National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016: Pharmacy Education and Training

Yousef Ahmed Alomi^{*1}, Saeed Jamaan Alghamdi², Radi Abdullah Alattyh²

¹The 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.

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

Received: 12 October 2017;

Accepted: 27 December 2017

*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 National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia 2016-2017: Pharmacy Education and Training. **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. An electronic questionnaire distributed to the one hundred eighty-five directors of pharmacies at MOH hospitals. The study discussed and analyzed National Survey of Pharmacy Practice at MOH hospitals in Saudi Arabia: the drug monitoring and patient's education. All analysis were done through survey monkey system. **Results:** The survey questionnaire was distributed to 185 hospitals, the rate of reply, was 105 (56.75%). The most hospital pharmacies required a continuing medical education (CME) 62 (59 %), and allowed paid time off for continuing education program was 45 (42.9%). The policy of CME existed in 47 (44.8%) only while not lived in 58 (55.2%) hospital pharmacies. The most affiliated training program was the pharmacy technician student training program 55 (52.4%) with a total number of candidates (258) annually, and pharmacy students training program 43 (41%) with a total number of candidates was (281) annually. A followed by the on the job training of pharmacy technician program 33 (31.4%) with the total of candidates was (206) annually. The majority of Education and Training available for pharmacy staff for pharmacy technician, pharmacists, and director of the pharmacy, while most Education and Training available delivered to Healthcare professional by pharmacy staff were nurses, general physician, and nursing supervisors. The most courses delivered to health care providers by hospital pharmacies were basic medication safety, Cardiopulmonary resuscitation drugs, and an emergency medicine. **Conclusion:** The hospital pharmacies had an adequate education and training services for pharmacists and pharmacy technicians while missed by Pharm D student and post-graduate residency programs. Review of strategies for pharmacy education and training is highly recommended.

Key word: Pharmacy education, Training, Ministry of Health, Saudi Arabia.

INTRODUCTION

The pharmacist after graduated from the school of pharmacy need to register at a government agency to license pharmacy before practicing pharmacy. The concept implemented in several counties overall the world including Kingdom of Saudi Arabia. The license should require renewal with certain period by getting pharmacy exam or contours medical education hour through scientific conferences or courses. The pharmacist needs sixty CME hour for renewal of the license though professional development programs in Saudi Arabia.^[1] Several international investigations explored the pharmacy practice including pharmacy education and training, and others studies investigated pharmacy education and training per say.^[2-5] A few local studies discussed the actual hospital pharmacy education and training but the study, not in-depth detail.^[6] It is hard to find study in the kingdom of Saudi Arabia or Gulf and Middle East counties about hospital pharmacy Education and training. The objective of the study to explore the national survey of hospital pharmacy practice with emphasis on pharmacy education and training in Saudi Arabia.

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 eight 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.^[6-12] 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, 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 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: the drug monitoring and patient's education. All analysis were done through survey monkey system.

RESULTS

The survey questionnaire was distributed to 185 hospitals, the rate of reply was 105 (56.75%). Of that 30.5% of (< 50 beds) hospitals, 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 none accredited by any organizations and 67 (63.8%) patient 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 most hospital pharmacies had a continuing medical education (CME) required 62 (59 %), and allowed paid time off continuing education program was 45 (42.9%). The policy of CME existed in 47 (44.8%) only while not lived in 58 (55.2%) hospital pharmacies. The most affiliated training program was the pharmacy technician student training program 55 (52.4%) with a total number of candidates (258) annually, and pharmacy students training program 43 (41%) with a total number of candidates was (281) annually. A followed by the on the job training of pharmacy technician program 33 (31.4%) with the total of candidates was (206) annually as explored in Table 3 and Table 4. The majority of Education and Training was available for pharmacy staff, pharmacy technician, pharmacists, and director of the pharmacy, while most

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 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	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 no. of patients covered by health insurance	Response N	Response %
Skipped question	0		Non	67	63.8%
The hospital accreditation	Response Count	Response Percent	< 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	
Answered question:105 and skipped question:0					

Table 2: The responder experiences information.

