



## Research Article

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# Perception of Over the Counter Drug Advertising among Pharmacists in Abu Dhabi, UAE

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## Abstract

**Objectives:** The aim of this study was to investigate pharmacists' perception and attitude towards OTC drug advertising in Abu Dhabi, UAE.

**Study design:** A cross-sectional study.

**Methods:** A pre-piloted 35-item questionnaire was distributed to 130 pharmacists, who were agreed to take part in the study from Abu Dhabi Health Authority, UAE.

**Results:** The majority of respondents watched OTC advertisements on the internet (43.1%) and television (35.4%), at least 1-5 times per week. Half of the pharmacists (50.0%) reported that patients interacted with them more than 10 times per week about OTC drugs. Most of the participants (88.5%) thought that advertising makes them aware of new products in the market, and more than half of them (60.0%) admitted that it influences their decisions when patients seek advice.

**Conclusion:** Pharmacists in Abu Dhabi, UAE seem to be less conservative about the subject of drug advertising regarding its impact on their practice. Nonetheless, they are fully aware that such advertisements could lead to undesirable consequences, such as misuse or abuse of OTC products, increased chances of potential adverse events and increased costs.

**Keywords:** UAE; Pharmacists; Perception; OTC; Advertising

## Introduction

Over-The-Counter drugs (also called OTC or non-prescription drugs) are the most important self-medication means used in the treatment of health problems and are defined as drugs that are safe, effective and available at pharmacies without doctor's prescription [1,2]. The change of drug status from prescription only medicine to OTC brings advantages to patients, general practitioners, pharmacists, pharmaceutical companies and the government. Patients can benefit from more effective treatment being readily available to treat a wide range of minor ailments without the need to see their doctors. General practitioners are generally pleased that many minor symptoms can be relieved without their intervention. Pharmacists are better able to provide advice to patients on how to treat minor symptoms, and benefit from the wider profit margins on OTC medicines. Pharmaceutical companies also benefit because they are able to market medicines more freely

and extend the duration of time for which a product is profitable beyond the period of its patent protection. Finally, the government is able to reduce the drug's bill or at least slow down its rate of escalation by allowing patients to pay directly for most of their medicines. However, this trend is also associated with a number of drawbacks. The safety of OTC medicines, their potential to interact with prescribed medicines, the reluctance of patients to describe all their symptoms to a pharmacist and the fact that doctors may be more likely to be unaware of all the medicines their patients are taking and the associated potential problems.

Due to worldwide increases in healthcare cost, self-medication and use of OTC drugs have been dramatically increased over the last decades, both in women and men [3,4]. This increase in the use of OTC may be attributed to drug advertisements and promotion by the pharmaceutical companies through their representatives

[5]. Nearly all general practitioners meet representatives of drug companies and it is estimated that the drug industry spends over £5000 per general practitioner on various activities which come under this heading [6]. Financial incentives, such as payments for participation in post-marketing trials, provision of free samples or supply of heavily discounted products to hospitals as loss leaders are examples of techniques used to increase market penetration [7]. Furthermore, advertisements generally appear in print periodicals, such as journals, magazines, and newspapers, or in broadcast media, such as tele-vision and radio, as well as through telephone systems [8]. In developing countries, owing to inadequate medical services and lack of regulatory control of pharmaceutical products, one can contemplate that the practice of self-medication is worse [9]. Despite the fact that OTC drugs are cheap, effective and relatively safe, they might cause harmful effects on the human body, especially pregnant women. Pregnancy is a condition associated with many physiological changes and some symptoms that require OTC medications, such as nausea, vomiting, constipation, indigestion, back pain, and headache, are very common among pregnant women [10]. Although pharmacists are one of the most accessible health care professionals that can help consumers, including pregnant women, to make the most safe choices about the use of OTC drugs, non-prescription drug advertisements were not able to allow pharmacists to play their vital roles to ensure the safety use of OTC medications [11]. It has been demonstrated in one particular study that drug usage in pregnancy, especially OTC medications, needs special attention because of the concern of potential teratogenic effect of drugs and requires dose adjustment due to physiological changes [9]. Although, self-medication with OTC drugs is common in UAE and most of the Arab world, there is scarcity of data about the real practice and studies on OTC usage in UAE are limited. The objective of this study was to investigate UAE pharmacists' perception and attitude towards OTC drug advertisements.

## Materials and Methods

### Ethical approval

The study procedures were approved by Research Ethics Committee of the University of Sharjah (REC/16/05/25/S).

