

National Survey of Clinical Pharmacy Practice in Saudi Arabia-2017-2018: Education and Training

Yousef Ahmed Alomi*,  BSc. Pharm, MSc. Clin Pharm, BCPS, BCNSP, DiBA, CDE, Critical Care Clinical Pharmacists, TPN Clinical Pharmacist, Freelancer Business Planner, Content Editor and Data Analyst, Riyadh, Saudi Arabia.

Fatimah Al-Doughan, PharmD, Lecturer College of Pharmacy, Pharmacy Practice Department King Faisal University, Alahssa, Saudi Arabia.

Sultan Mohammed Al-Jarallah, Head, Ambulatory Care Pharmacy, Oncology and Hematology Clinical Pharmacist, Pharmaceutical Care Department, Security Forces Hospital, Riyadh, Saudi Arabia.

Yasir Ahmed Ibrahim, PharmD, Head of Pharmacy Practice Department Pharmacy Practice Department College of Clinical Pharmacy, King Faisal University P.O.BOX 400, Alahssa, Saudi Arabia.

Adel Mehmas Alragas, Bsc. Pharm Staff Pharmacist Pharmacy Department Medical City King Saud University, Riyadh, Saudi Arabia.

Norah Omar Bin Haidarah, PharmD, Pharmacy Staff Outpatient pharmacy Dr Sulaiman Al-habib Hospital, Riyadh, Saudi Arabia.

Correspondence:

Dr. Yousef Ahmed Alomi, BSc. Pharm, MSc. Clin Pharm, BCPS, BCNSP, DiBA, CDE, Critical Care Clinical Pharmacists, TPN Clinical Pharmacist, Freelancer Business Planner, Content Editor and Data Analyst, Riyadh 11392, Riyadh, Saudi Arabia.

Phone no: +966504417712

E-mail: yalomi@gmail.com

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ABSTRACT

Objectives: To explore the national survey of clinical pharmacy practice in Saudi Arabia during 2017-2018 with emphasis on the education and training available to the pharmacy staff. **Methods:** This is a 4-month cross-sectional national survey on clinical pharmacy practice in Saudi Arabia. The study consisted of two parts: The first part collects demographic information and the second part comprises of 51 questions divided into four domains. The domains are derived from the American Society of Health-System Pharmacists (ASHP), Saudi Pharmaceutical Society (SPS) survey, the international standard of Joint Commission of Hospital Accreditation and from the local standards of Saudi Center of Healthcare Accreditation. The four domains were the clinical pharmacy administration and management, performances and activities, education and training and workload documentation. We used a 5-point Likert response scale system with close- and open-ended questions to obtain responses. The questionnaire was distributed in an electronic format to the 31 directors of pharmacies at hospitals. In this study, we analyzed the national survey of clinical pharmacy practice at hospitals in Saudi Arabia with an emphasis on education and training. All data were obtained through the Survey Monkey system. **Results:** The survey questionnaire distributed to 31 hospitals. The most qualified educational course available for the clinical pharmacy staff was on cardiopulmonary resuscitation (CPR) (74.19%) and on advance cardiac life support (ACLS) (36.67%) and the least available educational course was advance trauma life support (ATLS) (10.71%). Almost all educational courses were provided to the general clinical pharmacist (89) and clinical pharmacist supervisor (22). The majority of the educational courses provided to the healthcare professionals was on short educational course of 1–5 days (85 (47.22%)) followed by basic medication safety (60 (45.45%)) and clinical pharmacy orientation 50 (41.67%), whereas clinical pharmacists provided educational and training courses to healthcare providers mainly for general nurses (108) followed by resident physicians (66) and specialist physicians (53) periodically. **Conclusion:** The clinical pharmacy staff missed some primary educational and training courses. Less than half of the hospitals provided educational courses to healthcare care professionals. We highly recommend bilingual educational and training facilities for clinical pharmacy staff and healthcare professionals in the KSA.

Key words: Clinical, Pharmacy, Practice, Education, Training, Saudi Arabia.

