Quality Use of Medicines among Makkah Residents, Saudi Arabia

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ABSTRACT

Introduction: Quality Use of Medicines (QUoM) is of utmost importance regarding the safety and overall healthcare of the consumers/patients. This study aimed to explore the general usage pattern and attitude of the Makkah community about the safe use of medicines i.e. QUoM.

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Methods: Face to face interviews were done to administer questionnaires among patients from two hospitals and four primary care centers dealing with patients from rural and urban areas in the Holly Makkah region.

Results: A total of 554 patients were enrolled while the majority of them were lived in urban areas (n=457,82%). Around 419 (76%) responder were females and 531(96%) were living with their family and had up to college education (n=174,31%). We found that most of the respondents were diabetic (185,33%) and hypertensive (n=172,31%). Most of the patients (207,37%) stated that they preferred to get drug information from healthcare professionals.

Conclusion: This periodic mapping of appropriate medication usage among patients/consumers is indeed an important effort to explore issues on QUoM.

1. INTRODUCTION

Since the existence of mankind, medicines have become essential for reducing mortality and morbidity from various diseases, but the availability of medicines does not guarantee that the patients or healthcare workers use them appropriately. To achieve a holistic process of medication use, many nations are promoting the concept of QUoM. This can be defined as 'patients receive medications appropriate to their clinical needs, in doses that meet their requirements for an adequate period, at the lowest cost to them and their community [1].

The inappropriate use of drugs can lead to poor or negative health outcomes, increased adverse events, and increased health costs among healthcare consumers around the world [2-5]. In 2000, drug-related costs were more than 177 $ billion estimated for the annual costs of drug-related illness and death in ambulatory care settings [6]. A report by the Institute of Medicine on 'Preventing Medication Errors' (2006) estimated that more than 1.5 million people are injured by medication errors each year incurring a cost of about 3.5$ billion [7].

A study in Malaysia reported that 55.6% of the public or consumers did not understand the proper use of their medicines [7]. Such as maximizing health outcomes, reducing adverse events and keeping the health costs within the affordable limits are the initiatives that are being implemented to improve the use of medicines. Consumer behavior influences medication use; it is important to introduce strategies to promote rational drug use [8]. The Ministry of Health developed a comprehensive "National Strategy for Quality Use of Medicines-Consumers (QUM-C)". It campaigns under the slogan 'Know Your Medicine 'to promote effective self-care. Effective self-care involves: diagnosing the condition and its cause, selecting proper drug therapy and monitoring treatment effectiveness.

Currently available medications, both prescriptions, and non-prescriptions allow greater potential in decision making for patients acting with and without direct guidance by healthcare providers. Therefore, the main goal of our study was to find out the knowledge and perceptions about the appropriate use and provision of medications among Makkah community members.

2. METHODS

This cross-sectional study for 4 months was carried across the Makkah region. The questionnaire used in this study was developed and tested for the validity of its content with 50 patients (10 from each setting). The final version of the questionnaire consisted of six major parts including demographic data of respondents, the pattern of diseases, pattern of medication use, access to medicines, patient understanding of medicines and sources of medication information.

Based on the 99% confidence interval and margin of error of 5%, using a sample size calculator, 548 participants were needed. As a community-based survey with an estimation of a 70% participation rate, the estimated sample size required was around 554 individuals [9]. For this study, a total of around 554 respondents were surveyed. All interviews were conducted face to face by trained data collectors. The inclusion criteria set were participants age 18 and above, non-hospitalized, provided consent to participate and residents of the Holly Makkah region. And those who did not fulfill the inclusion criteria were excluded from the study. All the data received were analyzed using Statistical Package for the Social Sciences (SPSS) version 22. Descriptive statistics were applied to see the differences among study variables and their relationship to the outcomes.

