

Healthcare Professional's Knowledge about Drug Related Problems in Saudi Arabia

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Abstract

Purpose: To explore Healthcare professionals and Knowledge about Drug-related problems 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. Medline Plus health information and Daily Med-INH elements information from National Institute of Health United State of America were used. The survey 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 two : healthcare professional's information about the drug-related problem 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 pharmacist 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 good knowledge either complete or incomplete information about the adverse drug reaction either a general side effect of medications 135 (74.2%) or potential adverse event about their medications 128 (69.9%). More than half of responders were familiar with drug overdose behaving 112 (60.86%) or first aid of drug poisoning 112 (61.87%). The responder showed not adequate awareness of contraindication of medicines used with other diseases condition 117 (63.24%), drugs 113 (61.74%), food 119 (64%) or laboratory test 120 (64.51%) and 103 (56.6%) with the herbal drug. The responders showed adequate knowledge either complete or incomplete information about the use of medications for children 131 (71.2%) or elderly 128 (69.56%), drug use during pregnancy 132 (72.1%) or breastfeed 128 (69.56%). **Conclusion:** One-third of healthcare professionals were not familiar with essential drug-related problems information. It is critical toward drug misadventures and cost burden in the society. Very comprehensive and urgent implementation of the healthcare professional's education program about medications required in Saudi Arabia.

Key word: Healthcare professional, Knowledge, Drug-related problems, Ministry of Health, Saudi Arabia.

INTRODUCTION

The drug-related problems are a very critical element in the management of the acute or chronic diseases. The drug misadventures are potential and may lead to an emergency visit or hospital admission.^[1-3] Also, may implicate critical care admission or permanent disability or death with the high economic burden on the healthcare system. The healthcare professionals included all type of physicians, pharmacists or nurses and had significant role in preventing the drug-related problems. To prevent drug misuse, it needs a first medication-related problems knowledge and background. A

healthcare provider can improve the use of medicines or can increase their maladies and problems. The main reason is to provide the drug users with all the necessary information they need to prevent Drug-related problems and reduce them as much as possible that this is one of the most significant problems that may concern the use of medications. Adverse drug reactions are global problems of significant concern.^[4] Patients with not adequate or wrong information regarding the medication can lead to the incorrect use of medications that caused a reduction in its efficacy or other health problems. They should also, make the patient more aware of how to use the

medication, dosages and side effects. That may result from the medication used and the proper way to deal with it. Because Patients with negative attitudes towards their illness can be unwilling to follow the advice in their management plans. The usage of Patient's knowledge of medication is not in the prevention of drug-related problems; but also a sign to influence the treatment success with an opportunity for one to attain a full health potential.^[5] The increasing dependence on medication therapy as the primary intervention for most diseases. The patients receiving medications are more susceptible than ever to potential harm adverse drug events (ADEs) and medication errors. Few investigations disused Healthcare care professionals and medication knowledge including drug-related problems.^[6-7] Most of the studies discussed each specialty alone or combined with all drug knowledge elements. Moreover, it hard to find local or Gulf and Middle East counties trail about healthcare professional's knowledge on drug-related problems. The objective of the study to explore knowledge background of healthcare professionals 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 included 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.^[2-3] 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 message reminder was sent to healthcare professionals after two weeks and additional message reminder was sent to healthcare professional after four weeks. The survey was made in an electronic format and it analyzed domain two healthcare professional's information about the drug-related problem 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 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 pharmacists 93 (71.54%), followed by nurses 18 (13.85%) and physicians 15 (11.54%). The most responders qualification was the Bachelor Degree 126 (67.02%) followed by Diploma 33 (17.55%) and Master degree 22 (11.70%) 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 17 (9.29%) as explored by Table 1. The healthcare professionals showed good knowledge either complete or incomplete information about the adverse drug reaction either a general side effect of medications 135 (74.2%) or potential adverse event about their medications 128 (69.9%). More than half of responders were familiar with drug overdose behaving 112 (60.86%) or first aid of drug poisoning 112 (61.87%) as explored in Table 2. The responder showed not adequate awareness of contraindication of medicines used with other diseases condition 117 (63.24%), drugs 113 (61.74%), food 119 (64%) or laboratory test 120 (64.51%) and 103 (56.6%) with the herbal drug as explored in Table 3. The responders showed adequate knowledge either complete or incomplete information about the usage of medications

Table 1: Demographic responder qualifications information.

| Characteristics | Response N | Response % |
|--|------------|------------|
| Sex | | |
| Female | 120 | 63.83% |
| Male | 68 | 36.17% |
| Answered question | 188 | 100% |
| Skipped question | 0 | |
| Nationality | | |
| Saudi | 177 | 95.16% |
| Non-Saudi | 9 | 4.84% |
| Answered question | 186 | 100% |
| Skipped question | 2 | |
| Age | | |
| <18 | 5 | 2.66% |
| 18 - 29 | 112 | 59.57% |
| 30 - 44 | 51 | 27.13% |
| 45 - 59 | 19 | 10.11% |
| 60+ | 1 | 0.53% |
| Answered question | 188 | 100% |
| Skipped question | 0 | |
| Healthcare professional | | |
| 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 | |
| Total Experiences | | |
| 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 | |
| The current medications | | |
| 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 | 125 | 66.49% |
| Others | 27 | 14.36% |
| Answered question | 188 | 100% |
| Skipped question | 0 | |
| No. of current medication | | |
| 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 and skipped question:5 | | |

