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National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016-2017: Pharmacy Quality Management and Drug Information Service

Yousef Ahmed Alomi*[1], Saeed Jamaan Alghamdi[2], Radi Abdullah Alattyh[2]

[1]The Past General Manager of General Administration of Pharmaceutical Care and Head, National Clinical pharmacy, and pharmacy practice and Pharmacy R & D Administration, Ministry of Health, Riyadh, KSA.

[2]General Administration of Pharmaceutical Care, Ministry of Health, Riyadh, Saudi Arabia.

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***Correspondence to:**

Dr. Yousef Ahmed Alomi,

The Past General Manager of General Administration of Pharmaceutical Care Head, National Clinical pharmacy, and pharmacy practice Head, Pharmacy R and D Administration Ministry of Health, P.O.BOX 100, Riyadh 11392, Riyadh, SAUDI ARABIA. Riyadh, Saudi Arabia.

Email: yalomi@gmail.com

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Abstract

Objective: To explore the National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia 2016-2017: Pharmacy Quality Management and Drug Information services. **Methods:** It is a 4-months cross-sectional National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia. The study consisted of two parts; the demographic information and the second part contained eighty-five questions divided into nine domains drove from American Society of Health-System Pharmacists (ASHP) and Saudi Pharmaceutical Society (SPS) survey, the international standard of Joint Commission of Hospital Accreditation in addition to the local standards of Saudi Center of healthcare accreditation. The parts were pharmacy management and resources, prescribing and medication control, preparation of medications and dispensing, Computerized and pharmacy technology, clinical pharmacy services, drug monitoring and patient's education, Pharmacy inventory control and stock management, Pharmacy education and training, and Pharmacy total quality management and drug information services. The study discussed and analyzed National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia: Pharmacy Quality Management and Drug Information services. All analysis is done through survey monkey system. **Results:** The survey questionnaire was distributed to 185 of hospitals, the rate of reply, was 105 (56.75%) hospitals. The average scores of pharmacies total quality management were 2.43 (48%) and the program implemented at 3.03 (48.6%). The highest services implemented in quality management was inpatient outpatient dispensing (3.45) inpatient dispensing (3.36) and medication errors preventing and monitoring (3.34). Most of hospital pharmacies had the staff job description 103 (98.10%), Policy and Procedure of Pharmacy 102 (97.14%), and Mission of the Pharmacy 102 (97.14%) and vision of pharmacy 101 (96.19%). While the tiny percentages found were pharmacy annual plan 92 (87.62%), and Patient satisfaction of pharmacy services 90 (85.71%). The highest services of Drug Information Services available at the hospitals were Medications Errors preventing and monitoring (3.53) followed by Respond to Drug Information Questions (3.5) and Participate on Pharmacy and Therapeutic Committee (3.44). **Conclusion:** The half of hospital pharmacies implemented pharmacy total quality management with the variable of drug information services activities. Targeting of education and training on quality management and drug information is required. Also, the incremental human resources of both services are highly recommended to improve pharmacy services offers to the patients at Ministry of Health hospital in Kingdom of Saudi Arabia.

Key word: Pharmacy quality management, Drug information services, Ministry of health, Saudi arabia.

INTRODUCTION

The Hospital pharmacy establishment needs minimum standard. The American society of hospital pharmacist (ASHP) published minimum standard of hospital pharmacy consisted of several elements for instance but not limited to the leadership, drug distribution and control, Human Resources, education, and training, and pharmacy research.[1] The ASHP conducted a survey at every certain period to measure the pharmacy services across united states of America over past years until now. Recently the ASHP is focusing on six domain like prescribing, transcending, dispensing, Administration, drug monitoring, and patient education.[2-5] Every year surveyed about two domains. The Saudi Pharmaceutical Society with the cooperation of ASHP before several years did a survey in Kingdom of Saudi Arabia with same six domains and the pharmacy Quality Management and Drug Information services among them.[6-8] However, the number of hospitals was few and not investigated Ministry of health hospitals. Also, It was hard to find hospital pharmacy practice in Gulf and Middle East counties. The objective of the study was to explore the national survey of hospital pharmacy services at MOH hospital in Saudi Arabia with emphasis on the pharmacy Quality Management and Drug Information services.

