

KSA-Self Assessments of Pharmacy Safety and Occupational Health

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ABSTRACT

Objectives: To explore the KSA-Self Assessments of Pharmacy Safety and Occupational Health as a new initiative project in Saudi Arabia. **Methods:** It was a narrative review of KSA-Self Assessments of Pharmacy Safety and Occupational Health. Literature searched various databases, including PubMed, Medline, and Google Scholar. The search period is from the 1960s until 06 December 2023. The term is in full-text English and includes Case Reports, Classical Articles, Clinical Conferences, Clinical Studies, Clinical Trials, Evaluation Studies, Government Publications, Guidelines, meta-analyses, Observational Studies, Practice Guidelines, Randomized Controlled Trials, Reviews, Systematic Reviews, with Humans subject. All hospital or community pharmacy services are included in a search term. Besides, the National and international guidelines of general occupational safety and health in hospital practice. The committee of pharmacy accounting policy and procedures formulated and consisted of various expert members. That includes clinical pharmacists, occupational safety specialists, Crisis and Disaster Management, and fire safety experts. The self-assessment is based on guidelines based on occupational safety and health societies' regulations. In addition to Institution Safe Medication Practice (ISMP) criteria and KSA-Self assessment of pain management drug safety. The policy draft by one member by the second member was reviewed and corrected. The third revision was by the occupational safety specialists. The topic emphasizes self-assessments of Pharmacy Safety and Occupational Health. **Results:** The KSA Self Assessments of Pharmacy Safety and Occupational Health consisted of nine items. That has included Characteristics of Pharmacy Services, Pharmacy and warehouse building, Fire Safety, Crises and Disaster Management. Besides the Medication Information, Pharmacy Safety Practice, Patient/Family Education, Pharmacy staff competency and training, and Total Quality and Risk Management. Each element had various closed-ended questions scored using the 5-point Likert response scale system. **Conclusion:** The KSA-Self Assessments of Pharmacy Safety and Occupational Health policy is a new initiative project in Saudi Arabia. The KSA-Self Assessments of Pharmacy Safety and Occupational Health policy improves the Pharmacy Safety and Occupational Health system foundations. In addition, it encourages pharmacists to adhere to Pharmacy Safety and Occupational Health regulations in different places in the public and healthcare organizations. Therefore, the KSA-Self Assessments of Pharmacy Safety and Occupational Health policy is highly recommended for pharmacy career professionals in Saudi Arabia.

Keywords: Occupational health, Self-assessment, Pharmacy, Safety, Saudi Arabia.

INTRODUCTION

The pharmacy services had various departments and programs such as ambulatory care, inpatient pharmacy, and IV admixture services.^[1-3] Besides, medication safety programs, anticoagulation programs, and pain management programs.^[4-8] Each service had various requirements for implementation to provide complete services to particular patients. There are multiple approaches to evaluating or assessing the services, such as total quality management standards and self-assessment tools.^[9,10] One of the famous institutions, the Institution of Safe Medicating Practice (ISMP), released various tools to self-assess several aspects, such as medication safety at hospitals and community pharmacies.^[11,12] Besides, some publications, such as local literature, discussed the medical safety of pain management self-assessment.^[13]

Those tools are essential to determine a baseline of the actual situation and explore the weaknesses and strengths of the system.^[14,15] One of the programs critical to determining self-assessment was occupational safety and health in pharmacy practice, which is not addressed in the literature. Occupational safety and health are required to implement international and local elements such as fire safety and environment, pharmacy crisis and disaster management, material safety data sheets, and education and training in occupational safety.^[10,16,17] Each section must make a self-assessment to ensure compliance with occupational safety and health laws and standards. It is rarely found in the self-assessment of occupational safety in pharmacy practice. The authors are unfamiliar with previous research on this topic. The current review aims to declare pharmacy occupational safety and health self-assessment.

