

RESEARCH ARTICLE

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National Survey of Drug Information Centers practice: Pharmacoeconomic System at Ministry of Health Hospitals in Saudi Arabia

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Abstract

Objective: To explore the National Survey of Drug Information Centers practice in Saudi Arabia: Pharmacoeconomic System at Ministry of Health Hospitals. **Methods:** It is a cross-sectional four months national survey of Drug Information Services at MOH. It contained ten domains with 181 questions designed by the authors. It was derived from Internal Pharmaceutical Federation (FIP), American Society of Health-System Pharmacists best practice guidelines. This survey was distributed to forty hospital pharmacies that run drug information services. In this study, the domain of Pharmacoeconomics System was explored and analyzed. It consisted of eight questions about the written policy and procedure and application methods for the Pharmacoeconomic system in the drug information centers. All analysis was done through survey monkey system. **Results:** The survey was distributed to forty-five of hospitals, the response rate, was 40 (88.88%) hospitals. Of those; The Written policy and procedure of Pharmacoeconomic did not exist in 26 (65%) hospitals. The definition types of Pharmacoeconomic do not exist in 23 (57.5%) hospitals. Evaluation Processes of Pharmacoeconomic Studies did not exist in 22 (55%) hospitals. The intensive analysis performed for all significant potential cost of the medications did not exist in 22(55%) hospitals. The evidence for using reported Pharmacoeconomic data to improve medication use process and reduce cost rate, not found in 22 (55%) hospitals. Moreover, the Evidence of involvement of Drug Evaluation Processes not existed in 20 (50%) hospitals. **Conclusion:** the pharmacoeconomics system was week implementations of drug information centers practice. Revision of pharmacy strategic plan with pharmacoeconomics applications is required to improve the system at MOH hospital in the kingdom of Saudi Arabia.

Keywords: Drug Information Centers, Pharmacoeconomic, Ministry of Health, Saudi Arabia.

INTRODUCTION

The fifth strategic goal of pharmacy plan of MOH organization in the kingdom of Saudi Arabia was the utilization of best resource based on Pharmacoeconomic [1]. Also, the pharmacoeconomics tools as measuring indicators of several pharmacy practices and clinical pharmacy programs including but not limited to the Pharmacy pain management program, pharmacy anticoagulation program and antimicrobial stewardship program [2-4]. Several published literature discussed Pharmacoeconomic in Saudi Arabia including pharmacy and Therapeutic committee [5-9]. Another study locally implemented Pharmacoeconomic in their studies as cost avoidance and impact. Calculation [10-12]. Some international studies discussed the pharmacoeconomics as part of drug information centers activities [13-14]. There are not any local studies investigated the pharmacoeconomics concept used in drug information centers [15]. The

authors are not familiar with any studies in Saudi Arabia or Gulf, Middle East, or rest if the world investigated the pharmacoeconomics system with such detail at group or network of drug information centers. The objective of the study was to explore the Pharmacoeconomic system at drug information centers of ministry of health hospitals.

METHODS

It is a national survey of Drug Information Services at MOH. It contained ten domains; Leadership and Practice Management, Medication Addition and Deletion System, Hospital Formulary System, Medication Safety System, Professional, and Public Education. The Evidence-Based Medicine-Therapeutics Guidelines (EBM-TG), Medication-Use Evaluation, Pharmacoeconomics System, Investigational Drug Services (IDS) and Professional Publications Services (PPPS), and Ethical and Legal Issue. It consisted of 181

questions designed by the authors. It drew from Internal Pharmaceutical Federation (FIP), American Society of Health-System Pharmacists best practice guidelines, the international standard of Joint Commission of Hospital Accreditation in addition to the local standards of Saudi center of health care accreditation and minimum standards of drug information centers in Saudi Arabia [16-20]. This survey was distributed to forty-five hospital pharmacies that run drug information services. The information of hospitals services taken from extensive records of General Administration of pharmaceutical care. In this study, the domain Pharmacoeconomics System was explored and analyzed. It contained eight questions about the written policy and procedure for the Pharmacoeconomic system that's included the definition types of Pharmacoeconomic Analysis in drug information center and Evaluation Processes of Pharmacoeconomic were studied. The intensive analysis was performed for all significant potential cost of the medications. Evidence for using reported Pharmacoeconomic data to improve medication use process and reduce cost rate, Proof of involvement of Drug Evaluation Processes, Method for improving Pharmacoeconomic Analysis in drug information centers (DIC), Evidence of reporting Pharmacoeconomic Analysis in DIC were studied. All analysis was done through survey monkey system.