METHODS

It is a 4-months cross-sectional National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia. The study consisted of two parts; the demographic information and the second part contained eighty-five

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questions divided into nine domains drove from American Society of Health-System Pharmacists (ASHP) and Saudi Pharmaceutical Society (SPS) survey, the international standard of Joint Commission of Hospital Accreditation in addition to the local standards of Saudi Center of healthcare accreditation.[2,4,6-10] The parts were pharmacy management and resources, prescribing and medication control, preparation of medications and dispensing, Computerized and pharmacy technology, clinical pharmacy services, drug monitoring and patient's education, Pharmacy inventory control and stock management, Pharmacy education and training, and Pharmacy total quality management and drug information services. The 5-point Likert response scale system was used with closed and ended questions. An electronic questionnaire was distributed to the one hundred eighty-five directors of pharmacies at MOH hospitals. The follow-up was taken through email and telephone at every one-two week. All primary care centers, pharmacy administration at MOH or regions excluded from the study. The study discussed and analyzed National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia: Pharmacy Management and resources. All analyses were done through survey monkey system.

RESULTS

The survey questionnaire distributed to 185 of hospitals, the rate of reply, was 105 (56.75%) hospitals. Of that 30.5% of (< 50 beds) hospitals, 50-99), 20.0% of (50-99 beds) hospitals, 15.2% of (100-199 beds) hospitals, 18.1% of (200-299 beds) hospitals, 16.5% of (= or > 300 beds) hospitals. OF those, fifty-one (48.57%) hospitals accredited by CIBAHI, 30 (28.57%) hospitals accredited by Saudi Commission of Health Specialties, and ten (9.52%) hospitals only accredited by Joint Commission. While twenty-two (20.95%) hospitals were not accredited by any organizations and 67 (63.8%) patients were not covered by any health insurance. The majority age of responders was (18-40) years 99 (94.29%) while the nationalities were Saudi 101(96.2%) and Non-Saudi 4 (3.8%). Most of the responders had BSc Pharm 59 (56.19%) and diploma of pharmacy 28 (26.67%) while 95 (96.9%) none certified of Board of Pharmaceutical Specialties. Most of the responders had pharmacy experiences 4-6 years (72.34%), while (40.00%) of responders had 1-3 years pharmacy administration experience, and (73.33%) had no experiences in clinical pharmacy as explored in Table 1, and Table 2. The average scores of pharmacies total quality management were 2.43 (48%) and the program implemented at 3.03 (48.6%). The highest services implemented in quality management was inpatient outpatient dispensing (3.45) inpatient dispensing (3.36) and medication errors preventing and monitoring (3.34) as explored in Table 3. The majority of hospital pharmacies had the staff job description 103 (98.10%), Policy and Procedure of Pharmacy 102 (97.14%), and Mission of the Pharmacy 102 (97.14%) and vision of pharmacy 101 (96.19%). While the tiny percentages found were pharmacy annual plan 92 (87.62%), and