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METHODS

It is a narrative review of pharmacy security and safety. The literature search was performed using PubMed, Medline, and Google Scholar databases about specific pharmacy practice accounting and financial system topics. The search period was from the 1960s until 15 May 2023. The searched terms were in full-text English. They included Full text, Case Reports, Classical Articles, Clinical Conferences, Clinical Studies, Clinical Trials, Evaluation Studies, Government Publications, Guidelines, meta-analyses, Observational Studies, Practice Guidelines, Randomized Controlled Trials, Reviews, Systematic Reviews, Humans, in the English language. The pharmacy services included inpatient, outpatient, or ambulatory care pharmacy, satellite pharmacy, extemporaneous preparation, repackaging units, pharmacy store, drug information center, and clinical pharmacy services. Moreover, the national and international guidelines of general accounting and financial practice emphasizing pharmacy and healthcare settings were used as guides for writing the review. That includes guidelines from the Ministry of Building,^[13] the Ministry of Human Resources and Social Development,^[14] the Ministry of Interior (Civil of Defense),^[15-18] and the General Organization for Social Insurance,^[18,19] The Ministry of Labor (USA), National Fire Protection Association (USA),^[20-25] Occupational Safety and Health Administration (USA),^[26-29] The National Institute for Occupational Safety and Health (USA), and the Institution of Occupational Safety and Health (UK). Besides some local and international quality management standards from CBAHI and Joint Commission with emphasis on Facility and Management Safety (FMS).^[30,31] The pharmacy accounting policy and procedures committee was formulated and consisted of various expert members. That includes clinical pharmacists, occupational safety specialists, Crisis and Disaster Management, and fire safety experts. Self-assessment is based on guidelines based on occupational safety and health societies' regulations, Institution Safe Medication Practice (ISMP) criteria, and KSA-Self pain management drug safety literature assessment. The policy draft by one member by the second member was reviewed and corrected. The Standards for Reporting Qualitative Research guided the reporting of the results of this review.^[32]

The search term methodology was done as follows:

Search: (pharmacy[Title/Abstract]) AND (occupational safety[Title/Abstract]) Filters: Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical

Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English

("pharmacy"[Title/Abstract] AND "occupational safety"[Title/Abstract]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (ff[Filter]) AND (humans[Filter]) AND (english[Filter]))

Search: (pharmacy[Text Word]) AND (occupational safety[Text Word]) Filters: Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English

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Search: (pharmacy[MeSH Terms]) AND (occupational safety[MeSH Terms]) Filters: Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English

((("pharmacy"[MeSH Terms] OR "pharmacies"[MeSH Terms]) AND "occupational health"[MeSH Terms]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR

systematicreview[Filter]) AND (ff[Filter]) AND (humans[Filter]) AND (english[Filter]))

Translations

pharmacy[MeSH Terms]: "pharmacy"[MeSH Terms] OR "pharmacies"[MeSH Terms]

occupational safety[MeSH Terms]: "occupational health"[MeSH Terms]

Search: (pharmacist[Title/Abstract]) AND (occupational safety[Title/Abstract]) Filters: Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English

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("pharmacists"[MeSH Terms] AND "occupational health"[MeSH Terms]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Translations

pharmacist[MeSH Terms]:
"pharmacists"[MeSH Terms]

occupational safety[MeSH Terms]:
"occupational health"[MeSH Terms]

Search: (**pharmaceutical care**[Title/Abstract]) AND (**occupational safety**[Title/Abstract]) Filters: **Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English**

("pharmaceutical care"[Title/Abstract] AND "occupational safety"[Title/Abstract]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

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("pharmaceutical services"[MeSH Terms] AND "occupational health"[MeSH Terms]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Translations

pharmaceutical care[MeSH Terms]:
"pharmaceutical services"[MeSH Terms]

occupational safety[MeSH Terms]:
"occupational health"[MeSH Terms]

Search: (**pharmaceutical**[Title/Abstract]) AND (**occupational safety**[Title/Abstract]) Filters: **Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English**

("pharmaceutical"[Title/Abstract] AND "occupational safety"[Title/Abstract]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Search: (**pharmaceutical**[Text Word]) AND (**occupational safety**[Text Word]) Filters: **Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English**

