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### An exploration of Self-medication Practice in Sana'a City, Yemen

Sami Mohammed Albawani, Yahaya Bin Hassan, Noorizan Abd-Aziz, Shubashini Gnanasan

*Department of Pharmacy Practice, Faculty of Pharmacy, University Teknologi MARA, Malaysia.*

\* Corresponding author: Tel. +60122877774; E-mail address: shubashini@salam.uitm.edu.my

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#### Introduction

The practice of self-medication is an important response to illness that can be controlled in its early stage.<sup>1</sup> Even though self-medication has been a common practice worldwide, the inappropriate use of drugs has been related to many serious health conditions. The irrational use of drugs can lead to serious side effects, toxicity and drug interactions or could delay accurate diagnosis and treatment. Moreover, there is a worldwide concern about the resistance of microorganisms toward antibiotics in people misusing oral antibiotics. In Yemen, many drugs are dispensed without any medical supervision. It is common and easy for Yemeni patients to obtain a variety of medications including almost any type of antibiotics and some psychiatric drugs without a prescription.<sup>2</sup> Community pharmacists are expected to have the necessary knowledge to give advice on safe and appropriate products. However, it was stated by the ministry of public health and population that the profession of pharmacist in Yemen has become less trustworthy and less reliable.<sup>3</sup> Regardless of the intensive research spent on self-medication, little information has been available about its major deterrent. Very few studies about self-medication In Yemen were found in literature. The purpose of this study is to determine the underlying reasons, illness treated and source of acquisition during self-medication and to investigate the perception of consumers toward the role of community drug dispensers and health authorities in self-medication practice.

#### Methods

A permission to carry out this study was obtained from UiTM Research Ethics Committee on the 30th of April 2015 (reference number 600-RMI (5/1/6) and the health office in Sana'a City, Yemen. An in depth, semi-structured interviews including a series of open-ended questions were conducted through a purposive sampling on twenty consumers attending community pharmacies in Sana'a City. A topic guide conducted at a time and place convenient to participants was developed and questions were adopted from another study.<sup>2</sup> Once the topic guide was developed, it was evaluated by four academic staff, translated from English to Arabic and pre-tested on a sample of four Yemeni students studying at Malaysian universities. Only participants, who were 18 years old or older, reported self-medication in the last six months and willing to participate were included in the study. The study was described and participants were asked to sign a written consent and to provide an oral consent at the beginning of each interview. All interviews were recorded with a digital voice recorder and all participants were assured about their anonymity and confidentiality. Sampling and interviewing continued until the researcher recognize no new data were forthcoming. The interviews were analyzed similarly through a process of thematic analysis. Completed transcripts of each interview were prepared using Microsoft Word. In the margin of each transcript, abstracted summaries, or notes (i.e. identified theme) were obtained. The initial themes were collected together to begin the coding scheme development, a list of all themes extracted from the transcripts and their proposed codes was made and further sub-coding for emerged data was conducted. Constant comparative technique was employed, which involved going back and forth through the interview transcripts to compare the data from different interviews and to look for repeated or similar themes and subthemes. Quotes from respondents were used to explain illustrated themes.

#### Results

A total of 20 respondents attending 10 different community pharmacies in Sana'a City, Yemen were interviewed. The characteristics of participants, themes and subthemes obtained from respondents' interviews are shown in table 1 and table 2 respectively.

**Table 1** Respondents descriptive analysis.

Respondents characteristics	No. of patients	Respondents characteristics	No. of patients
Age, mean± SD (range)	29.2 ± 6.7(19-38 years)	Smoking	
18-30	11	Smoker	8
31-40	9	Non-smoker	12
Gender		Chewing khat	
Male	10	Chewer	9
Female	10	Non-chewer	11
Marital status		Medical insurance availability	
Married	15	Yes	3
Single	5	No	17
Education level		Self-medication with antibiotics	
High school	4	Yes	16
Degree	16	No	4

