Saudi	Male	Female	CIBAHI	JCI	Canada	ASHP
Small										
<50	1	2.5 %	1 (2.5%)	0 (0%)	1 (2.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
50–99	6	15 %	6 (15%)	0 (0%)	6 (15%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Medium										
100–199	7	17.5 %	7 (17.5 %)	0 (0%)	6 (15%)	1 (2.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
200–299	8	20 %	7 (17.5 %)	1 (2.5%)	5 (12.5%)	3 (7.5%)	5 (25%)	2 (10%)	0 (0%)	0 (0%)
Large										
300–399	7	17.5 %	7 (17.5 %)	0 (0%)	4 (10%)	3 (7.5%)	4 (20%)	2 (10%)	0 (0%)	0 (0%)
400–599	7	17.5 %	6 (15%)	1 (2.5%)	5 (12.5%)	2 (5%)	6 (30%)	4 (20%)	0 (0%)	0 (0%)
More than or equal 600	0	0%	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Very Large										
Medical Cities	0	0%	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
National and Regional Drug Information Centers	4	10 %	4 (10%)	0 (0%)	1 (2.5%)	3 (7.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Missing No-Response	0	0 %	0 (0%)	0 (0%)	0 (0%)	0 (0%)	20 (50%)	20 (50%)	20 (50%)	20 (50%)
Total Respondents	40	100%	38 (95%)	2 (5%)	28 (70%)	12 (30%)	20 (50%)	20 (50%)	20 (50%)	20 (50%)
Ownership										
MOH-Hospitals	40	100%								
Non-MOH Hospitals	0	0%								
Privates	0	0%								

Table 2: Drug Information Centers (DIC) had a process for monitoring, detecting and reporting Investigational Drug Services (IDS).								
Answer Options	1	2	3	4	5	Rating Average	Response Count	
Written policy and procedure for IDS.	23	4	3	4	6	2.15	40	
IDS Monitoring system is available.	24	4	5	2	5	2.00	40	
Intensive analysis is performed for all Investigational Medications.	24	5	4	1	6	2.00	40	
Notification of treating physician of IDS.	22	5	5	3	5	2.10	40	
There is evidence that the patient receives appropriate care for IDS.	22	3	7	3	4	2.08	39	
There is evidence that the medical record has flagged for known of Investigational Drug.	25	3	5	3	4	1.95	40	
Process for improving IDS system.	23	4	6	3	4	2.03	40	
Evidence of reporting any severe or unexpected Problems to NDIC the MOH and SFSA.	26	3	5	3	3	1.85	40	
<i>answered question</i>								40
<i>skipped question</i>								0
Drug Information Centers (DIC) had a process for Pharmacy Professional Publications Services (PPPS)								
Answer Options	1	2	3	4	5	Rating Average	Response Count	
Written policy and procedure for PPPS.	24	2	7	1	6	2.08	40	
PPPS Monitoring system is available.	24	3	7	2	4	1.98	40	
The intensive analysis performed for all Pharmacy Professional Publications.	24	4	6	2	4	1.95	40	
Notification of treating author of PPPS.	25	4	6	2	2	1.77	39	
There is evidence that the Author and Reviewer receive appropriate care for PPPS.	25	4	6	2	3	1.85	40	
There is evidence that the Publications in Know Biomedical Journals.	25	3	6	2	3	1.85	39	
Process for improving PPPS system.	23	4	7	2	4	2.00	40	
<i>answered question</i>								40
<i>skipped question</i>								0
1: DIC is NOT applying the elements 2: DIC is applying 25% of the elements, 3: DIC is applying 50% of the elements 4: DIC is applying 75% of the elements, 5: DIC is applying 100% of the elements								

