

# Healthcare professionals and Basic Knowledge of Medications in Saudi Arabia

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## Abstract

**Objective:** To explore the Healthcare professionals and Basic Knowledge of Medications in Saudi Arabia.

**Methods:** It is a 4-months cross-sectional survey of healthcare professionals and knowledge of medicines.

The survey consisted of two-part, demographic information and second part forty-nine questions divided into four domains. It included domain one: Primary or essential information about healthcare providers medication, domain two: healthcare professionals information about the drug-related problem, domain three: healthcare professionals information about drug-related cost and domain four: Healthcare providers perception of medications. All type of healthcare professionals included in the study. Medline Plus health information and DailyMed-INH elements information from National Institute of Health United State of America were used. The survey was distributed through social media by using what's App to more than one thousand healthcare professionals overall Kingdom of Saudi Arabia. The survey was made in an electronic format and it analyzed domain one Primary or necessary information about healthcare professionals medication through survey monkey system. **Results:** The total responders were (188) Healthcare professionals. Of those 177 (95.16%) were Saudi and 9 (4.84%) were non-Saudi. The gender distribution 120 (63.83%) were females and 68 (36.17%) were males. The most of Healthcare professionals were pharmacists 93 (71.54%), followed by nurses 18 (13.85%) and physicians 15 (11.54%). The most type of medications used was anti-hypertension medicines, anti-diabetic medicines, Skin medications and drugs for Respiratory Diseases. The healthcare professionals showed adequate knowledge both complete and incomplete information of the generic name of Medicines 117 (67.6%), the trade name 126 (73.7%), drug strength 128 (73.9%) and dosage form of medication 132 (76.7%). The responders showed adequate knowledge about medications with both complete information and incomplete information about drug indication 159 (85.5%), how to use medications 161 (87 %). The administration time 161 (86.55%), what to do if patient forgot one dose 133 (71.9%), the potential to adhere medication 159 (86.4%) and the time to stop drugs 148 (79.57%). The majority of responders used drug bulletin 126 (69.61%), Health practitioners 123 (67.96%), Internet 108 (59.67%) and Drug Information Center at the hospital 36 (19.89%) as sources of drug information.

**Conclusion:** More than one-third of Healthcare professionals missed complete essential drug information knowledge. Targeting of health care professionals; with individual basic drug information courses for the healthcare professionals through drug information services is required in Saudi Arabia.

**Key words:** Healthcare professional, Knowledge, Medications, Ministry of Health, Saudi Arabia.

## INTRODUCTION

The drug distribution system passes through several processes until reach to the patient. Procurement, storage, prescribing, preparation, dispensing, administration and follow up stage.<sup>[1-3]</sup> Each stage needs particular medication information and knowledge to an accomplishment the stage. The healthcare provisional must familiar with the basic principles for each drug; precautions for preparation; and considerations concerning administration to patients. Errors may occur by either lack of knowledge, insufficient practical skills or because of an accidental happening. The most type of healthcare professionals dealt with those stages and contact with patients are a physician, pharmacist

and nurses. Other type healthcare professionals less contact with medications. Several studies investigated the actual level of primary knowledge of medication of healthcare professionals including a physician, pharmacist and nurses.<sup>[4-5]</sup> Each study discussed one type alone. There is variation between the types of healthcare professionals among medication knowledge with different specialties. However, it seldom to find study in Saudi Arabia or Gulf and Middle East counties discussed general primary medications knowledge.<sup>[6]</sup> The objective of the instigation is to explore healthcare professional primary knowledge about medication in Kingdom of Saudi Arabia.

## METHODS

It is a 4-months cross-sectional survey of healthcare professionals and knowledge of medicines. The survey consisted of two-part demographic information and second part forty-nine questions divided into four domains. It included domain one: Primary or essential information about healthcare providers medication, domain two: healthcare professionals information about the drug-related problem, domain three: healthcare professionals information about drug-related cost and domain four: Healthcare providers perception of medications. All type of healthcare professionals included in the study. Medline Plus health information and DailyMed-INH elements information from National Institute of Health United State of America were used.<sup>[2-3]</sup> The 5-point Likert response scale system used. The questions were open and closed-ended. The survey distributed through social media by using what's App to more than one thousand healthcare professionals overall Kingdom of Saudi Arabia. A messages reminders sent to healthcare professional after two weeks and additional messages reminders sent to healthcare professional after four weeks. The survey made an electronic format and it analyzed domain one Primary or necessary information about healthcare professionals medication through survey monkey system.