RESULTS

The survey was distributed to 45 hospitals, the response rate, was 40 (88.88%) hospitals. Of that 35 % large hospitals, 37.5 % medium size hospitals, 17.5 % small size hospitals, and 10 % National and Regional Drug Information Centers. Of those, fifteen hospitals were only accredited by CIBAHI and eight hospitals only accredited by Joint commission while none of them were accredited by ASHP or Canada. The majority of responders were Saudi 38 (95%), and 28 (70%) were male gender, and 12 (30%) were female as explored in table 1. Of responded hospitals, The Written policy and procedure of Pharmacoeconomic did not exist in 26 (65%) hospitals while only three (7.5%) of hospitals 100% applied the elements. The Definition types of Pharmacoeconomic Analysis do not exist in 23 (57.5%) hospitals while only five (12.5%) of hospitals applied 100% the elements. Evaluation Processes of Pharmacoeconomic Studies did not exist in 22 (55%) hospitals while only four (10%) of hospital ultimately used the elements. The intensive analysis was performed for all significant potential cost of the medications did not exist in 22(55%) hospitals while only 3 (7.5%) of hospitals applied 100% elements. The evidence for using reported Pharmacoeconomic data to improve medication use process and reduce cost rate, not found in 22 (55%) hospitals while only 3 (7.5%) of hospitals applied 100% elements. The Evidence of involvement of Drug Evaluation Processes was not

existed in 20 (50%) hospitals while only four (10%) hospitals applied 100% elements. The method for improving Pharmacoeconomic Analysis did not exist in 22 (55%) hospitals while only four (10%) hospitals applied 100% elements. The Evidence of reporting Pharmacoeconomic Analysis in Drug formation practice does not exist in 22 (55%) hospitals while only 3 (7.5%) hospitals ultimately apply 100% of the elements as explored in table 2.

DISCUSSION

The ministry of health released health care strategic planning in 2010, with documented achievement [21]. During the years 2010-2020, the organization skeleton of Ministry of health updated several times including all medical and non-medical administration addition or deletion. Part of success the established the new general administration to take care of health economics and investment. The health economics and investment newly founded with the certain goal of implementation of health economics and expanding of investment for MOH. The administration arranged to specify the average length of stay for each disease, cost of services at the hospitals and primary care centers, and recently organized all MOH institution for health or medical insurance. The medical and logistic department implemented the Pharmacoeconomic concept while requesting or deletion any medication or Pharmaceutical items with the cooperation of Pharmacy and Therapeutic committee and general administration of Pharmaceutical Care [22]. The medical and logistic department had an annual conference of Pharmacoeconomics and outcome research on a yearly basis with participation of a clinical pharmacist from general administration of Pharmaceutical Care and hospital pharmacist from different regions. The conference founded with the collaboration of several Pharmacoeconomics department at the international university and with international society of Pharmacoeconomics and outcome research [23]. The authors tried to investigate the implementation of Pharmacoeconomics concept through hospital drug information centers overall the Kingdom. The finding showed the minimal implementation of the pharmacoeconomic system with lower than what reported by an old study by Matuszewski, Karl A or new studies by Rosenberg, J M et al., conducted in 2004 and 2009 [14,24]. The findings were expected due to the system is newly founded at MOH hospital pharmacies and difficult to find an expert or qualified pharmacoeconomic pharmacist. The other finding was difficult to compare with them because it not mentioned at any drug information centers investigation. The pharmacoeconomic system needs very comprehensive education and training for drug information pharmacists, involve the system in the drug evaluation process of addition and deletion of medicines from MOH hospital formulary in addition to close

monitoring and follow-up during implementation, the system at drug information centers of MOH hospitals in Kingdom of Saudi Arabia.

CONCLUSION

There was an indigent application of pharmacoeconomics system in drug information centers practice. An educating and training of drug information pharmacist on the pharmacoeconomic system and implementation of this scheme improves the applications of Pharmacoeconomics concept. It improves drug information services, chose the best cost-effective formulary medications, and avoids the unnecessary additional cost.