Table 1: Demographic responder qualifications information

Nationality	Response N	Response %	No. of hospital Licensed Beds	Response N	Response %
Saudi	101	96.2%	< 50	32	30.5%
Non-Saudi	4	3.8%	50-99	21	20.0%
Answered question	105		100-199	16	15.2%
Skipped question	0		200-299	19	18.1%
Age	**Response N**	**Response %**	300-399	10	9.5%
18 - 40	99	94.29%	400-499	6	5.7%
40 - 56	5	4.76%	= or > 600	1	1.0%
65+	1	0.95%	Medical City	0	0.0%
Answered question	105		Answered question	105	
Skipped question	0		Skipped question	0	
Academic qualifications	**Response N**	**Response %**	**Board of Pharmaceutical Specialty**	**Response N**	**Response %**
Diploma Pharmacy	28	26.67%	Board Certified Ambulatory Care Pharmacist (BCACP)	1	1.0%
Bsc. Pharm	59	56.19%	Board Certified Critical Care Pharmacist (BCCCP)	1	1.0%
M.S	10	9.52%	Board Certified Nuclear Pharmacist (BCNP)	0	0.0%
Msc. Clinical Pharmacy	0	0.00%	Board Certified Nutrition Support Pharmacist (BCNSP)	0	0.0%
Pharm.D.	10	9.52%	Board Certified Oncology Pharmacist (BCOP)	0	0.0%
Ph.D	2	1.90%	Board Certified Pediatric Pharmacy Specialist (BCPPS)	0	0.0%
MBA	1	0.95%	Board Certified Pharmacotherapy Specialists (BCPS)	1	1.0%
Pharmacy Residency Two years (R1)	2	1.90%	Board Certified Psychiatric Pharmacist (BCPP)	0	0.0%
Pharmacy Residency one year (R2)	0	0.00%	Non	95	96.9%
Fellowship	1	0.95%	Answered question	98	
Other (please specify)	2	1.90%	Skipped question	7	
Answered question	105		Total number of patients covered by health insurance	Response N	Response %
Skipped question	0		Non	67	63.8%
The hospital accreditation	Response N	Response %	< 25%	23	21.9%
CIBAHI	51	48.57%	25-49%	9	8.6%
Joint Commotion USA	10	9.52%	50-74%	1	1.0%
Canada	1	0.95%	75-100% of our patients.	5	4.8%
Saudi Council	30	28.57%	Answered question	105	
None	22	20.95%	Skipped question	0	

Table 2: The responder experiences information

Years of experience	Pharmacy Practice	Percent	Clinical Pharmacy	Percent	Pharmacy Administration	Percent	Response N
0	2	13.33%	11	73.33%	2	13.33%	15
< 1 year	12	38.71%	8	25.81%	11	35.48%	31
1-3	23	57.50%	1	2.50%	16	40.00%	40
4-6	34	72.34%	1	2.13%	12	25.53%	47
> 6 years	43	84.31%	0	0.00%	8	15.69%	51

Table 3: The Services of Quality Assurance and Total Quality Management (TQM)program at hospital pharmacy

Answer Options	Always	Often	Sometimes	Rarely	Never	Rating Average	Percent Average	Response N
The Pharmacy Total Quality Management program existed	13	3	6	14	54	3.03	60.6	90
Inpatient Drug dispensing,	44	10	8	5	29	3.36	67.2	96
Outpatient Drug dispensing,	42	16	12	3	26	3.45	69	99
Repackaging	16	11	13	10	46	2.39	47.8	96
Extemporaneous Preparation	15	7	7	14	53	2.14	42.8	96
I.V. admixture preparation, and	10	6	11	6	62	1.91	38.2	95
Clinical pharmacy services that's including	16	9	12	8	51	2.28	45.6	96
ADR (Identification and Reporting)	22	9	18	7	39	2.66	53.2	95
Ambulatory care clinic participation	9	7	10	14	52	1.99	39.8	92
Medications Errors preventing and monitoring	38	16	14	6	26	3.34	66.8	100
Drug Utilization Evaluation (DUE)	11	8	12	13	53	2.08	41.6	97
Perform clinical research, publishing articles	4	4	12	14	62	1.69	33.8	96
Drug Information services	28	13	13	5	36	2.92	58.4	95
Poison Information services	9	12	19	13	44	2.27	45.4	97
CPR team participation	20	13	11	11	42	2.57	51.4	97
Admission drug histories	16	15	14	13	39	2.55	51	97
Cost reduction project (Pharmacoeconomics)	5	7	11	14	57	1.82	36.4	94
Setting and evaluating therapeutic guidelines	12	12	20	11	41	2.41	48.2	96
Patient Counseling	28	11	15	7	33	2.94	58.8	94
Home Pharmaceutical care	12	4	11	9	58	1.97	39.4	94
Pharmacokinetic consultation	10	9	11	14	52	2.07	41.4	96
Nutrition Support	8	2	13	10	65	1.76	35.2	98
Residency or students Training Other	13	11	13	11	48	2.27	45.4	96
Average						2.43	48.6	

Table 4: TQM of Pharmacy administration elements.