### Study design and population

The present research was a cross-sectional survey-based study conducted on Pharmacists practiced in selected areas of the Emirate of Abu Dhabi, UAE from January 01, 2018 to May 30, 2018. Sample size was calculated based on the latest WHO core health indicators (2002 estimate) the number of pharmacists in the UAE was 1200, while pharmacist density per 1000 population was only 0.4. In saying that, the latest figures published by the UAE Ministry of Health in 2015, state that an average of 531 pharmacists were registered in the Emirate of Abu Dhabi alone. The minimum effective sample size for this particular study was estimated to be 224, using the online sample size calculator with a confidence interval of 95%, 5% margin of error, and 50% for the expected response distribution.

The purpose of the study was to assess the knowledge and attitude of pharmacists toward OTC drug advertising. In order to be

eligible for the study purpose, the pharmacist should be: licensed by one of the three main health authorities in UAE (Ministry of Health and Prevention (MOH), Health Authority of Abu Dhabi (HAAD), or Dubai Health Authority (DHA)), and practicing in the United Arab Emirates at the time of the study. A verbal consent was obtained from all the participant pharmacists after assuring that they will not be identified by name in any of the study reports and that their confidentiality will remain secure, eventually all considered subjects voluntarily agreed to participate in the study. The survey questionnaire was comprised of 35 items and divided into two main sections: section(I) consisted of 8 items reflecting demographic and general information, and section(II) was divided into 3 subsections with total of 27 items including questions about pharmacist's beliefs, attitude and opinions regarding OTC drug advertising. The questions were assessed according to 5-level Likert scale (Strongly agree, agree, neither agree nor disagree, disagree, strongly disagree).

### Validity and reliability testing

To ensure the face validity of the series of questions prepared for this study, the questionnaire was submitted to a group of 3 individuals from the college of pharmacy, community pharmacists, and two academicians. All their views and comments were considered and incorporated into the final version of the questionnaire. To assess test-retest reliability, the questionnaire was sent on two separate occasions to 10 individuals randomly chosen in an area of study interest. A second response was elicited three weeks after the initial test. No problems were highlighted, and test-retest reliability was calculated using Spearman's correlation coefficient ( $r$ ). The rho value was 0.87, which implies an acceptable level of test re-test reliability. The Cronbach's alpha coefficient was 0.798; indicating that all of the items included make a valid contribution to the overall score. An acceptable Cronbach's alpha value is  $\geq 0.7$  was considered a reliable scale.

### Statistical analysis

The participants' responses were encoded, and the data were analyzed using Statistical Package for the Social Sciences (IBM SPSS Statistics for Windows, version 20.0, IBM Corp., Armonk, NY, USA). Participant's responses options to the survey questions were reduced to three categories: 'agree', 'disagree', 'neither agree/disagree' and 95% CI for single proportion for "Agree" was calculated.

## Results

A total of 224 surveys were distributed, of which 130 were returned, giving a response rate of 58.03%. There was almost an equal proportion of males and females, with (67; 51.5%) of the participants were males, and (63; 48.5%) were females. Most of the surveyed pharmacists were working in large-chain pharmacies (44; 33.8%). Approximately (38; 29.2%) of the participants worked in independent pharmacies, with almost three quarter (94; 72.3%) of respondents have 1-10 years practicing experience. OTC advertisements on internet and television were mentioned as important sources of OTC drug advertisement by (56; 43.1%) and (46; 35.4%) pharmacists, respectively. About (89; 68.5%) of respondents reported seeing OTC drug advertisements at least 1-5

times per week. Interestingly, half of the pharmacists (65; 50.0%) proclaimed that patients interacted with them more than 10 times per week about OTC drugs. However, majority of the respondents

(85; 65.4%) reported that they have less than 500 prescriptions per week. Table 1 summarizes the sociodemographic characteristics of participants.

**Table 1:** Socio-demographic data of the participants (n=130).

Characteristic	Frequency (%)
Gender	
Female	63 (48.5)
Male	67 (51.5)
<b>Number of years practicing as a pharmacist:</b>	
1 - 10 years	94 (72.3)
11 - 20 years	24 (18.5)
21 - 30 years	7 (5.4)
> 30 years	5 (3.8)
Practice Setting	
Independent pharmacy	38 (29.2)
Small chain pharmacy	32 (24.6)
Large chain pharmacy	44 (33.8)
Hospital pharmacy	16 (12.3)
<b>Number of times the pharmacist sees otc drug advertisement per week</b>	
Never	8 (6.2)
1 - 5 times	89 (68.5)
6 - 10 times	16 (12.3)
> 10 times	17 (13.1)
<b>Common Sources of OTC Drug Advertisement</b>	
Television	46 (35.4)
Magazines/ Newspapers	19 (14.6)
Internet	56 (43.1)
Radio	6 (4.6)
Other	3 (2.3)
<b>Number of patient-pharmacist interactions about OTC per week</b>	
Never	9 (6.9)
1- 5 times	37 (28.5)
6 - 10 times	19 (14.6)
More than 10 times	65 (50.0)
Weekly prescription volume	
< 500 prescriptions/ week	85 (65.4)
500 - 1000 prescriptions/ week	31 (23.4)
1001 - 1500 prescriptions/ week	9 (6.9)
1501 - 2000 prescriptions/ week	2 (1.5)
> 2000 prescriptions/ week	3 (2.3)