("pharmaceutical"[Text Word] AND "occupational safety"[Text Word]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Search: (**pharmaceutical**[MeSH Terms]) AND (**occupational safety**[MeSH Terms]) Filters: **Full text, Case Reports, Classical Article, Clinical Conference, Clinical Study, Clinical Trial, Evaluation Study, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, Systematic Review, Humans, English**

("pharmaceutical preparations"[MeSH Terms] AND "occupational health"[MeSH Terms]) AND ((casereports[Filter] OR classicalarticle[Filter] OR clinicalconference[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR evaluationstudy[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR randomizedcontrolledtrial[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Translations

pharmaceutical[MeSH Terms]:
"pharmaceutical preparations"[MeSH Terms]

occupational safety[MeSH Terms]:
"occupational health"[MeSH Terms]

Search: ((**pharmacy**[Title/Abstract]) AND (**self-assessment** [Title/Abstract])) AND (**occupational safety**[Title/Abstract]) Filters: **Full text, Case Reports, Clinical Study, Clinical Trial, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Review, Systematic Review, Humans, English**

("pharmacy"[Title/Abstract] AND "self assessment"[Title/Abstract] AND "occupational safety"[Title/Abstract]) AND ((casereports[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

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Translations

pharmacy[MeSH Terms]: "pharmacy"[MeSH Terms] OR "pharmacies"[MeSH Terms]

self assessment[MeSH Terms]: "self-assessment"[MeSH Terms]

occupational safety[MeSH Terms]: "occupational health"[MeSH Terms]

Search: ((**pharmaceutical**[Title/Abstract]) AND (**self-assessment** [Title/Abstract])) AND (**occupational safety**[Title/Abstract]) Filters: **Full text, Case Reports, Clinical Study, Clinical Trial, Government Publication, Guideline, Meta-Analysis, Observational Study, Practice Guideline, Review, Systematic Review, Humans, English**

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("pharmaceutical"[Text Word] AND "self assessment"[Text Word] AND "occupational safety"[Text Word]) AND ((casereports[Filter] OR clinicalstudy[Filter] OR clinicaltrial[Filter] OR governmentpublication[Filter] OR guideline[Filter] OR meta-analysis[Filter] OR observationalstudy[Filter] OR practiceguideline[Filter] OR review[Filter] OR systematicreview[Filter]) AND (fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

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Translations

pharmaceutical[MeSH Terms]: "pharmaceutical preparations"[MeSH Terms]

self assessment[MeSH Terms]: "self-assessment"[MeSH Terms]

occupational safety[MeSH Terms]: "occupational health"[MeSH Terms]

RESULTS AND DISCUSSION

The pharmacy services suggested following policies and procedures to implement KSA-Self assessment of pharmacy occupational safety and health.

1. The pharmacy leader formulated the pharmacy occupational safety team, which consisted of a total quality management pharmacist, medication safety pharmacist, occupational safety pharmacist, pharmacist supervisor, and member of the occupational safety and health department.
2. The team uses KSA-Self assessment pharmacy occupational safety and health criteria to evaluate the pharmacy department quarterly, semi-annually, or annually.
3. The valuation score from 1-5 should be done according to instructions with self-assessment
4. The final score within (75-100%) will be accepted, (60-74%) will be a risk level, and less than 60% will need improvement levels.
5. The pharmacy occupational safety team should discuss the results and set the solutions and recommendations.
6. The pharmacy occupational safety team should make the risk assessment for pharmacy occupational safety and health with current results.
7. The final should be reported to pharmacy administration and copied to the occupational safety and health department.
8. Repeat the self-amassment according to the results at least annually and more frequently when needed.

CONCLUSION

The KSA-Self Assessments of Pharmacy Safety and Occupational Health is a new initiative for the overall performance of pharmacy occupational safety services. It is a significant equipment for the statistical administration of occupational injury prevention and works in pharmacy practice. It consisted of nine components: Characteristics of Pharmacy Services, Pharmacy and warehouse building, Fire Safety, and Crises and Disaster Management. Besides the Medication Information, Pharmacy Safety Practice, Patient/Family Education, Pharmacy staff competency and training, and Total Quality and Risk Management. The method can assess the pharmacy organization gap problems analysis and improve pharmacy occupational safety culture. The KSA-Self Assessments of Pharmacy Safety and Occupational Health are especially cautioned to put into effect in pharmacy occupational safety operation exercises in Saudi Arabia.