Answer Options	75-100 % completed	50-74%	25-49%	1-24%	We do not have it	Rating Average	Response Count	No. of exited services	% of exited services
Vision of Pharmacy	71	19	6	4	4	4.66	104	101	96.19%
Mission of the Pharmacy	71	15	9	2	3	4.65	100	102	97.14%
Strategic Plan of Pharmacy	41	29	12	8	10	4.39	100	95	90.48%
Annual Plan	37	27	14	6	13	4.37	97	92	87.62%
Policy and Procedure of Pharmacy	66	17	12	5	3	4.55	103	102	97.14%
Job description of Pharmacy staff	71	11	13	3	2	4.60	100	103	98.10%
Job Satisfaction of Pharmacy staff	50	22	12	5	10	4.48	99	95	90.48%
Competency of Pharmacy staff	39	28	14	7	11	4.36	99	94	89.52%
Patient satisfaction of pharmacy services	42	24	12	8	15	4.45	101	90	85.71%
answered question: 105, skipped question: 0									

Table 5: Type of methods used for Pharmacy safety.	
Answer options	**N (%)**
Internal and External Disaster policy and procedures	56 (53.3)
Handling of Pharmaceutical waste	38 (36.2)
Incident reporting	43 (41.0)
Infection Control	42 (49.5)
Prevention of drug theft	31 (29.5)
Workplace hazardous material information system	29 (27.6)
Patient Safety Management	54 (51.4)
Chemotherapy Safety Program	6 (5.7)
We do not have any	19 (18.1)
Other (please specify)	0 (0.0)
answered question: 105, skipped question: 0	

Patient satisfaction of pharmacy services 90 (85.71%) as explored in Table 4. The most method used for pharmacy safety was Internal and External Disaster policy and procedures (53.3%), Patient Safety Management (51.4%), and Infection Control (49.5%) as explored in Table 5. The highest services of Drug Information Services available at the hospitals was Medications Errors preventing and monitoring (3.53) followed by Respond to Drug Information Questions (3.5) and Participate on Pharmacy and Therapeutic Committee (3.44) as explored in Table 6. The of drug information services not covered poisoning services 80 (76.2%) with a limited to modest Poisoning information library. Poisoning information supplied on an ad hoc basis by most staff 87 (82.9%). The majority of hospital pharmacist does not provide Poisoning information services outside the institution 88 (83.8%) and 60 (57.1%) do not have a contract with another institution to obtain Poisoning information services as explored in Table 7.

DISCUSSION

The general administration of pharmaceutical care updated all hospital pharmacies related issues based on the pharmacy strategic plan that is approved by MOH.[11] They updated hospital pharmacy skeleton, updated new vision and mission with updated policy and procedures. The pharmacy workforce updated with five times fold incremental.[12] Several pharmacy administration programs implemented for instance pharmacist job satisfaction, patient pharmacy services satisfaction, pharmacist competencies, and patient bill pharmacy of rights.[13] A new system for incremental salary for directors and supervisors of hospital pharmacy department included directors of pharmacy, inpatient supervisor, outpatient supervisor and drug information center director. Several educational courses conducted about pharmacy leadership skills for directors of hospital pharmacy. The pharmacy administration followed the ASHP best practice standards and Saudi Center of Healthcare Institution Accreditation and required from all hospital pharmacies to get accreditation from them. Task force committee