**Table 2** Themes and subthemes obtained from respondents' interviews.

Themes	Subthemes	Selected quotes
Self-medication practice among respondents	Reasons for self-medication practice.	<i>There is no need to visit the doctor for common illnesses. (Leen, 20 years, female)</i> <i>I do not really trust most of the doctors in Yemen! (Omar, 38 years, male)</i>
	Common drugs used and conditions treated.	<i>I used medications for pain and medications for stomachache, diarrhea, respiratory tract infections, allergy, and acidity. (Leen, 20 years, female)</i>
	Advantages and disadvantages of self-medication.	<i>People are poor and that is why they go for self-medication from the first place. (Omar, 38 years, male)</i> <i>If the treatment failed, patient will need to go to hospital which will cost him more money to start a new treatment. Moreover, patient admission to the hospital may cost the government as well. (Ali, 36 years, male)</i>
	Self-medication with antibiotics	<i>Even antibiotics. A lot of pharmacists do not mind dispensing anything for money. (Manal, 23 years, female)</i>
	Responsibility during self-medication.	<i>The pharmacist knows better about side effects and must ask the patient about his medication history and what kind of medications can be prescribed for someone with diabetes or hypertension. (Ali, 36 years, male)</i>
Respondents perception toward health care services in Yemen.	The profession of pharmacists and doctors has become less trustworthy.	<i>Among all drug dispensers in Yemen, for every thousand, I trust only one! (Ali, 36 years, male)</i> <i>Doctors became corrupted by greedy drug companies and prescribe any medication recommended by them. (Yahaya, 36 years, male)</i>
	Poor qualifications of drug dispensers in Yemen.	<i>We have many qualified pharmacists, but their job has been taken over by unqualified people who have some experience or a diploma. (Saleh, 27 years, male)</i>
	Quality of medications is poor.	<i>Most drugs are nearly expired, their efficacy is poor and illegally imported (Nawal, 24 years, female)</i>
	Health care service need to be improved.	<i>The ministry of health must be strict on this matter; only qualified pharmacy graduate should be allowed to work in the pharmacy. (Saleh, 27 years, male consumer)</i> <i>There must be some health campaigns on the television and radio about common health problems and how to deal with them. (Omar, 38 years, male)</i>
Perception toward the effect of smoking and chewing khat on self-medication.	Smoking and khat chewing influences self-medication.	<i>Definitely. I would get a headache, if I do not smoke regularly! (Saleh, 37 years, male)</i> <i>I think so because the moment I start chewing khat, all pain goes away! (Fatima, 28 years, female)</i>

## Discussion

Many important themes were identified which can be used to describe self-medication practice in Yemen and the vital role of health authorities and other health care providers in ensuring safe, rational, and effective medication use. The respondents were interviewed for better insight into self-medication practice in Sana'a City and various findings were reported. Many respondents stated that they use medications without prescription for several reasons including Saving money and time and their lack of trust toward doctors and drug dispensers which was also reported by other studies as well.<sup>2,4</sup> Medications for fever, gastritis, flue, constipation, diarrhea, cough, analgesics, lozenges, vitamins, contraceptive pills and ointments for burns were reported. Similar findings were reported as well.<sup>2,4</sup> The most common source of information and advice during self-medication was the community drug dispenser which was expected as the pharmacy is the main supply for medication. Other sources like family members and media were found to be common in other studies as well.<sup>4</sup> When respondents were asked about health care services provided by drug dispensers in Yemen, all were found to be unsatisfied and many believed that drug dispensers are not doing their job properly. Moreover, all respondents stated that they do not trust health care service provided by drug dispensers in Yemen and two respondents mentioned that for every thousand drug dispensers they only trust one. Similarly, it was stated in the country profile prepared by the ministry of public health and population and WHO that profession of pharmacist in Yemen has become less trustworthy and less reliable.<sup>3</sup> Although these findings were consistent with the results found earlier in this study, other researchers reported that consumer satisfaction with pharmacy services were found to be high.<sup>5</sup>

It was agreed by all respondents that health care services provided by drug dispensers need to be improved and that health care authorities should have a better control and inspection on community pharmacies and to allow only qualified and professional pharmacists to dispense medications. The ministry of higher education and scientific research, pharmacy schools and educational health institutions were considered responsible for the poor qualification of drug dispensers and they were advised to take some action. Such results may confirm and to some extent explain the lack of trust among respondents toward drug dispensers and the same can be said about their opinion regarding doctors as well. In fact, respondents reported being unsatisfied about the doctors' health care service was stated to be less trustworthy. Among other reasons, many respondents believed that most doctors in Yemen are not qualified enough, over prescribe certain medications regardless of patient's need and put profit first, before patient care. Similar findings were reported by other researchers who studied the perception of physicians toward the visit of medical representatives in Yemen. It was mentioned that most of Yemeni doctors complained about being under marketing pressure to prescribe certain medications.<sup>6</sup> Many respondents stated that they have to practice self-medication to avoid the visit to doctor's clinic, some reported they were given wrong diagnosis and others admitted they never visit the doctor unless it is an emergency. One of the critical issues which has been raised by many respondents in this study and reflected the negative perception of many people towards doctors in Yemen is that hundreds of thousands of Yemeni patients have to travel overseas every year for medical treatment. Some respondents believed that people are travelling every day to Jordan, Egypt, India, and other countries because they do not trust the health care services in Yemen and only the poor are left to suffer and die. Such perception towards doctors in Yemen may encourage self-medication practice.