3. RESULTS

3.1 Demographic Characteristics of Respondents

A total of 554 respondents from all five settings across the Makkah region were surveyed during the study and included in the data analysis. The proportion of male participants was 24 % (n=135) while 76% were females (n=419). Saudi participants consisted of 70.3% (390) of the whole sample, while 65 (11.7%) of the participants were Pakistanis, 40 (7.2%) were Indians, 35 (6.3%) were Egyptians and 24 (4.3%) were of other ethnics (Table 1).

In terms of education, 113 (20%) of them only had primary school level of education, 157 (28%) were educated until the secondary level, while 110 (20%) of them did not receive any formal education. About 78% (n=435) of the participants were government employees while private-sector employees made up of 5% (n=30) of the participants. The majority of the participants (n=531; 96%) lived with their families. Participants were mostly living in urban areas (n=457; 82%). Most of the respondents (n= 390; 70.3%) were Saudis (Table 1).

3.2 The Pattern of Chronic Diseases and Medications Use

Table 2 shows the types of common diseases among respondents in general. Majority of the patients were suffering from hypertension (n=172; 31%), diabetes (n=185; 33.4%) and with hyperlipidemia (115; 21%). Approximately, 55.8% of the respondents reported being on chronic medicines while 50.4% of the respondents were taking vitamins and 12% on hormonal therapy. Interestingly, the use of antibiotics and processed herbs was reported in 23% and 45% of the respondents respectively as self-medication.

3.3 Access to Medications

From Table 3, more than half of the respondents (77.1%) claimed that they would consult government doctor first if they experienced any health problems, while least consult community pharmacists (n=8; 1%). Besides, it was found that the majority of respondents usually obtain medicines from the governmental hospital (97%), Clinics (84%) and community pharmacies (82%).

3.4 Perception of Medications Labels

Generally, the majority of respondents did not find any difficulties in reading medicines labels obtained from governmental hospitals and were satisfied with the information given on label form governmental hospitals (47%) as compared to label from a community pharmacy (11%). Interestingly, the governmental hospitals were at the highest satisfaction ratio among respondents in terms of adequate label information and less difficulty in reading (Table 3).

3.5 Awareness towards Appropriate Use of Medicines

We found (n=156; 28.2%) of patients claimed that they were able to identify medications by trade name or generic name. More than half of patients completely understand the proper use of medicine (n=341, 61.6%) in terms of dose, frequency, method of administration, side effect, monitoring and interaction (Table 4).

Only 56% (310) of patients were aware of the medicines side effect and 62 % cheeked expiry date of their medicines. There are 39.4% (218) of respondents aware of drug-food interactions. Also, 37% (n=206) of respondents were aware of drug-drug interactions. Out of 554 of the study population, (409, 73.8%) know the correct way of medicine storage and (403, 72.7%) kept them according to a specific temperature (Table 4).

Up to 52% (293) of the respondents ever missed taking their medication as prescribed. The majority (47.3%) reported having ever chosen not to take prescribed medicine as indicated (Table 4).

More than half of the participants (n=353; 63.7%) claimed that they will consult the doctor as their first point of referral. Most of the participants (n=285; 51.4%) get information easier from the government doctor (Table 5).

3.6 Assessment of Medications Information Resources

Most of the consumers stated that they never obtained medicines information from printed materials (n=443; 80%), While Modern healthcare professionals remained a viable source of medicines information for some (n= 207;37.4) of the respondents. Almost (n=317; 57.2%) need written medicine information and need more counseling about (n=327; 42.8%) the total figure was (n=67; 12.1%) (Table 6).