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Conflict of interest: None

Abbreviation Used: KSA: Kingdom of Saudi Arabia, MOH: Ministry of Health, DIC: Drug Information Centers, IDS: Investigational Drug Services, PPS: Professional Publications Services.

REFERENCES

- [1] 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(3):1–8.
- [2] Alomi YA. National Pharmacy Pain Management Program at Ministry of Health in Saudi Arabia. *J Pharmacol Clin Res*. 2017;3(2).
- [3] Alomi YA. National pharmacy anticoagulation program at Ministry of Health in Saudi Arabia. *BAOJ Pharm Sci*. 2017;3(3):3–7.
- [4] Alomi YA. National Antimicrobial Stewardship Program in Saudi Arabia; Initiative and the Future. *Open Access J Surg*. 2017;4555646(45).
- [5] Alkhenizan A. The pharmacoeconomic picture in Saudi Arabia. *Expert Rev Pharmacoecon Outcomes Res*. 2014;14(4):483–90.
- [6] Babar Z-U-D, Scahill S. Is There a Role for Pharmacoeconomics in Developing Countries? *Pharmacoeconomics*. 2010; 28(12):1069–74.
- [7] Al-Jazairi A, Al-Qadheeb N, Ajlan A. Pharmacoeconomic analysis in Saudi Arabia: An overdue agenda item for action. *Annals of Saudi Medicine*. 2011. 31(4): 335–341
- [8] Esba LCA. An Annual Formulary Review Strategy Implemented by a Saudi Health System. *P&T*. 2016;41(8):513–6.
- [9] AL Aqeel SA, Al-Sultan M. The use of pharmacoeconomic evidence to support formulary decision making in Saudi Arabia: Methodological recommendations. *Saudi Pharmaceutical Journal*. 2012. 20(3):187–194
- [10] Alomi YA, Fallatah AO, Al-Smail EH. Assessment Of Clinical And Economic Outcomes Of Pharmacist Intervention In Total Parenteral Nutrition Program In Saudi Arabia. *Value Heal*. 2016;19(7):A465.
- [11] Alomi YA, Alanazi AA, Alsallouk SA, Almaznai MM, Abu-Alnaja NI, Alduhilan M, et al. Cost-Efficiency Of Medication Safety Program At Pediatrics, Obstetrics, And Gynecology Hospital, East Province, Saudi Arabia. *Value Heal*. 2016;19(7):A464.
- [12] Alomi YA, Al-Shubbar NA, Lubad NA. Economics outcomes of medication safety program at public hospital in Riyadh, Saudi Arabia. *Value in Health*. 2017. A32–A32.
- [13] Rosenberg JM et al. Current status of pharmacist-operated drug information centers in the United States. *Am J Heal Pharm*. 2004;61:2023–32.
- [14] Rosenberg JM, Schilit S, Nathan JP, Zerilli T, Mcguire H. Update on the status of 89 drug information centers in the United States. *Am J Heal Pharm*. 2009;66(19):1718–22.
- [15] Alamri S, Ali Al Jaizani R, Naqvi A, Ghamdi M. Assessment of Drug Information Service in Public and Private Sector Tertiary Care Hospitals in the Eastern Province of Saudi Arabia. *Pharmacy*. 2017;5(3):37.
- [16] Vernon G, Dvorkin L, Vidotti CCF, Woods D. Requirements for Drug Information Centres. FIP Pharmacy Information Section; 2005. <http://www.cff.org.br/userfiles/file/cebrim/RequirementsforDrugInformationCentres%202005%20final.pdf>.
- [17] Ghaibi S, Ipema H GM. ASHP Guideline on The Pharmacist's Role in Providing Drug Information. *Am J Heal Pharm*. 2015; 72:573–7.
- [18] Medication Management (MM). In: National Hospital Standards. 2nd Edition. Saudi Central Board for Accreditation of Healthcare Institutions.; 2015.194–211. Available from: <http://www.cbahi.gov.sa>
- [19] The Joint Commission. Comprehensive Accreditation Manuals. Joint Commission Resources. Available from: <http://www.jcrinc.com/store/publications/manuals/>.
- [20] Ministry of Health GPCD. The minimum standard of Drug Information Center in KSA. Ministry of Health, Saudi Arabia; 2014. Available from: <http://www.moh.gov.sa/depts/Pharmacy/Documents/Minimum Standards of Drug Information Center at KSA.pdf>,
- [21] Ministry of Health. A Cheivements 2013. 1st Edition. Riyadh, Saudi Arabia: Ministry of Health, Saudi Arabia; 2011. 132-135 p. Available from: http://sgsminsk.by/_/media/Global/Documents/T