## RESULTS

The total responders were (188) Healthcare professionals. Of those 177 (95.16%) were Saudi and 9 (4.84%) were non-Saudi. The gender distribution 120 (63.83%) was female and 68 (36.17%) was male. The majority of them in age (18-44) 86.7% and located at Asir region 89 (47.34%) and Riyadh region 46 (24.5%). The most of Healthcare professionals were pharmacist 93 (71.54%), followed by nurses 18 (13.85%) and physicians 15 (11.54%). The most responders qualifications had the Bachelor Degree 126 (67.02%) followed by Diploma 33 (17.55%) and Master degree 22 (11.7 %). The most type of medications used was anti-hypertension medicines, anti-diabetic medicines, Skin medications and drugs for Respiratory Diseases. Also, the most number of medication taken either one 29 (15.85%) or two medication 17 (9.29%) as explores by Table 1. The healthcare professionals showed acceptable knowledge both complete and incomplete information the generic name of Medicines 117 (67.6%), the trade name 126 (73.7%), drug strength 128 (73.9%) and dosage form of medication 132 (76.7%) as explored in Table2. The responders showed adequate knowledge about medications with both complete information and incomplete information about drug indication 159 (85.5%) and how to use medications 161 (87 %). The administration time 161 (86.55%), what to do if patient forgot one dose 133 (71.9%), the potential to adhere medication 159 (86.4%) and the time to stop drugs 148 (79.57%) as explored in Table 3. The majority of responders used drug bulletin 126 (69.61%), Health practitioners 123 (67.96%), Internet 108 (59.67%) and Drug Information Center at the hospital 36 (19.89%) as sources of drug information as explored in Table 4.

## DISCUSSION

The pharmacy administration at Ministry of Health stated more than thirty pharmacy practice and clinical pharmacy program during the past Pharmacy plan<sup>[7]</sup> which had led to improvement in pharmacy services offered to the patient, with preventing drug-related morbidities and mortality and avoidance of the economic burden on the healthcare system. The program consisted of medications information and knowledge designed through guidelines or protocol of disease management.<sup>[8]</sup> The primary job of that program was distributions of medications knowledge or information. The most example of the programs was medication safety program, national drug information centers, evidence-based therapeutic guidelines, pain management services and anticoagulation program.<sup>[9-12]</sup> The majority of the services involved the primary corner element as pharmacists with additional healthcare care professionals like the physicians and nurses. The question

**Table 1: Demographic responder qualifications information.**

Characteristics	Response N	Response %
<b>Sex</b>		
Female	120	63.83%
Male	68	36.17%
<b>Nationality</b>		
Saudi	177	95.16%
Non-Saudi	9	4.84%
Answered question	186	100%
Skipped question	2	
<b>Age</b>		
<18	5	2.66%
18 - 29	112	59.57%
30 - 44	51	27.13%
45 - 59	19	10.11%
60+	1	0.53%
<b>Healthcare professional</b>		
Doctor	15	11.54%
Dentist	4	3.08%
Pharmacist	93	71.54%
Nurse	18	13.85%
Others	33	25.38%
Answered question	130	
Skipped question	58	
<b>Total Experiences</b>		
Doctorate degree	7	3.72%
Master degree	22	11.70%
Bachelor Degree	126	67.02%
Diploma	33	17.55%
High school	7	3.72%
Intermediate School	0	0.00%
Primary School	0	0.00%
Not educated	0	0.00%
Answered question	188	100%
Skipped question	0	
<b>The current medications</b>		
Diabetic Medication	26	13.83%
Antihypertensive Medication	28	14.89%
Cardiac Medication	7	3.72%
Asthma Medication	16	8.51%
Derma Medication	18	9.57%
Anti-Rheumatic	13	6.91%
Do not take anything now	125	66.49%
Others	27	14.36%
<b>Number of current medication taken</b>		
Nothing	121	66.12%
1	29	15.85%
2	17	9.29%
3	7	3.83%
4	2	1.09%
5	2	1.09%
6	2	1.09%
7	3	1.64%
8	0	0.00%
9	0	0.00%
10	0	0.00%
more than 10	0	0.00%
Answered question	183	
Skipped question	5	