Table 1. Descriptive characteristics of respondents

Demographic characteristics	n (%)
Settings	
Maternity and Children Hospital	189 (34)
Hera general hospital	141 (25)
Al-Eskancenter	52 (9)
Al-Awalecenter	43 (8)
Al-Jamooum center	37 (7)
Al-Nawaryah center	92 (17)
Area	
Urban	457 (82)
Rural	97 (17)
Gender	
Male	135 (24)
Female	419 (76)
Nationality	
Saudi	390 (70.3)
Pakistanis	65 (11.7)
Indians	40 (7.2)
Egyptians	35 (6.3)
Others	24 (4.3)
Age	
18-24	68 (11)
25-34	123 (21)
35-44	120 (20)
45-54	123 (21)
55-64	99 (17)
>65	63 (11)
Living Status	
Single	18 (3)
With family	531 (96)
Without family	5 (1)
Working	
Government	435 (78)
Private or Self Employment	30 (5)
Retired	45 (8)
Student	44 (8)
Education	
Primary School	113 (20)
Secondary School	157 (28)
College/University	174 (31)
No Formal Education	110 (20)

4. DISCUSSION

4.1 Medicine Use and Expenditure among Makkah Community

The majority of the respondents in this survey reported being on chronic medicine while up to about half of the respondents were taking vitamins, minerals, and supplements. Among the chronic diseases found across the country, Diabetes Mellitus and hypertension were reported to be of the highest prevalence followed by other cardiovascular diseases, Thyroid Disorder and Asthma.

In Saudi Arabia, the prevalence of chronic diseases like hypertension diabetes, heart diseases, genetic blood disorders, cancer and childhood obesity, are at an alarming stage where their treatment is too costly and even sometimes becomes ineffective as well [10,11, 12]. The use of traditional medicines in the form of herbs was found in 45.1% of the survey respondents. Because most of the respondents in this survey were female, up to 11% of them

claimed to consume beauty care products. This shows that consumers in Saudi Arabia are widely using pharmaceuticals not only to manage their health but also to enhance their vitality and appearance.

4.2 Knowledge of Medicine Use

Despite the extensive pharmaceutical use among the survey respondents, more than half of them did not fully understand the proper use of medicine and were unable to identify their own medicine by the trade or generic name [13].

However, most respondents were aware of the side effect and medicines' shelf life and storage condition but were not aware of food-drug and drug-drug interactions. As expected, approximately a quarter of respondents did not know the generic name of their medicines, which may lead to increase risk of taking an overdose or getting toxicity to respondents who make more than one of non-prescribed medicines which have the same active ingredients.

4.3 Self-assessed Use of Medicine

It is widely acknowledged that patients seldom comply with instructions on the use of medication or treatment. Prior reviews have estimated the extent of patient default at 20% to 82% [7]. This survey highlighted the same; a high proportion of

consumers reported that they had ever forgotten to take their medication at some point in their lives. Consumers who lack insight into their disease do not fully understand the treatment plan or perceive any benefits from taking medicine as prescribed are expected to be less compliant.

In this survey, there was a higher proportion of Saudi respondents who reported having chosen not to take prescribed medicine. Furthermore, the negative implication of sharing medicine is tantamount to using medicines without a prescription. While self-medication is benign and might be beneficial up to a certain extent, sharing of medications without professional supervision puts patients at an increased risk of harm arising from medication error [7,8,11-14]. In this survey, the sharing of medication was found to be notably more prevalent in respondents (42.4%), also found most of the respondents were always forgetting or not taking their prescribed medication as indicated.

4.4 Sources of Information

The majority of the respondents still prefer to consult doctors as their reference point on issues concerning medicine. This could be explained in part by the evolution of the Health care profession which is largely dominated by the

Table 2. Pattern of chronic diseases and prescription and non-prescription use among respondents

Chronic diseases and medication use	n (%)
Chronic diseases	
Hypertension	172 (31)
Angina	21(4)
Hyperlipidemia	115(21)
Diabetes mellitus	185(33)
Asthma	64(12)
COPD	5(1)
Thyroid disorders	68(12)
Obesity	43(8)
Others	180(34)
Medications use	
Chronic medications	309 (56)
Vitamins	279 (50)
Herbs	250 (45)
Beauty care products	61 (11)
Analgesics	214 (39)
Blood-thinning agents	147 (26)
Hormonal therapy	67 (12)
Antimicrobials	130 (23)

doctors [7]. We found result nearly similar to Malaysian study when asked about the ease of obtaining information on drugs, approximately 78.3% felt that it was easier to obtain information from government and private doctors compared to community pharmacists (22.6%) and the least was from government pharmacist (13.2%) that indicate the respondents had low trust in the knowledge of hospital and community pharmacists.