Part 1: Characteristics of Pharmacy Services.

No	Statement	Comments
1.	Name of institution	
2.	Type of Pharmacy Services	<input type="radio"/> Hospital Pharmacy <input type="radio"/> Community Pharmacy
3.	Location	<input type="radio"/> North <input type="radio"/> South <input type="radio"/> East <input type="radio"/> West
4.	City	<input type="radio"/> Riyadh <input type="radio"/> Makkah <input type="radio"/> Jeddah <input type="radio"/> Taif <input type="radio"/> Madina <input type="radio"/> Quseem <input type="radio"/> East Province <input type="radio"/> Alhassa <input type="radio"/> Heferalbatin <input type="radio"/> Aseer <input type="radio"/> Bisha <input type="radio"/> Tabuk <input type="radio"/> Hail <input type="radio"/> North border <input type="radio"/> Jazan <input type="radio"/> Najran <input type="radio"/> Albaha <input type="radio"/> Aljouf <input type="radio"/> Alqurayat <input type="radio"/> Qunfeth
5.	Accreditation status	<input type="radio"/> CBAHI <input type="radio"/> SCFHS <input type="radio"/> JCI <input type="radio"/> Canada
6.	Pharmacy human resources	<input type="radio"/> No of pharmacy technicians: <input type="radio"/> No of Pharmacists: <input type="radio"/> No of the clinical pharmacist: <input type="radio"/> No of non-healthcare professionals:

Part 2: Pharmacy and Occupational Safety Assessment.*

No	Statement	NA	1	2	3	4	5	Comments
1	Pharmacy and warehouse building							
	The pharmacy follows and implements the Saudi Building Codes.							
	The pharmacy or drug store's location meets the relevant law and regulation requirements.							
	The Pharmacy building is made of non-combustible materials and resists fire for no less than (two hours).							
	The area of the drug warehouse must not exceed (1000) square meters.							
	The pharmacy and warehouse location is established over ground (not not-basement) or near dangerous places (stores of chemical and radioactive materials)							
	The pharmacy's electrical installations, extensions, and all electrical equipment must comply with the Saudi Arabian Standards and Metrology Organization.							
	Distinctive instruction signs that indicate the location of the leading electrical and sub-keys, clarifying their scope and use.							
	Backup electrical equipment is provided in pharmacies and warehouses for at least two hours in emergencies.							
	There is periodic maintenance for all extensions, connections, and electrical appliances.							
	The locations of the external air intakes for the air conditioner are not near sources at risk of fire.							
	The main ducts of the air conditioner are through vertical or horizontal corridors made of non-combustible materials as a fire-retardant unit, with appropriate openings with fire-retardant doors to facilitate maintenance procedures.							
	The ducts of the central ventilation and air conditioning system were equipped with smoke detectors that automatically turned off the entire device when smoke was detected and, at the same time, operated suction fans to expel the smoke outside.							
2	Fire Safety							
	The occupational safety pharmacy section must submit a complete plan for safety and fire-fighting equipment and equipment to the competent civil defense department for review and approval of the appropriate equipment after inspecting the site.							

	There are instructions and posts on patient safety when falling.								
	There are instructions and posts on patient safety of associated infections.								
	The pharmacy organized an annual program for the public for medication occupational safety in houses.								
7	Pharmacy staff competency and training								
	Occupational safety pharmacists remain available and responsible for occupational safety and health systems in pharmacy services.								
	The pharmacy services had a system to provide orientation about pharmacy occupational safety for all new pharmacy staff.								
	The pharmacy services had a system of competency assessment of pharmacy occupational safety for all pharmacy staff at least annually.								
	The pharmacy services had a system of education and training of pharmacy occupational safety for all pharmacy staff at least annually.								
	The pharmacy services had a system of education and training pharmacy occupational safety at IV admixture services.								
	The pharmacy services had a system of education and training pharmacy occupational safety at the Extemporaneous preparation area.								
8	Total Quality and Risk Management								
	There is a formal job description for pharmacist occupational safety and policy and procedures of pharmacy occupational safety.								
	There are daily, weekly, and monthly safety inspections and tests.								
	There is an annual survey and assessment of pharmacy occupational safety.								
	There is a system of preventing and reporting incidents with complete occupational safety and health analysis.								
	The annual report of incidents of pharmacy occupational safety was presented to higher administration and all pharmacy staff.								