Table 3: Drug Information Centers (DIC) had a process for Pharmacy Ethical and Legal Issues.								
Answer Options	1	2	3	4	5	Rating Average	Response Count	
Written policy and procedure for Pharmacy Ethical and Legal	20	5	4	4	7	2.33	40	
Pharmacy Ethical and Legal Monitoring system are available.	20	5	7	4	4	2.18	40	
Intensive analysis performed for all Pharmacy Ethical and Legal	23	6	4	6	1	1.90	40	
Process for improving Pharmacy Ethical and Legal system.	22	6	5	5	2	1.98	40	
<i>answered question</i>								40
<i>skipped question</i>								0
The DIC has a system for handling pharmaceutical representative's medical samples.								
Written multidisciplinary IPP to outline the relationship between pharmaceutical representatives with DIC staff and healthcare professionals.	8	5	7	6	14	3.33	40	
<i>answered question</i>								40
<i>skipped question</i>								0
1: DIC is NOT applying the elements, 2: DIC is applying 25% of the elements, 3: DIC is applying 50% of the elements 4: DIC is applying 75% of the elements, 5: DIC is applying 100% of the elements								

in 24 (60%) hospitals while only six (15%) of hospitals 100% applied the elements. Followed by a process for improving PPPS system did not exist in 23 (57.5%) hospitals while only 4 (10%) of hospitals 100% applied the elements. The PPPS Monitoring system is available did not exist in 24 (60%) hospitals while only 4 (10%) of hospitals 100% applied the elements as explored in Table 2. The highest scores of Pharmacy Ethical and Legal Issues was a Written policy and procedure for Pharmacy Ethical and Legal did not exist in 20 (50%) hospitals while only 7 (17.5%) of hospitals 100%

applied the elements. Pharmacy Ethical and Legal Monitoring system are available did not exist in 20 (50%) hospitals while only 4 (10%) of hospitals 100% applied the elements. The score of Written multidisciplinary IPP to outline the relationship between pharmaceutical representatives with DIC staff and health care professionals did not exist in 8 (20%) hospitals while only 14 (35%) of hospitals 100% applied the elements as explored in Table 3.

DISCUSSION

The general administration of Pharmaceutical Care released the pharmacy strategic plan 2010-2020 with a new vision, mission, six goals and more than eighty projects of the pharmacy administration based on the updated organization skeleton.^[17] The pharmacy research and publications administration were new department added to the skeleton. The department takes care all pharmacy research and publications through guiding the pharmacists and pharmacy technician how to the conducted research and makes publication. The department made several courses about investigation and publication with the collaboration of other programs, for instance, drug information centers network and pharmacy planning section at the pharmacy administration. Also, the Research and publication department was the first one at MOH used officially survey monkey system in collecting the data and analysis with like at MOH website. The department was started to publish several manuscripts in bio scientific journal included but not limited to the following; the first publications were about pharmacy strategic plan, pharmacy administration programs, pharmacy practice programs and medication safety program then several articles published in different journals.^[17-20] Also, the pharmacy administration participated in the collaboration of pharmacist with posters presented at the international conference, for instance, *International Society for Pharmacoeconomics and Outcomes Research* (ISPOR). The first posters were in 2014 in Milano Italy; with the cost efficiency of drug information services.^[21] Followed by several posters with some ISPOR conferences. The authors investigated the actual system of research and publication at drug information centers across hospitals in the kingdom of Saudi Arabia. The findings of the survey were weak and both systems were not well established at most drug information centers. The results are lower than a study done by Rosenberg, J M *et al.* conducted in 2009.^[22] That is due to the non-available trained clinical pharmacist in research and publications in MOH hospitals. Other detail findings are difficult to compare with the study because it did not mention them and it hard to find the investigations. The network of drug information centers needs very comprehensive education and training program of research, pharmacy publication and biomedical; ethics including policy and procedures.

CONCLUSION

The research and publication system are not fully implemented in the drug information practice. The drug information pharmacists are highly demanded of research and publications to document the services with impact during the practice. In addition to the research and publication services is very critical to prevent additional economic burden in health system at MOH hospitals in Kingdom of Saudi Arabia.

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CONFLICT OF INTEREST

None

ABBREVIATIONS

KSA: Kingdom of Saudi Arabia; **MOH:** Ministry of Health; **DIC:** Drug Information Centers; **IDS:** Investigational Drug Services; **PPPS:** Professional Publications Services.

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