With the advent of technologies, Up to 35.2% of the respondents frequently obtained drug information from the internet and mass media (e.g. TV and radio). And approximately 21.2% of respondents obtained drug information from their friends and family' members. There remained some proportion of consumers who sought consultation and medicine information from traditional and complementary practitioners.

Almost 57.2% of respondents needed additional written medicine information and the Majority of respondents reported that they require additional counseling from their pharmacists. This is reflective of the expansion of pharmacists' role in

Table 3. Access to medications and perception towards medicines use among respondents

Variables	n (%)
If you are experiencing any health care problem, what is the FIRST action that you will take?	
Consult government doctor	427 (77)
Consult private doctor	118 (21)
Consult community pharmacists	8 (1)
Access to medications	
Governmental hospital	536 (97)
Private Clinic	468 (84)
Community pharmacy	452 (82)
Respondents who read information on medicine labels	
Do you read the information on your medicine labels	316 (57)
Are you given adequate information your medicine labels	329 (59.4)
Respondents who have trouble reading labels	
Governmental hospital	98(17.7)
Private hospital	64(11.6)
Community pharmacy	51 (9.2)
Primary care center	75 (13.5)
Respondents satisfied with the information on labels	
Governmental hospital	261 (47)
Private hospital	115 (21)
Community pharmacy	60 (11)
Primary care center	105 (19)

Table 4. Ability of respondents to identify medicines by trade/generic name, medicines' side effect, shelf life and drug interactions

Respondents knowledge and perceptions	n (%)
Medicines name is the name of active ingredients	156 (28)
The side effects of medicines	310 (56)
Aware that all medicines have an expiry date	345 (62)
Aware that there are medicines and food not taken together	218 (39)
Aware that there are medicines not taken together	206 (37)
Know the correct way of medicines storage	409 (74)
Know that all the medicines have to keep in a specific temperature	403 (72)
Assessment of medications compliance	
Have you ever forgotten to take medications	293 (53)
Have you ever chosen not to take a prescribed drug	262 (47)
Have you ever shared any medicines with other	235 (42)

Table 5. Who will be the first person that you consult concerning medicines?

The first person that you consult	n (%)
Doctor	285 (51)
Pharmacist	101 (18)
Nurse	8 (1 %)
Family Member	50 (9%)

Table 6. Various drug information resources in the Makkah community

Information resources	Seldom	Never	Often
Printed materials (magazines, newspaper)	56 (10)	443(80)	55 (10)
Internet	77 (14)	350 (63)	127 (23)
Common information and entertainment channels (TV, radio)	75 (13)	411 (74)	68 (12)
Modern healthcare professionals (doctors, pharmacists, nurses)	69 (12)	278 (50)	207 (37)
Traditional and complimentary practitioners (*attaar*)	59 (11)	464 (84)	31 (6)
Friends, family and neighbors	45 (8)	392 (71)	117 (21)

inpatient care in the healthcare system in Saudi Arabia. The increase in the number of pharmacists in both the public and private workforce has translated into the provision of more pharmaceutical care services such as medication management therapy [7].

5. CONCLUSION

This study concluded that patients' knowledge regarding medication use in Makkah is not that good and need some educational strategies to improve medication use. We suggest establishing pharmacist-led drug information services at discharge and community level to enhance patients' knowledge and perceptions regarding medications.

6. LIMITATIONS

We did not include an economic perspective for patients in the study based on the assumption that most of the patients receive their medication complementary by the Ministry of Health. This study needs to expand in other regions of Saudi Arabia to explore its pattern of medication use and attitude.

CONSENT

Consent was taken from the participants to participate in the study.

ETHICAL APPROVAL

The study was approved by the concerned authorities.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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