INTRODUCTION

Nowadays, pharmacy profession has shifted from being product-oriented to being patient-oriented. This expansion in the role of pharmacists allows them to practice more clinical functions.¹ This increase in responsibility of pharmacists requires them to be supported by the enhanced clinical education in order to maintain their skills, knowledge and competencies to practice throughout their career and to enhance their performance and career progression.² Thus, there is the need for lifelong learning through continuing education (CE), which is a term that has widely been used among the healthcare professionals. The Accreditation Council for Pharmaceutical Education has defined CE as a structured process of education developed to promote the continuous evolution of pharmacists to claim and augment their professional competencies.³ CE can be seen as workshops, lectures and distance learning courses. Many countries around the world start to implement continuing professional development (CPD). The concept of CPD was endorsed by the FIP in 2002 and defined as the responsibility of the individual pharmacists to maintain, improve and expand their knowledge, attitude and skills to establish competency throughout

their careers.⁴ CPD can be visualized as a circle that connects the reflection stage with the proper planning, execution and evaluation phase.⁵ What makes CPD distinctive is that the individual is responsible for determining his personal learning needs and then plan to achieve those needs. In the end, the individual should evaluate the actions he took in order to meet these goals. CPD usually requires a portfolio to document these steps. CE can be considered as part of the CPD process and CE alone is not sufficient as proven by many studies.⁶⁻⁸ In Saudi Arabia, the Saudi Commission for Health Specialties is the responsible national figure to approve and accredit all CE activities. All healthcare practitioners must achieve a specific number of CE in order to re-license to practice their career in the KSA.⁹ CE mainly used in Saudi Arabia at present.¹⁰ According to the previous study, pharmacists working in Saudi Arabia are interested in topics such as drug interaction, drug use in pregnancy and use of antibiotics.¹¹ Moreover, the pharmacy practice residency program as post-graduate year one founded in 2002 and then extended to post-graduate years one and two with specialized clinical pharmacy residency programs.^{12,13} A recent survey on

pharmacy education and training showed great demand and shortage of education of pharmacy practice residency programs with an emphasis on specialized residency for pharmacists.¹⁴ However, the investigations about education and training of particulate clinical pharmacy specialized not investigated yet in the KSA, Gulf and Middle Eastern countries. Therefore, in this study, we aimed to investigate the national survey of clinical pharmacy practice in Saudi Arabia during 2017-2018 with a focus on education and training.

METHODS

This is a 4-month cross-sectional national survey of clinical pharmacy practice in Saudi Arabia. The study consisted of two parts: The first part collected demographic information and the second part comprised 51 questions divided into four domains. The domains were derived from American Society of Health-System Pharmacists (ASHP) and Saudi Pharmaceutical Society (SPS), the international standard of Joint Commission of Hospital Accreditation and the local standards of Saudi Center of Healthcare Accreditation.^{14,15-32} The domains were clinical pharmacy administration and management, performances and activities, education and training and workload documentation. We used 5-point Likert response scale system with close- and open-ended questions. The questionnaire was distributed in an electronic format to 31 directors of pharmacies at various hospitals in Saudi Arabia. The responders were followed-up via email and telephonic call once after every 1-2 weeks. All primary healthcare centers, regional pharmacy administration at MOH were excluded from the study. In this study, we analyzed the national survey of clinical pharmacy practice at hospitals in Saudi Arabia with an emphasis on performances and activities. All data were analyzed through the Survey Monkey system and analyzed using Statistical Package of Social Sciences (SPSS) version 20. The data were validated using three different methods of validation. More than two authors reviewed the survey independently and the pilot study was undertaken. The survey data were corrected accordingly and the Cronbach's alpha test value was calculated for internal validity. This survey was exempted from the international guidelines of institutional review boards (IRB).³³

RESULTS

The survey questionnaire was distributed to 31 hospitals. Most of the hospitals had 200–299 beds (7 (22.58%)), 300–299 beds (6 (19.35%)), 50–99 beds (5 (16.13%)) and 400–499 beds (5 (16.13%)). Of the total 31 hospitals, 19 (67.86%) hospitals were accredited by the CBAHI, 5 (17.86%) hospitals were accredited by the Saudi Commission of Health Specialties and 4 (14.29%) hospitals were accredited by the Joint Commission. Majority of the hospitals (23 (74.19%)) covered <25% of their patients with a health insurance. Most of the responders had obtained BSc in Pharmacy degree (13 (41.94%)) and Doctor of Pharmacy (9 (29.03%)), whereas all responders (31 (100%)) were not certified by the Board of Pharmaceutical Specialties. Most of the responders had 1–3 years of pharmacy experience 10 (32.26%) 7 (22.58% of the responders had 4–6 years of experience) (Table 1). Most of the educational courses for clinical pharmacy staff was provided on CPR (74.19%) and ACLS (36.67%) and the least-provided educational course was on ATLS (10.71%) (Table 2). Most of the educational courses were provided to the general clinical pharmacist (89) and clinical pharmacist supervisor (22). Most of the education and training provided was for short educational course (1–5 days), which was provided to the general clinical pharmacist and clinical pharmacist supervisor () and (90% and 26.67%, respectively) and the distance learning pharmacy education was provided to the general clinical pharmacists (85%), clinical pharmacist specialist (20%) and clinical pharmacy supervisor (20%). The general and specialized residency program (75% and 68.42%, respectively) were the least-provided