Table 6: Type of Drug Information Services available at the hospitals											
	Hospital beds size										
Answer Options	**< 50**	**50-99**	**100-199**	**200-299**	**300-399**	**400-499**	**= or > 600**	**Medical City**	**Rating Average**	**Percent Average**	**Response Count**
Respond to Drug Information Questions	2.90	3.15	3.81	4.47	3.40	3.83	4.00	0.00	3.50	70	103
ADR (Identification and Reporting)	2.57	2.63	3.25	3.78	3.10	3.33	3.00	0.00	3.01	60.2	100
Participate on Pharmacy and Therapeutic Committee	2.80	3.30	3.81	4.33	3.10	3.67	5.00	0.00	3.44	68.8	101
Medications Errors preventing and monitoring	3.00	3.33	3.94	4.28	3.30	3.83	4.00	0.00	3.53	70.6	102
Drug Utilization Evaluation (DUE)	2.23	2.10	2.69	2.94	2.60	3.17	2.00	0.00	2.50	50	101
Perform clinical research, publishing articles	1.93	1.60	2.19	2.44	2.30	2.50	3.00	0.00	2.08	41.6	100
Deliver seminar and presentation or Lecture	2.27	2.10	2.75	3.31	2.60	3.50	4.00	0.00	2.61	52.2	99
Provider of Poison Information	2.14	2.00	2.63	3.50	2.70	2.50	3.00	0.00	2.51	50.2	101
Develop update Hospital Formulary	2.59	2.30	3.50	3.67	2.80	3.67	4.00	0.00	2.97	59.4	100
Prepare and Publish Newsletter	1.86	1.74	2.13	2.61	2.60	2.00	2.00	0.00	2.10	42	99
Setting and evaluating therapeutic guidelines	2.24	2.30	2.63	3.50	3.00	2.83	3.00	0.00	2.66	53.2	100
Patient Counseling	2.90	2.95	2.94	4.22	3.20	2.83	3.00	0.00	3.18	63.6	101
Student Training	2.79	2.84	3.50	4.31	3.40	3.50	4.00	0.00	3.29	65.8	96
answered question:105, skipped question: 0											

Table 7: Is there Poisoning information center as a formal division or program of the department?		
Answer Options	**Response Count**	**Response Percent**
Yes	25	23.8%
No	80	76.2%
answered question	105	
skipped question	0	
If Yes: Check the statement that best describes the pharmacy's Poisoning information resources and staffing.		
We have an extensive library of current Poisoning information (or ready access to a medical library) and provide a formal Poisoning information service with at least one full-time-equivalent (FTE)Poisoning information pharmacist position.	7	6.7%
We have a modest to an extensive library of current Poisoning information. Drug information services are provided by designated pharmacists; however, their designated Poisoning information time totals less than 40 hours per week.	11	10.5%
We have a limited to modest Poisoning information library. Poisoning information is supplied on an ad hoc basis by most staff.	87	82.9%
answered question	105	
skipped question	0	
Does the pharmacy provide Poisoning information services outside the institution?		
Yes	17	16.2%
No	88	83.8%
answered question	105	
skipped question	0	
If No: Does the pharmacy contract with another institution to obtain Poisoning information services?		
Yes	45	42.9%
No	60	57.1%
answered question: 105, skipped question: 0		

on Pharmacy quality management implemented. The committee conducted several courses to train pharmacy staff about quality management. The authors investigated the strengths and weakness of hospital pharmacy practice with emphasis on pharmacy management and resources. The finding showed the moderate application of total quality management in pharmacy practice with high percentages at inpatient, outpatient pharmacy, and medication safety. The finding is reasonable due to the hospital accreditation of CIBAHI responders were equal to the number of hospitals implemented pharmacy total quality management. Most of pharmacy practice had implemented quality management were part of pharmacy administration skeleton or existed programs based on new pharmacy plan. Also, the findings of pharmacy administration quality management were useful due to most of the hospitals prepared for local and international accreditations. Most studies did not mention per say about total quality management, and maybe you find some tool and indicators for quality management for instant patient satisfaction, and national quality goals. Most of the findings are either locally or internationally challenging to compare with studies. The findings of drug information services showed an average of drug information activities due to the national drug information services just recently established. The typical activities were answering questions, practicing medication safety and pharmacy and therapeutic committee participation. All those organized activities were normal due the implantations of the following programs included national drug information centers, medication safety program, and pharmacy quality management program.[13-15] The answering question and published pharmacy newsletter findings were lower than what reported by Pedersen CA *et ali*., that is related to low number of drug information pharmacist, and most of physician and nurses were not aware of drug information services at MOH hospitals.[4] The drug utilization evaluation performances were same as what reported by Pedersen CA *et ali*. with medium size hospitals and lower than large size hospitals, that is related to DUE program officially started at MOH hospital. Most of the hospital pharmacies did not involve with poising information services. This finding was acceptable due to the new general administration of poising and chemical forensic had the job of dealing all poisoning information related issues. Other finding is difficult to compare with other studies, not reported previously. This is the first study in Saudi Arabia, or Gulf or Middle countries with every two to three annual survey of pharmacy practice with emphasis on pharmacy quality management and drug information services are highly recommended.