It was confirmed by many respondents that most of drug dispensers are not pharmacists, but either diploma holders or dispensers with some experience only. Most of drug dispensers are believed to have inadequate qualifications and their health care services were reported to be poor. Therefore, all respondents were unsatisfied about the health care services provided by drug dispensers in Yemen and many of them believed that drug dispensers are not doing their job properly. Among other reasons, such perception can be justified by the poor knowledge and qualifications drug dispensers have. According to several respondents, the inadequate medication knowledge may lead to serious consequences and even to death if the wrong medication was recommended during self-medication. Therefore, it was requested that only pharmacists with good qualifications should be allowed to work in pharmacy. These findings were consistent with many studies which have shown that knowledge and education are among the factors which influence self-medication practice.<sup>7</sup> The basic and continuing education for pharmacist was reported to be one of the most important aspects which will determine how significant the contribution of the pharmacist in self-medication practice is.<sup>8</sup> The pharmacists can provide patients with valuable education about lifestyle improvement as part of pharmaceutical care.<sup>9</sup> It was also found by Smith et al. that serious gap knowledge among pharmacist about the safety of certain medications in Australian community pharmacies lead to poor treatment outcomes.<sup>10</sup> Similar study reported knowledge gap among pharmacists and better education regarding epilepsy and its treatment was suggested to be needed.<sup>11</sup> Other studies suggested that pharmacists must be trained to be able to treat minor health problems and that undergraduate curriculum needs to be updated.<sup>12,13</sup>

Chewing khat and smoking were considered as a way of self-medication practice for many respondents and a reason for self-medication for others. It was clearly stated that khat is a medication and that pain, fatigue and toothache will disappear the moment khat chewing started. However, many respondents believed that khat may cause serious health problems including cancer, kidney problems and poisoning. Similarly, some respondents stated that smoking is a great medication for headaches and give them a state of

relaxation and confidence. On the other hand, other respondents believe that smoking is the reason for their respiratory tract infections. Most of the positive perception about khat reported by respondents in this study were confirmed by other studies. It was reported that khat have both analgesic and antispasmodic effects.<sup>14</sup> and that cigarette additives have some pharmacological effects like anti-inflammatory and the possibility of influencing sexual behavior which were believed to be used by tobacco industry to mask symptoms and illnesses associated with smoking behavior.<sup>15</sup> On the other hand, khat chewing and smoking were found to be responsible for many health problems. It was reported that khat chewing may be associated with oral cancer<sup>16</sup>, psychological effects<sup>17</sup>, body weakness and gastrointestinal problems.<sup>18</sup>

The irrational use of medication in Yemen can be clearly seen in the wide range of illnesses treated and the medications used by respondents in this study. Although drug dispensers were reported to be mainly responsible for the irrational use of medications during self-medication practice, it is clearly obvious that health authorities are part of the problem. After all, it is the duty of health authorities to promote awareness toward the rational use of medication among respondents and to make sure that all health care providers are doing their job properly specially in the rural areas where most Yemeni people are lacking access to the most basic health care services. It is the responsibility of health authorities to provide better control and inspection on community pharmacies, clinics and pharmacy institutions and their role in raising awareness about rational medication use among Yemeni people must be highlighted. In addition, the relationship between doctors and pharmaceutical drug companies must be regulated and legally defined by health authorities. Moreover, health care providers, especially doctors and pharmacists should be encouraged to participate more in scientific conferences and training programs to keep up with the latest changes in pharmacy and medicine.

## Conclusion

Self-medication practice may be the main reason behind the irrational use of medication in Yemen. In addition, trust, which is a key component of the patient-drug dispenser-physician relationship was found to be one of the reasons behind self-medication practice among consumers in this study. There is an urgent need to provide the people with health education programs to help them understand about the proper use of the medication and increase their awareness about the risk of self-medication without supervision from qualified health providers. The role of health authorities, community drug dispensers and pharmacy undergraduate education in self-medication practice must be investigated.

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