educational program among all types of education and training provided to the general clinical pharmacist. The consultant clinical pharmacist was the least one had received education and training among all levels of clinical pharmacists (Table 3). Most of the types of educational courses provided to the healthcare professionals was short educational course (1–5 days) (47.22%) followed by basic medication safety 60 (45.45%) and clinical pharmacy orientation (41.67%), whereas the most educational and training delivered to healthcare providers by clinical pharmacist was general nurses (108) followed by resident physician (66) and specialist physician (53) (Table 4). The Cronbach's alpha test value was 0.765.

DISCUSSION

CE and training are essential not only for pharmacists but for all healthcare practitioners to enhance their competencies. CE system is designed to help the pharmacists and all healthcare providers in updating their knowledge and skills and maintain their career progression. However, for this system to be successful, it requires pharmacists' participation in the program.³⁴ In this study, the response rate was meager. CPR course was the most attended education course by the pharmacists. This was not surprising as this course is mandatory for the obtaining a relicense in Saudi Arabia. Participated pharmacists preferred short courses over long ones; however, participants from another study were more likely to register for 1 day course compared to the multi-day course.⁵ Specialist and consultant clinical pharmacists were more interested in distance learning pharmacy education and specialized pharmacist's residency program despite the poor availabilities at local setting.¹⁴ As documented, personal desire to learn is one of the critical factors that influence the pharmacists to progress in their career.³⁵ The general clinical pharmacists were in need of residency programs which their hospitals do not offer to the pharmacists.¹⁴ Healthcare participants were motivated to participate in basic medication safety, clinical pharmacy orientation followed by ER medications delivered by pharmacy staff. About the topics that pharmacists in Saudi Arabia were interested in engaging in, as shown by a previous study were medication during pregnancy, drug interaction and the use of antibiotics.⁴ Another study conducted in Qatar showed that pharmacists were interested in therapeutic topics followed by clinical skills and management topics.⁵ Moreover, a previous study reported that pharmacists were more interested in participating in congresses and symposia because they preferred face-to-face learning.³⁴ In this study, we did not investigate the factors that may influence the poor participation by the pharmacists, but many factors that hesitate them from participating in the CE courses⁵ for example, high costs, little time, lack of motivation, negative attitude and technical difficulties.^{35,36} Other studies have stated that the CE system is limited because of the lack of follow-up and implementation of new concepts at the workplace.^{6,37} Another study reported that many participants consider teaching the students what they learned is the most significant way to benefit from the CE courses.³ In order to encourage pharmacists to engage with the CE system, the selected topics should match the pharmacists' needs and preferences, offering a reduced fee for enrolling in multiple webinars, or offering multiple related webinars instead of individualized ones. In addition, offering webinars educational courses during working time was suggestion for future CE courses.³⁸

CONCLUSION

The attitude of clinical pharmacy staff toward some of the primary education and training courses is inadequate. There is a need to study the factors that discourage the pharmacists from participating in these courses to eliminate them. Hospitals should conduct more educational courses for the healthcare practitioners.

Table 1: Demographic information regarding responder qualifications.