Table 2: Adverse drug reaction information of medications used

| No. | Answer Options | Complete information | Incomplete information | Weak information | do not have this information | Does not need this information | Rating Average | Response Count |
|-----|--|----------------------|------------------------|------------------|------------------------------|--------------------------------|----------------|----------------|
| 1 | The adverse drug reaction information | 90 | 45 | 20 | 13 | 14 | 4.01 | 182 |
| 2 | The potential or dangerous adverse drug reaction | 79 | 49 | 21 | 18 | 16 | 3.86 | 183 |

Answered question:184 and skipped question 4

The overdose or poisoning management information of medications used

| No. | Answer Options | Complete information | Incomplete information | Weak information | do not have this information | Does not need this information | Rating Average | Response Count |
|-----|---|----------------------|------------------------|------------------|------------------------------|--------------------------------|----------------|----------------|
| 1 | The information of facing of drug overdose or poisoning | 52 | 60 | 24 | 35 | 13 | 3.56 | 184 |
| 2 | The first aid when poisoning occurs | 52 | 60 | 27 | 30 | 12 | 3.61 | 181 |

Answered question:184 and skipped question 4

Table 3: The contraindications information on medications 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 | The usage of medications with diseases are forbidden | 70 | 47 | 25 | 20 | 23 | 3.65 | 185 |
| 2 | The use of medication with other drugs are forbidden | 69 | 44 | 29 | 24 | 17 | 3.68 | 183 |
| 3 | The use of medicines with certain foods are forbidden | 64 | 55 | 21 | 27 | 19 | 3.63 | 186 |
| 4 | The use of medicines with Laboratory tests are forbidden | 62 | 58 | 19 | 27 | 20 | 3.62 | 186 |
| 5 | The use of medicines with herbs are forbidden | 47 | 56 | 25 | 35 | 19 | 3.42 | 182 |

Answered question:186 and skipped question 2

Table 4: The medication information used in a particular situation

| 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 medication used for children | 78 | 53 | 24 | 8 | 21 | 3.86 | 184 |
| 2 | The medication used for elderly | 66 | 62 | 26 | 10 | 20 | 3.78 | 184 |
| 3 | The medication used for pregnancy | 84 | 48 | 15 | 12 | 24 | 3.85 | 183 |
| 4 | The medication used for breast feeding | 75 | 53 | 16 | 14 | 26 | 3.74 | 184 |
| 5 | The medication used for sport | 55 | 57 | 25 | 26 | 20 | 3.55 | 183 |
| 6 | The medication used for practicing job | 71 | 48 | 25 | 19 | 21 | 3.70 | 184 |

Answered question:184 and skipped question: 4

for children 131 (71.2%) or elderly 128 (69.56%), drug use during pregnancy 132 (72.1%) or breastfeeding 128 (69.56%). In addition to during exercises 112 (61.2%) or practicing the job 119 (64.67%) as explored in Table 4.

DISCUSSION

The General Administration of Pharmaceutical Care in Ministry of Health founded the updated pharmacy strategic plan to prevent drug misadventures and prevent harm to the patients.^[8] Several programs are involved in this area for instant medication safety program, medication reconciliation services, follow up and documents drug quality reporting system.^[9-10] Also, the new

edition of Saudi Center for Organization Accreditation standards release the mandatory Essential Requirements Standards (ESR) to implement at all hospitals to prevent any mistakes or drug-related problems to reach the patients. Not taking own medicines as a prescribed lead to less therapeutic outcomes or under or overdose-related problems. It can result in additional medication intake, with unnecessary investigations or hospitalization.^[11] All those foundation elements need to improve the drug-related problems information and knowledge background of healthcare professionals. The investigator tried to explore the actual healthcare provider's knowledge of drug-related problems. The findings showed that only two third of The healthcare professionals showed good knowledge about the adverse drug

reaction related issues while half of them had knowledge of medications contraindications with disease or drugs or food and laboratory test or herbal medication. It was concluded that there was not appropriate background information with healthcare professionals and may be implicated with patients management and not monitored to well treating of drug-related problems occurs with the patient then raise the economic burden on health care system. The results resemble what reported by Jodlowski, TZ *et al.* with knowledge of pharmacists about drug related problems.^[12] The others finding of drug-related knowledge including use of medications with pediatric or geriatrics or during pregnancy and breastfeeding had adequate knowledge due to a high-risk population and any mistake will harm the patient and healthcare knew necessary to avoid that has occurred. The results were better than what reported by Jodlowski, TZ *et al.* with knowledge of pharmacists about drug during pregnancy,^[12] because most patients were not taking Antiretroviral medications. The finding of medications knowledge during sport or unique jobs showed not adequate level because most of our patient does not practice exercises during lifestyles and health information with the job not existed at most of the times, also, most of governmental or privates job they do not practice healthcare information at their situations. It could not compare with other studies due to most of the investigations not mentioned all the findings. Moreover, this considered as a serious and that indicates the misuse of medicines, resulting in a substantial burden on the cost and negatively affects society. Given the constraints on consultation times within general practice, it may be reasonable to consider alternative information sources as more suited to providing the depth and detail of information required,^[13] that may reduce the Drug-related problems. The pharmacists should often verify patient understanding verbally, these methods may typically provide evidence about what patients learn.^[14] It may be helpful in reducing drug-related problems. So, it needs a comprehensive and very urgent program of vocational education in the field of healthcare about the required medicines in Saudi Arabia.

CONCLUSION

Healthcare professional including physicians, pharmacists and nurses had a deficiency of medication knowledge of drug-related problems. Targeting of education and training of healthcare providers with emphasis on knowledge about drug-related problems is highly recommended at all governmental and private healthcare organizations in Kingdom of Saudi Arabia.

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None

CONFLICT OF INTEREST

None

ABBREVIATION

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

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