**Table 2: General Information of used medication.**

No.	Answer Options	Complete information	Incomplete information	Weak information	do not have this information	does not need this information	Rating Average	Response N
1	The generic name	86	31	19	16	21	3.84	173
2	The trade name	86	40	16	10	19	3.96	171
3	The drug strength	86	42	15	12	18	3.96	173
4	Dosage form	111	21	14	8	18	4.16	172

answered question: 185 and skipped: 3

**Table 3: Basic information of medication knowledge used.**

No.	Answer Options	Complete information	Incomplete information	Weak information	do not have this information	does not need this information	Rating Average	Response N
1	Drug Indication	121	38	6	3	18	4.30	186
2	How to use the medications	142	19	4	2	18	4.43	185
3	Medication administration time	142	19	2	5	18	4.41	186
4	What to do if I forgot one dose	97	36	13	20	19	3.93	185
5	Adherence to medication and it is important	136	23	3	5	17	4.39	184
6	The time to stop treatment	114	34	7	15	16	4.16	186

answered question:186 and skipped question:2

**Table 4: Drug Information sources.**

patient trust		
Answer Options	Response N	Response %
Health practitioners	123	67.96%
Drug Bulletin	126	69.61%
Relatives and friends	24	13.26%
The Internet	108	59.67%
Drug Information Center at the hospital	36	19.89%
lectures in hospital	22	12.15%
Lectures in health center	9	4.97%
Drug education in markets Exhibition	12	6.63%
Other (please specify)	17	9.39%

answered question: 181 and skipped question: 7

raised does indeed need to establish those programs. Does that need to include the physicians or nurses? What is the actual demand for medication knowledge from those programs? The investigator tried to explore the primary medications knowledge of the healthcare care professionals in Kingdom of Saudi Arabia. The finding of the study showed that healthcare care professionals had acceptable primary knowledge of medications that have included generic names, trade name, drug strength, dosage forms. That is typical finding because most responders were a pharmacist with adequate medications knowledge. Also, there are medication safety courses delivered to all physician and nurses through pharmacy and some of the hospital had computerized order entry that helps all healthcare care professionals to remember the primary knowledge of medications. The results of dose strength almost resemble what has reported by Simonsen B *et al.* of nursing knowledge of medications, other healthcare professionals could not compare with them because no study exists about knowledge of medications.<sup>[5]</sup> The

others finding of a study of knowledge of medications indication, usage of medications, administration times, the instruction if medications missed by the patient, drug compliance and duration of therapy is right knowledge of medications and better than a generic name, trade name, drug strength and dosage forms. That expected because most of healthcare professionals education the patient with that information and rarely mentioned drug name or strength. Also, the daily practice information deal with that information with the medical team to prevent any medications related problems may occur in the patients. The finding of Administration time is better that's what reported by Jodlowski T *et al.* because the majority of medications were anti-hypertensive and anti-diabetic medications more popular and common usage in the comparative study as Antiretroviral medications.<sup>[13]</sup> Others finding with healthcare professionals does not exist in the studies. The finding of sources of medications knowledge of healthcare professionals was Drug bulletin and internet with deficient percentage of drug information centers that is due to drug leaflet and internet more natural way to get the medications knowledge and especially with more usage of the new technology of mobile devices. Also most of the healthcare professionals are familiar with drug information services in the hospital or take time to answer the question or the healthcare professionals though that is is comfortable and does not bother the drug information centers to get the information and prefer to ask the complicated inquiries. Our finding is different from Salhia H *et al.* report about the generic medications and most of the physicians get the information from a medical representative. Because the general information about medications is more common and very easy to get them from drug bulletin or through the internet and more common and more accessible than the generic medications available in the countries, so they need information from the manufacturer.<sup>[6]</sup> The healthcare professionals had proper medications knowledge with missed some elements, the sources of information need more education to healthcare professionals to choose the appropriate resources of drug information with an emphasis on awareness of drug information services in the hospitals is highly recommended.

## CONCLUSION

The Healthcare professionals missed some essential drug information knowledge. The healthcare professional's demand for basic drug information courses including medication safety and awareness of drug information services at Ministry of Health hospital in Kingdom of Saudi Arabia.

## ACKNOWLEDGMENT

None

## 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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