No. of hospital licensed	Response N	Response %	Response N	Response %	Response N
< 50	3	9.68%	Diploma. Pharmacy	3	9.68%
50-99	5	16.13%	Bsc. Pharmacy	13	41.94%
100-199	2	6.45%	Master of Science	7	22.58%
200-299	7	22.58%	Doctor of Pharmacy	9	29.03%
300-399	6	19.35%	Two years Residency (R1)	0	0.00%
400-499	5	16.13%	Three years Residency (R2)	1	3.23%
= or > 600	1	3.23%	Ph. D	1	3.23%
Medical City	2	6.45%	M.B.A.	0	0.00%
Answered question	31		Answered question	31	0.95%
Skipped question	0		Skipped question	0	1.90%
The hospital accreditation	Response N	Response %	Board of Pharmaceutical Specialty	Response N	Response %
CBAHI	19	67.86%	Board Certified Ambulatory Care Pharmacist	0	0.00%
Joint Commotion USA	4	14.29%	Board Certified Critical Care Pharmacist	0	0.00%
Canada	0	0.00%	Board Certified Nuclear Pharmacist	0	0.00%
Saudi Council	5	17.86%	Board Certified Nutrition Support Pharmacist	0	0.00%
None	0	00.00%	Board Certified Oncology Pharmacist	0	0.00%
Answered question:	28		Board Certified Pediatric Pharmacy Specialist	0	0.00%
skipped	3		Board Certified Pharmacotherapy Specialists	0	0.00%
The patients covered by health issuance			Board Certified Psychiatric Pharmacist	0	0.00%
< 25%	23	74.19%	Non	31	100.00%
25-50%	3	9.68%	Answered question	31	
51-75%	3	9.68%	Skipped question	0	
76-100% of our patients.	2	6.45%	Years of Experiences in Clinical Pharmacy	Response N	Response %
Answered	31		< 1	3	9.68%
Skipped	0		1 – 3	10	32.26%
			4-6	7	22.58%
			>6	3	9.68%
Answered question				31	
Skipped question				0	

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

ASHP: American Society of Health-System Pharmacists; **SPS:** Saudi Pharmaceutical Society; **ADRs:** adverse drug reactions; **ACLS:** advance cardiac life support; **ATLS:** Advance trauma life support; **CPD:** Continuing professional development; **CE:** continuing education; **CPR:**

Table 2: The type education and training available for clinical pharmacy staff.

Answer Options	Pharmacy Technician		Pharmacist		Clinical Pharmacist		Emergency Pharmacy supervisor		None of them		Percent existed	Response N
Cardiopulmonary Resuscitation (CPR)	15	48.39%	18	58.06%	19	61.29%	7	22.58%	8	25.81%	74.19%	31
Advance Cardiac Life Support (ACLS)	6	20.00%	6	20.00%	8	26.67%	3	10.00%	19	63.33%	36.67%	30
Pediatrics Cardiopulmonary Resuscitation (PCLS)	4	14.29%	4	14.29%	3	10.71%	2	7.14%	22	78.57%	21.43%	28
Pediatrics Advance Life Support (PALS)	4	14.29%	4	14.29%	3	10.71%	2	7.14%	22	78.57%	21.43%	28
Advance Trauma Life Support (ATLS)	1	3.57%	3	10.71%	2	7.14%	2	7.14%	25	89.29%	10.71%	28
	30		35		35		16		96			

answered question:31 and skipped question 0

Table 3: The type education and training available for clinical pharmacy staff.

Answer Options	General Clinical Pharmacist		Specialist Clinical Pharmacist		Consultant Clinical pharmacist		Clinical pharmacist supervisor		Response N
Short education course 1-5 days	27	90.00%	4	13.33%	1	3.33%	8	26.67%	30
Long training session 4-5 weeks	17	77.27%	2	9.09%	0	0.00%	4	18.18%	22
General Pharmacist residency program	15	75.00%	2	10.00%	0	0.00%	4	20.00%	20
Specialized pharmacist residency program	13	68.42%	3	15.79%	1	5.26%	2	10.53%	19
Distance learning pharmacy education	17	85.00%	4	20.00%	2	10.00%	4	20.00%	20
	89		15		4		22		

answered question: 31 and skipped question 0

Table 4: The type of education and training available delivered to healthcare professional by for pharmacy staff.

Answer Options	General Nurses	Resident physician	Specialist physician	Consultant physician	Specialist nurses	Nurses supervisor	Total	Percent
Long training course 4-5 weeks	12	6	4	5	4	3	34	29.82%
CRP Medications	15	7	6	4	4	6	42	31.82%
ER Medications	16	10	8	5	7	8	54	40.91%
Distance learning Medication education	11	8	5	2	2	4	32	31.37%
Basic medication safety	18	11	8	6	8	9	60	45.45%
Clinical pharmacy orientation	14	10	9	5	6	6	50	41.67%
Total	108	66	53	37	42	51	357	

answered question: 29 and skipped question: 2

Cardiopulmonary resuscitation; **FIP**: International Pharmaceutical Federation; **FDA**: US Food and Drug Administration; **IRB**: Institutional review board; **SFDA**: Saudi Food and Drug Authority; **MOH**: Ministry of Health; **INDs**: investigational new drugs; **NMEs**: New molecular entities; **BSC**: Bachelor of Science; **SPSS**: Statistical Package for the Social Sciences.

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