Technical Documents/Technical Datasheets/SGS-PCA-SA-Datasheet SFDA-A4-EN-11-V2.pdf

[22] MOH. Ministry of Health Formulary. The Ministry of Health Advis Logist Cap Equipment. 2012; Available from http://www.moh.gov.sa/en/Portal/WhatsNew/Documents/MOHF_DRUG_LIST_CD.pdf

[23] The 3rd International Pharmacoeconomics Conference. 2015. Available from: <http://www.roche->

middleeast.com/featurestories/KSA_PharmaEcon.html.

[24] Matuszewski KA, Windisch PA. Drug Information Activities in Academic Health Centers: A 1996 Survey. *Drug Inf J.* 1998; 32:539–46.

Table 1: Demographic information of responders

Size, ownership, and accreditation of respondents			Nationality		Sex		Accreditation			
Hospital size (Number of staffed beds)	Number of hospitals	Percentages	Saudi	Non-Saudi	Male	Female	CIBAHI	JCI	Canada	ASHP
Small										
<50	1	2.5 %	1 (2.5%)	0 (0%)	1 (2.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
50–99	6	15 %	6 (15%)	0 (0%)	6 (15%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Medium										
100–199	7	17.5 %	7 (17.5 %)	0 (0%)	6 (15%)	1 (2.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
200–299	8	20 %	7 (17.5 %)	1 (2.5%)	5 (12.5%)	3 (7.5%)	5 (25%)	2 (10%)	0 (0%)	0 (0%)
Large										
300–399	7	17.5 %	7 (17.5 %)	0 (0%)	4 (10%)	3 (7.5%)	4 (20%)	2 (10%)	0 (0%)	0 (0%)
400–599	7	17.5 %	6 (15%)	1 (2.5%)	5 (12.5%)	2 (5%)	6 (30%)	4 (20%)	0 (0%)	0 (0%)
More than or	0	0.00%	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Very Large										
Medical Cities	0	0.00%	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
National and Regional Drug Information	4	10.0 %	4 (10%)	0 (0%)	1 (2.5%)	3 (7.5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Missing No-Response	0	0.00 %	0 (0%)	0 (0%)	0 (0%)	0 (0%)	20 (50%)	20 (50%)	20 (50%)	20 (50%)
Total	40	100%	38 (95%)	2 (5%)	28 (70%)	12 (30%)	20 (50%)	20 (50%)	20 (50%)	20 (50%)
Ownership										
MOH-	40	100%								
Non-MOH	0	0.00%								
Privates	0	0.00%								

Table 2: Drug Information centers (DIC) had a process for Pharmacoeconomic System that includes:							
Answer Options	1	2	3	4	5	Rating Average	Response Count
Written policy and procedure for Pharmacoeconomic	24	3	5	3	5	2.05	40
Definition types of Pharmacoeconomic Analysis in DIC.	23	2	7	3	5	2.13	40
Evaluation Processes of Pharmacoeconomic Studies.	22	1	10	3	4	2.15	40
The intensive analysis performed for all significant potential cost of the medications.	22	4	6	5	3	2.08	40
Evidence for using reported Pharmacoeconomic data to improve medication use process and reduce cost rate.	22	5	6	4	3	2.03	40
Evidence of involvement of Drug Evaluation Processes.	20	4	6	6	4	2.25	40
Process for improving Pharmacoeconomic Analysis in DIC.	22	4	5	5	4	2.13	40
Evidence of reporting Pharmacoeconomic Analysis in DIC.	22	3	8	4	3	2.08	40
<i>answered question</i>							40
<i>skipped question</i>							0
1: DIC is NOT applying the elements. 2: DIC is applying 25% of the elements 3: DIC is applying 50% of the elements. 4: DIC is applying 75% of the elements 5: DIC is applying 100% of the elements							

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