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Patient's Knowledge of Drug-Related Cost Information in Saudi Arabia

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Abstract

Objective: To explore the Patient's Knowledge of medicines related cost information in Saudi Arabia. **Methods:** It is a 4-months cross-sectional survey of patient and basic knowledge of medicines. The survey consisted of two-part, demographic information and second part forty-nine questions divided into four domains. It included domain 1: Primary or essential information about patient medication, domain 2: patient information about the drug-related problem, domain 3: patient information about drug-related cost and domain 4: patient perception of medications. Medline Plus health information and DailyMed-INH elements information from National Institute of Health United State of America were used. The 5-point Likert response scale system was used. The questions were open and closed-ended. The survey distributed through social media and at 500-bed pediatrics and maternity hospital in Asir region, at ambulatory care pharmacy. The hospitals were accredited by Saudi Center for Healthcare organization (CBAHI) and Joint Commission on Hospital Accreditation from the United States of America (USA). The authors did the patients interview with electronic survey documentation. The survey was made in an electronic format and it analyzed domain three patient information about drug-related cost through survey monkey system. **Results:** The total responders were (614) patients with Saudi 564 (96.1%) and Non-Saudi 23 (3.9%) nationalities. The gender distribution 523 (85.2%) were females and 91 (14.8%) were males. The most type of medications used was anti-diabetic and anti-hypertension medicines, Skin medications and drugs for Respiratory Diseases. The responders showed good knowledge about drug storage at room temperature 380 (64.7%) or refrigerator 378 (64.7%), protect medication from light exposures 335 (57.56%) and how to behave with an expired medication 328 (59.85%). The patient had not adequate information about prescription prices 294 (49.83%) and imperfect knowledge about Health insurance coverage of medications 198 (32.53%). The patients showed that missing of medication knowledge led them to visit doctor clinic 114 (20%), visit the pharmacy 180 (32.4%), visit hospital emergency 40 (7.4%), hospital admission 77 (13.9%) or intensive care admission 23 (4.3%). **Conclusion:** The patients missed medication cost knowledge in Ministry of Health organization. Drug-related prices and medication cost awareness are demanding for Saudi patient to prevent drug-related hospital admission, patient's shares in the drug therapy plan to choose the appropriate medications to improve patient adherence and improve clinical outcomes and patients' quality of life.

Key words: Patient, Knowledge, Medications, Cost, Ministry of Health, Saudi Arabia.

INTRODUCTION

Every year the patient visits healthcare institution several times. Sometimes need hospital admission. The demand for healthcare services either for acute or chronic or elective objectives that needs some management of medications. Some patient covered by health insurance system others not so. Most of our population currently not covered by healthcare insurance. The healthcare services provided free to all Saudi patients and anyone works in the governmental organization. Others work in privates sectors should cover by health insurance. Sometimes the patient needs any over the counter medications or visit private's clinic and buy his medications from community pharmacies. The budget of medication prices most of the times not calculated. Some patient keeps their medications in the house refrigerator then throughout of them in the basket and waste money and that is one not calculated within the family budget. The estimated Expenditures for prescription drugs reached $100 billion in 1999 in other countries.[1] The high cost of medication may result in patient non-compliance with medication. Some patients are unable to pay for their drug so that they will stay with no medications or it is possible that the patient takes only certain medications. The patient's knowledge of their medications cost is essential and the most important is to know the therapeutic alternatives available in the pharmacy, which pharmacists can choose for him. The patient should understand the exacerbation that can happen to him if he does not get the medication. Moreover, it may spend much more money to deal with the exacerbations that have occurred to him Because of not taking the medication. Also, several drug-related problems may implicate to visit ambulatory care clinic or community pharmacy or hospital admission or critical care admission or need

a survey or even death complications.[2-5] No previous conditions calculated as cost implications. The patient's knowledge of medications and cost related all previous situations maybe not familiar with that is one. Several studies discussed the cost of medications and patient-related issues.[6-7]

Most of them investigated the impact of cost medication knowledge and disease adherence or management.[8-9] Few studies or maybe not found investigated the patient knowledge of medications cost-related issues. It seldom to find local studies or Gulf and Middle East counties discussed those issues. The objective of the study was to explore the patient's knowledge about medications cost and related issues in Kingdom of Saudi Arabia.