*1= No activity had been implemented, 2= It was formally discussed and considered, but it was not implemented, 3= It is partially implemented in hospitals for some or all areas, patients, drugs, and staff, 4= It is fully implemented in the hospital for some areas, patients, drugs, and staff, 5= It is fully implemented throughout the hospital for all patients, drugs, and staff.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

Funding

None

Consent for Publications

Informed consent was obtained from all the participants

Ethical Approval

This research is exempted from research and ethical committee or an institutional review board (IRB) approval.

<https://www.hhs.gov/ohrp/regulations-and-policy/decision-charts-2018/index.html>

ABBREVIATIONS

MOH: Ministry of Health; **KSA:** Kingdom of Saudi Arabia; **ISMP:** Institution Safe Medication Practice; **CBAHI:** Saudi Central

Board for Accreditation of Healthcare Institutions; **FMS:** Facility and Management Safety; **NFA:** National Fire Protection Association; **OSHA:** Occupational Safety and Health Administration; **NIOSH:** The National Institute for Occupational Safety and Health; **IOSH:** The Institution of Occupational Safety and Health.

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REFERENCES

- Alomi YA, Shorog E, Alshahrani A, Alasmay S, Alenazi H, Almutairi A, et al. National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016-2017: Preparation of Medications and Dispensing. *Journal of Pharmacy Practice and Community Medicine*. 2018;4(1s):s47-s53. doi: 10.5530/jppcm.2018.1s.19.
- Alomi YA, Shorog E, Alshahrani A, Alasmay S, Alenazi H, Almutairi A, et al. National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016-2017: Drug Monitoring and Patients Education. *Journal of Pharmacy Practice and Community Medicine*. 2018;4(1s):s17-s22. doi: 10.5530/jppcm.2018.1s.14.
- Alomi YA, Alghamdi SJ, Alattyh RA. National Survey of Pharmacy Practice at MOH Hospitals in Saudi Arabia 2016-2017: Pharmacy Inventory Control and Stock Management. *Journal of Pharmacy Practice and Community Medicine*. 2018;4(1s):s28-s33. doi: 10.5530/jppcm.2018.1s.16.
- Alomi YA. National Medication Safety Program at the Ministry of Health in Saudi Arabia. *Journal of Pharma & Pharmaceutical Sciences*. 2015;03(05). doi: 10.4172/2329-6887.1000e145.
- Alomi YA. National Pharmacy Practice Programs at Ministry of Health in Saudi Arabia. *Journal of Pharma & Pharmaceutical Sciences*. 2015;1(2):17-8. doi: 10.24218/vjpps.2015.10.
- Al-Hameed FM, Al-Dorzi HM, Abdelaal MA, Alaklabi A, Bakhsh E, Alomi YA, et al. The Saudi clinical practice guideline for the prophylaxis of venous thromboembolism in medical and critically ill patients. *Saudi Medical Journal*. 2016;37(11):1279-93. doi: 10.15537/smj.2016.11.15268. PubMed PMID: 27761572; PubMed Central PMCID: PMC5303811.
- Alomi YA. National pharmacy anticoagulation program at the Ministry of Health in Saudi Arabia. *BAOJ Pharm Sci*. 2017;3(3):1-7.
- Alomi YA, Shorog E, Alshahrani A, Alasmay S, Alenazi H, Almutairi A, et al. National survey of pharmacy practice at MOH hospitals in Saudi Arabia 2016-2017: Clinical pharmacy services. *Journal of Pharmacy Practice and Community Medicine*. 2018;4(1s).
- ASHP. ASHP minimum standard for ambulatory-care pharmaceutical services. *American journal of hospital pharmacy*. 1982;39(2):316. Epub 1982/02/01. PubMed PMID: 7058810.
- Greeson NMH, Mixon W, Allan WC. Safety Standards in Pharmaceutical Compounding, Part 1: The Occupational Safety and Health