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
Answered question:105 and skipped question: 0							

Table 3: Type of Clinical Continuing-Education.

Answer Options	Response N	Response %
The department for most staff requires routine clinical CE.	62	59.0%
Routine clinical CE is expressly encouraged by the department (e.g., it may be a factor in advancement) but not required.	19	18.1%
The department is neutral toward staff clinical CE. We regard it solely as an individual, personal responsibility and neither require nor encourage it.	24	22.9%
answered question: 105 and skipped question: 0		
Type of the department's policy concerning continuing medical education (CME) for professional staff members		
The department allows paid time off for CE programs.	45	42.9%
The department pays for at least some CE expenses.	16	15.2%
The department does not allow paid time off for CE programs and does not pay for any CE expenses.	44	41.9%
answered question: 105 and skipped question: 0		
The CME policy and procedure for Pharmacy staff		
Yes	47	44.8%
No	58	55.2%
answered question:105 and skipped question: 0		

Table 4: The type of affiliated Training Program at hospital pharmacy.

Answer Options	Hospital bed size								Response %	Response N	No of trainee annually
	< 50	50-99	100-199	200-299	300-399	400-499	= or > 600	Medical City			
Pharmacy Technician students Training Program	14	9	9	12	5	5	1	0	52.4%	55	258
Pharmacy Technician on Job training Program	5	5	5	9	5	3	1	0	31.4%	33	206
Pharmacist Student Training Program	8	3	7	14	4	6	1	0	41.0%	43	281
Pharmacist on Job Training Program	4	2	4	11	4	3	1	0	27.6%	29	149
Pharmacist Residency Program	0	0	0	1	0	1	1	0	2.9%	3	44
Pharm D OR Master Pharmacist Student Training Program	0	0	0	1	0	1	0	0	1.9%	2	62
Pharm D OR Master Pharmacist on Job Training Program	0	1	1	0	0	1	0	0	2.9%	3	39
Pharm D OR Master Residency Program	0	0	0	0	0	0	0	0	0.0%	0	25
None of the above.	17	13	6	3	3	0	0	0	40.0%	42	258
answered question: 105 and skipped question: 0											

Education and Training delivered to Healthcare professional by pharmacy staff was nurses, general physician, and nursing supervisors as explored in Table 5 and Table 6. The most courses delivered to health care providers by hospital pharmacies were basic medication safety, Cardiopulmonary Resuscitation drugs, and an emergency medicine.

DISCUSSION

Pharmacy education and training started at MOH hospital pharmacies in the early 1990s at the most prominent hospital with more than one thousand beds. It was a regular weekly lecture to the pharmacist and pharmacy technician. The pharmacy administration of the hospital organized along the course of practical education and training for eight weeks accredited by MOH. Also, there were training for pharmacist student and pharmacy technician students. In 1998, the hospital pharmacy administration started the clinical pharmacist students and in early 2000s pharmacy practice residency program stated in the hospital with partial accreditation of Saudi commission of health specialties. In 2009, the hospital pharmacy started training first Batch of Pharm. D students from the college of clinical pharmacy of King Faisal University. The General administration of pharmaceutical care from 2002 to 2012 conducted several pharmacy

conferences at different region overall Kingdom of Saudi Arabia. The MOH pharmacy administration started the strategic plan in 2012 with six general goals of pharmacy practice, and one of goal was about education and training of pharmacy Human Resources.^[13] The pharmacy administration conducted several short courses of five day and long courses of 4-5 weeks for several pharmacy practices and clinical pharmacy programs at twenty regions across the Saudi Arabia. It included all type of pharmacists and pharmacy technician. Also, they organized a committee for pharmacy practice residency PGY1 to pervert MOH hospital for accreditation from local and international accreditation pharmacy agencies. One of the essential massive comprehensive programs was on the job training of pharmacy technician for six months with the cooperation of United Kingdom universities and MOH education and training administration. The authors investigated the actual pharmacy practice of education and training at MOH hospitals. The finding showed most of the pharmacy education and training activities existed at fifty percent of hospital pharmacies. Most of the responders required continue education while some encouraging and others neutral for education. It is far away from what Saudi commission regulation requirements for all healthcare professionals of getting contour medical education. Almost the Half of responder paid for staff CE program while forty percent did not

Table 5: The type Education and Training available for pharmacy staff.