METHODS

It is a 4-months cross-sectional survey of patient and basic knowledge of medicines. The survey consisted of two-part, demographic information and second part consisted of forty-nine questions divided into four domains. It included domain 1: Primary or essential information about patient medication, domain 2: patient information about the drug-related problem, domain 3: patient information about drug-related cost and domain 4: patient perception of medications. Medline Plus health information and DailyMed-INH elements information from National Institute of Health United State of America were used.[10-11] The 5-point Likert response scale system was used. The questions were open and closed-ended. The survey distributed through social media and at 500-bed pediatrics and maternity hospital in Asir region, at ambulatory care pharmacy. The hospitals were accredited by Saudi Center for Healthcare organization (CBAHI) and Joint Commission on Hospital Accreditation from the United States of America (USA).[12-13] The hospital's several departments were included such as Pediatrics, Obstetrics and Gynecology. It had Adults, Pediatrics and Neonatal critical care, with the separated nursing unit. In addition to medical and surgical sections for adults, pediatrics and neonates. The pharmacy departments distributed the medication through unit dose system according to CBAHI standards and American Society of Health-System standards. Also, the pharmacy had inpatient pharmacy, outpatient pharmacy, Intravenous Admixture services with professional Total Parenteral Nutrition. The clinical pharmacy services did not entirely exist except some programs for an instant; drug information center, patient-counseling services and medication safety program. The authors did the patients interview with electronic survey documentation. The survey was made in an electronic format and it analyzed domain three patient information about drug-related cost through survey monkey system.

RESULTS

The total responders were (614) patients with Saudi 564 (96.1%) and Non-Saudi 23 (3.9%) nationalities. The gender distribution 523 (85.2%) were females and 91 (14.8%) were males. The majority of them in age (18-44) 78.3% and located at Asir region 325 (52.93%) and Riyadh region 163 (26.54%). The most patients had the Bachelor Degree 311 (50.65%) followed by High school 138 (22.48%) and Diploma 47 (7.65%). The most type of medications used was anti-diabetic and anti-hypertension medicines, Skin medications and drugs for Respiratory Diseases. Also, the total patient currently taking medication were 249 (43.23%). Of those the most number of medication taken either one 96 (38.55%), two medications 79 (31.73 %%), three medications 25 (10.04%) and four medications 24 (10.04%) as explored in Table 1. The responders showed good knowledge with both complete and incomplete information about drug storage at room temperature 380 (64.7%) or refrigerator 378 (64.7%). Also, protect medication from light exposures 335 (57.56%) and how to behave with an expired medication 328 (59.85%). The patient had not adequate information with both complete and incomplete information about prescription prices 294 (49.83%) and imperfect knowledge about Health insurance coverage of medications 198 (32.53%) as explored in Table 2. The patients showed that missing of

Table 1: Demographic responder qualifications information.

Characteristics	Response N	Response %
Sex		
Female	523	85.2%
Male	91	14.8%
Answered question	614	100%
Skipped question	0	
Nationality		
Saudi	564	96.1%
Non-Saudi	23	3.9%
Answered question	587	100%
Skipped question	27	
Age		
<18	34	9.9%
18 - 29	267	103.0%
30 - 44	214	60.9%
45 - 59	87	22.5%
60+	12	3.6%
Answered question	614	100%
Skipped question	0	
Total Experiences		
Doctorate degree	7	1.14%
Master degree	17	2.77%
Bachelor Degree	311	50.65%
Diploma	47	7.65%
High school	138	22.48%
Intermediate School	33	5.37%
Primary School	27	4.40%
Not educated	34	5.54%
Answered question	614	100%
Skipped question	0	
The current medications		
Diabetic Medication	79	12.91%
Antihypertensive Medication	64	10.46%
Cardiac Medication	13	2.12%
Asthma Medication	50	8.17%
Derma Medication	57	9.31%
Anti-Rheumatic	32	5.23%
Do not take anything now	412	67.32%
Others	87	14.22%
Answered question	612	100%
Skipped question	2	
Number of current medication taken		
Nothing	327	56.77%
1	96	38.55%
2	79	31.73%
3	25	10.04%
4	24	9.64%
5	13	5.22%
6	5	2.01%
7	3	1.20%
8	0	0.00%
9	1	0.40%
10	2	0.80%
more than 10	0	0.00%
Answered question	576	
Skipped question	38	

Table 2: Knowledge of Medication storage information.								
No.	**Answer Options**	**Complete information**	**Incomplete information**	**Weak information**	**I do not have information**	**I do not need this information**	**Rating Average**	**Response Count**
1	Storage of medication at room temperature	244	136	103	76	28	3.84	587
2	Storage of medication in Refrigerator	245	133	102	78	26	3.84	584
3	Protect medication from light exposures	184	151	94	126	27	3.58	582
4	How to deal with expired medications	228	100	62	130	28	3.68	548
answered question:589 and skipped question:25								
Knowledge of Medication prices information								
No.	**Answer Options**	**Complete information**	**Incomplete information**	**Weak information**	**I do not have information**	**I do not need this information**	**Rating Average**	**Response Count**
1	General medication prices	133	161	107	158	31	3.35	590
2	Health insurance coverage of medications	99	90	78	156	158	2.68	581
answered question:590 and skipped question:24								