- Administration. *Int J Pharm Compd.* 2020;24(4):270-6. Epub 2020/07/11. PubMed PMID: 32649298.
11. ISMP Medication Safety Self Assessment. Institute for Safe Medication Practices.
 12. ISMP Medication Safety Self Assessment@for Community/Ambulatory Pharmacy. Institute for Safe Medication Practices.
 13. Alomi YA, Ibrahim EK. KSA-Self Assessment of Pain Management Medication Safety for Hospitals. *Journal of Pharmacy Practice and Community Medicine.* 2017;3(4):288-98. doi: 10.5530/jppcm.20174.74.
 14. Alomi YA, Alslim RM, Alslim MM, Alamoudi KA, Almualllem ZA, Alragas AMH. National Survey of Medication Safety Practice: Preparation of Medication and Dispensing at Primary Healthcare Centers/Community Pharmacies in Riyadh, Saudi Arabia. *Pharmacology, Toxicology and Biomedical Reports.* 2019;4(3):49-57. doi: 10.5530/ptb.2018.4.15.
 15. Alomi YA, Khayat NAY, Baljoon MJ, Bamagaus YA, Jumah HMA. National Survey of Hospital Medication Safety Practice during Mass Gathering (Hajj-2016) in Makkah, Saudi Arabia: Patient Education, Quality Process, and Risk Management. *Journal of Pharmacy Practice and Community Medicine.* 2017;3(4s):s1-s7. doi: 10.5530/jppcm.20174s.41.
 16. Yodaiken RE, Bennett D. OSHA work-practice guidelines for personnel dealing with cytotoxic (antineoplastic) drugs. *Occupational Safety and Health Administration. American journal of hospital pharmacy.* 1986;43(5):1193-204. Epub 1986/05/01. PubMed PMID: 3717176.
 17. Kusumaningtyas NIF, Satrio T. Evaluation of the Occupational Health and Safety Implementation in the Pharmacy Laboratory of University X Surabaya. *The Indonesian Journal of Occupational Safety and Health.* 2022;11(1):43-53. doi: 10.20473/ijosh.v11i1.2022.43-53.
 18. Statistics Report. General Organization of Social Insurance, 2020.
 19. Occupational Diseases List. General Organization for Social Insurance, 2009.
 20. Thompson CA. Fire fails to deter outpatient pharmacy staff from serving patients. *American Journal of health-system Pharmacy.* 2018;75(12):841-2. Epub 2018/06/09. Doi: 10.2146/news180039. PubMed PMID: 29880514.
 21. William E. Koffel GEH, Kenneth E. Bush, Stanley C. Harbuck. *Life Safety Code (NFPA 101).* National Fire Protection Association, 2018.
 22. Risk management – Risk assessment techniques. The International Electrotechnical Commission, 2019.
 23. Flammable and Combustible Liquids Code 30. National Fire Protection Association, 2018.
 24. Installation of Sprinkler Systems. National Fire Protection Association, 2019.
 25. Standard for Commissioning of Fire Protection and Life Safety Systems. National Fire Protection Association, 2021.
 26. Materials Handling and Storage. Occupational Safety and Health Administration U.S. Department of Labor, 2002.
 27. Recommended Practices for Safety and Health Programs: Occupational Safety and Health Administration, 2016.
 28. Hazard Classification Guidance for Manufacturers, Importers, and Employers. Occupational Safety and Health Administration U.S. Department of Labor, 2916.
 29. Inspection Procedures for the Hazard Communication Standard. Occupational Safety and Health Administration U.S. Department of Labor, 2015.
 30. National Hospital Standards. Third Edition ed: Saudi Central Board for Accreditation of Healthcare Institutions.; 2015.
 31. Joint Commission International Accreditation Standards for Primary Care. Joint Commission International, 2018.
 32. O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med.* 2014;89(9):1245-51. doi: 10.1097/ACM.0000000000000388. PubMed PMID: 24979285.