Answer Options	Pharmacy Technician	Pharmacist	Clinical Pharmacist	Pharmacist supervisor	Assistant director of pharmacy	Director of Pharmacy	Response N
Weekly lecture CME	43	41	13	11	12	20	66
Short education course 1-5 days	36	33	9	12	12	17	58
Long training session 4-5 weeks	31	28	11	9	5	14	58
General Pharmacist residency program	16	16	8	5	1	6	38
Specialized pharmacist residency program	12	15	6	4	1	7	35
Distance learning pharmacy education	15	20	7	2	3	8	41
answered question:82 and skipped question 23							

Table 6: The type of Education and Training available delivered to Healthcare professional by for pharmacy staff.

Answer Options	Nurse	Nurse Supervisor	General Physician	Specialist Physician	Consultant Physician	Nutritionist	Other health care provider	Total	Response N
Weekly lecture CME	23	13	18	13	6	3	13	89	45
Short education course 1-5 days	20	11	13	9	3	4	10	70	40
Long training session 4-5 weeks	16	8	11	9	4	3	10	61	38
Orientation program	23	17	15	15	5	8	15	98	46
Basic Medication Safety	31	21	21	21	13	9	16	132	48
CPR Medications	23	20	16	12	8	6	12	97	45
IV Medications	28	21	15	14	5	1	10	94	46
Emergency Medications	30	20	20	16	9	4	12	111	47
Distance learning CME education by pharmacy	18	11	16	12	3	1	10	71	38
Total	212	142	145	121	56	39	108		
answered question:75 and skipped question: 30									

so lead most of the staff will not attend the education. The policy of CME existed only at fifty percent of hospital pharmacies lease several challenge and discrepancy of the pharmacy education and training. The most affiliated program from pharmacy technician and pharmacist student. The results are accessible due the MOH had a very comprehensive program for pharmacy technician designed by pharmacy administration and some UK universities. The college of pharmacies send their student either bachelors or Pharm D from training to the most MOH hospital pharmacies, and it is normal to find a higher number of trainees send to pharmacy annually. Pharmacist and pharmacy technician had the most education and training from them as weekly lecture, or short courses of five days while clinical pharmacy residency program not existed at most and number of residents trainee were very few, and lower than what reported by Pedersen, C et.al because most MOH hospitals have not had residency program.^[2] The clinical pharmacist missed most of the weekly lecture, or short courses may be due most of them were as speakers for pharmacist and pharmacy technician weekly lectures. The most education and training program delivered by the pharmacy for healthcare providers was nurses, general physicians, and nursing supervisors and most of the education courses were basic medications safety, emergency medications, orientation program, and CPR medications. It is normal to find those results because of those requirements MOH or local or international accreditation organizations. There is no such investigation done previously to compare the results with either local or international studies and maybe this is the first study with such detail in Saudi Arabia or Gulf and Middle East counties. The pharmacy education and training at MOH hospitals should revise urgently and monitor annually to improve the services at hospital pharmacies.

CONCLUSION

The pharmacy education and training had a poor implementation at MOH hospitals in Kingdom of Saudi Arabia. Targeting to update the CME and training services with an emphasis on residency with a different specialty and Increase number of the trainees is highly recommended to improve the pharmacy education and training at MOH hospitals in Kingdom of Saudi Arabia.

ACKNOWLEDGEMENT

None

CONFLICT OF INTEREST

None

SOURCE OF SUPPORT

None

ABBREVIATION USED

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

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Cite this article as: Alomi YA, Alghamdi SJ, Alattyh RA. National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016: Pharmacy Education and Training. *J Pharm Pract Community Med.* 2018;4(1s):S23-S7.