CONCLUSION

This is the first survey of pharmacy practice with emphasis on pharmacy quality management and drug information service in Saudi Arabia or Gulf and Middle East countries. The implementation of quality management and drug information was demanding at some hospitals as part of local and international accreditation. The survey of pharmacy practice is required every two to three years at Ministry of Health hospital in Kingdom of Saudi Arabia.

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CONFLICT OF INTEREST

None

SOURCE OF SUPPORT

None

ABBREVIATION USED

KSA: Kingdom of Saudi Arabia, MOH: Ministry of Health.

REFERENCES

1. Brenner TS, Godwin HN, Gouveia WA, Hodgkins BD, Kent SS, Kienle PC, *et ali*. ASHP guidelines: Minimum standard for pharmacies in hospitals. Am J Heal Pharm. 2013;70(18):1619-30.
2. Pedersen C, Pharm, Schneider P, Scheckelhoff D, Pedersen. ASHP national survey of pharmacy practice in hospital settings: Prescribing and transcribing—2016. Am J Heal Syst Pharm. 2017;74(17):411-27.
3. Pedersen CA, Schneider PJ, Scheckelhoff DJ. ASHP national survey of pharmacy practice in hospital settings: Monitoring and patient education-2015. Am J Heal Pharm. 2016;73(17):1307-30.
4. Pedersen CA, Schneider PJ, Scheckelhoff DJ. ASHP national survey of pharmacy practice in hospital settings: Dispensing and administration - 2014. Am J Heal Pharm. 2015;72(13):1119-37.
5. Pawłowska I, Pawłowski L, Kocić I, Krzyżaniak N. Clinical and conventional pharmacy services in Polish hospitals: a national survey. Int J Clin Pharm. 2016;38(2):271-9.
6. Alsultan MS, Khurshid F, Salamah HJ, Mayet AY, Al-Jedai AH. Hospital pharmacy practice in Saudi Arabia: Prescribing and transcribing in the Riyadh region. Saudi Pharm J. 2012;20(3):203-10.
7. Alsultan MS, Khurshid F, Mayet AY, Al-Jedai AH. Hospital pharmacy practice in Saudi Arabia: Dispensing and administration in the Riyadh region. Saudi Pharm J. 2012;20(4):307-15.
8. Alsultan MS, Mayet AY, Khurshid F, Al-jedai AH. Hospital pharmacy practice in Saudi Arabia: Drug monitoring and patient education in the Riyadh region. Saudi Pharm J. 2013;21(4):361-70.
9. Gray R. Medication management. 2nd Editio. National Hospital Standards. Saudi Central Board for Accreditation of Healthcare Institutions. 2004;218-35.
10. Comprehensive Accreditation Manuals. Joint Commission Resources. 2016.
11. Alomi YA, Alghamdi SJ, Alattyh RA. Strategic Plan of General Administration of Pharmaceutical Care at Ministry of Health in Saudi Arabia 2012 – 2022. J Pharm Pharm Sci. 2015;1(13):1-8.
12. Ahmed Alomi Y, Pharm B, Clin Pharm M. A new Guidelines on Hospital Pharmacy Manpower in Saudi Arabia. J Pharm Pract Community Med. 2016;2(22):30-1.
13. Alomi Y. National Pharmacy Administration Programs. BAOJ Pharm Sci. 2015;1(2):1-2.
14. YA A. National Drug Information Center Program at Ministry of Health in Saudi Arabia. Adv Pharmacoepidemiol Drug Saf. 2016;5(1):1-2.
15. Alomi YA. National Medication Safety Program at Ministry of Health in Saudi Arabia. J Pharmacol Clin Res. 2017;3(2):1-7.

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