Table 3: The patient's outcome of drug-related problems					
Answer Options	**Yes**	**Response %**	**No**	**Response %**	**Total Response N**
Ambulatory care clinic visit	114	20.00%	456	80.00%	570
Pharmacy visit	180	32.37%	376	67.63%	556
Emergency visit	40	7.39%	501	92.61%	541
Hospital admission	77	14.18%	475	85.82%	552
Critical Care admission	23	4.34%	507	95.66%	530
answered question:577 and skipped question:37					

medication knowledge led them to visit doctor clinic 114 (20%), visit the pharmacy 180 (32.4%) and visit hospital emergency 40 (7.4%) in addition to hospital admission 77 (13.9%) or intensive care admission 23 (4.3%) as explored in Table 3.

DISCUSSION

Government hospitals in Saudi Arabia are paying the full cost of medication to the patients and as a result, most patients do not know the price of their medicines. When the patient does not know the cost of his medication, it is possible to underestimate the treatment and may not adhere to it and this leads to a significant loss of resources.[14] As a result, governments are losing too much money on the other hand, patients in private hospitals who pay for their cost of medications is an important determinant of whether patients will buy the medication or not. Limited income patients often suffer from chronic diseases have to be treated.[15] The price of the drug, in this case, has an effect directly on the patient's compliance with the drug physicians prescribe, which they believe, be useful, without any consideration of the cost-effectiveness, especially in the low-income earners that come for their services. From a patient's point of view, cost-effectiveness relates to more than improved health status.[15] Patients may go with drugs of low potency for instant (antibiotics) that may not help them alternatives of the drug with the same effectiveness. However, the lower price are good choices for patients but they must feel confident that they can successfully change the described drugs to alternatives This can improve the patient's adherence to the drug.[16] The implementation of pharmacy strategic plan at Ministry of Health organizations started with several steps.[17] It included the baseline information before implementing the services, then pharmacy program implementation, then measure the clinical and economic outcome of the services and based on that the services can expand. Several pharmacy services released related to the medication cost, for the instant PharmacoEconomic program, cost outcome and impact avoidance calculation of the services, control the prices of group purchases.[18-21] The knowledge of medications' cost should distribute through patient counseling programs. Clinical and economic outcomes, drug-related problems complications and this study is part of them. The investigator tried to measure the actual patient's knowledge of medications cost and related issues in Saudi Arabia. The finding of the study showed more than half of patients had an adequate knowledge of drug storage; protect the drug from light and the patient behavior with an expired medication. All those factors if not applied correctly, the drug gets wasted and results in cost related burden. Most of the time the patient ask about that information and they focused on because the drug efficacy may diminish with those factors. The results of disposing the medication are lower than what reported by Alazmi, A *et al*. that is related to missing of health education for our population.[7] The finding showed less than half of responders had information about medications prices or health care insurance coverage because the Saudi patient got all healthcare services included medications as free of change so, most of the patient was not care about that information. The knowledge of medication may cause as a factor of non-adhere of drug therapy if the patient is going to pay.[6,22-23] However, it very important to know prices of medication or cost treatment to share with patient choice of drug therapy plan to comply with medications. Also, the patient showed the complications of missing medications knowledge

led to some sequences and healthcare cost burden. They showed that most of them might visited the pharmacy or visit the doctors at ambulatory care clinic to ask the medications knowledge. Sometimes patients may miss the information and behave by himself and misuse the medications, which led to hospital admissions or emergency department visit or critical care admission. All those sequels had an economic burden on the healthcare system. Because the reason is straightforward and it missed medication knowledge for the patient. The result of ambulatory care visit is high than what reported by Hammerman, H. *et al*. That has related to free of charge of visiting a clinic in the government hospital and very acceptable and cheap charges within privates clinic.[24] The results of hospital admission resemble what reported by Nivya, K *et al*. while the results of emergency visit resemble what reported by Al-Arifi, M *et al*. almost what reported in other studies.[2-3,25-26] The results of drug-related problems caused critical admission almost resemble what reported others.[24,27] Most of the patient's perspective, results of complications of drug-related problems resemble what published in the other investigations with different methodology.

CONCLUSION

Lack of knowledge about drug information is the cost of the burden on the healthcare system. Elderly patients are more likely to suffer from high price medication. Pharmacists in the pharmacy would improve patients' knowledge of medication use. Moreover, can give alternatives to the same quality. Drug cost awareness is demanding in the Saudi patient to prevent hospital-related drug access, improve clinical patient outcomes and quality of life.

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CONFLICT OF INTEREST

None

ABBREVIATIONS

KSA: Kingdom of Saudi Arabia; MOH: Ministry of Health; CBAHI: Saudi Center for Accreditation of Healthcare Institutions.

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