### Participants' perceptions and attitudes

The majority (109; 83.8%) of respondents agreed that OTC drug advertisements make them aware of various brands in the market and (95; 73.0%) of the respondents thought that they make them aware of the functions of particular product. Nearly (90; 69.2%) of the respondents deemed OTC drug advertising to be

beneficial for patient counselling on OTC drugs. Despite this, more than half of the respondents (84; 65.0%) thought that advertising is responsible for the increased costs of OTC products. Also (75; 57.7%) of them believed that such advertisements could mislead the consumers and (104; 80.0%) of them believed that they may lead to people using medicines carelessly and thus causing adverse drug interactions with other pharmaceuticals. More than half of the

pharmacists (78; 60.0%) admitted that OTC drug advertisements influence their decisions when patients seek advice, however, as much as (59; 45.0%) of them would not necessarily recommend products that are frequently advertised. (Table 2) summarizes pharmacists' general perceptions/beliefs about OTC advertising practice and their attitudes towards the advertised over-the-counter drugs. The influence of OTC-drug advertisements on patients' choices of OTC drug is summarized in Table 3. About (105; 81.0%) of the respondents believed that patients form their opinions according to the advertisements they see and a similar

percentage (105; 81.0%) agreed that patients purchase particular OTC products because they see them in advertisements. Almost three quarters (96; 74.0%) of the respondents believed that patients self-treat their condition more frequently. The impact of OTC drug advertising on patient-pharmacist relationship from the pharmacist's point of view is shown in Table 4. About (86; 66.0%) of the respondents believed that OTC advertising helps patients have a better communication with pharmacists and (61; 46.9%) of them agreed that increased patient-pharmacist interactions were attributed to advertising.

**Table 2:** Pharmacists' perceptions/beliefs and attitudes towards OTC drug advertising (n=130).

Statement	Agree n (%)	Neither Agree or Disagree n (%)	Disagree n (%)	95% CI for Single Proportion for "Agree"
It makes me aware of different brands in the market.	109 (83.8%)	9 (6.9%)	12 (9.2%)	77.5-90.1
It makes me aware of the functions of particular products.	95 (73.1%)	23 (17.7%)	12 (9.2%)	65.5-80.7
It makes me aware of new products in market.	115 (88.5%)	7 (5.4%)	8 (6.2%)	83.0-93.9
It is beneficial to me for patient counselling on OTC drugs.	90 (69.2%)	26 (20.0%)	14 (10.8%)	61.3-77.1
It could lead to people using medicines recklessly and thus causing adverse drug interactions with other pharmaceuticals.	104 (80.0%)	18 (13.8%)	8 (6.2%)	73.2-86.8
It is responsible for the increased costs of OTC products.	84 (64.6%)	28 (21.5%)	18 (13.8%)	56.4-72.7
It adheres to Federal Pharmaceutical regulation and guidelines.	69 (53.1%)	52 (40.0%)	9 (6.9%)	44.5-61.6
It emphasizes the safety of the product.	68 (52.3%)	43 (33.1%)	19 (14.6%)	43.7-60.8
It creates higher preferences for brands where generics would suffice.	96 (73.8%)	27 (20.8%)	7 (5.4%)	66.3-81.4
It misleads the consumers.	75 (57.7%)	36 (27.7%)	19 (14.6%)	49.2-66.1
The brands, which are advertised more often, are more trustworthy.	50 (38.5%)	54 (41.5%)	26 (20.0%)	30.1-46.7
Information in OTC advertisements is adequate for making health decisions.	48 (36.9%)	34 (26.2%)	48 (36.9%)	28.6-45.2
Information in OTC advertisements is enough for patients to decide whether to consult a healthcare professional.	36 (27.7%)	32 (24.6%)	62 (47.7%)	20.1-35.4
It influences my decisions when customers seek advice.	78 (60.0%)	29 (23.3%)	23 (17.7%)	51.6-68.4
I tend to recommend the OTC products which are more advertised.	29 (22.3%)	42 (32.3%)	59 (45.4%)	15.2-29.4
Advertising influences the decisions of stocking a drug in the drug store.	74 (56.9%)	33 (25.5%)	23 (17.7%)	48.5-65.4

**Table 3:** Pharmacists' perceptions of patients attitudes towards OTC advertisements (n=130).

Statement	Agree n (%)	Neither Agree or Disagree n (%)	Disagree n (%)	95% CI for Single Proportion for "Agree"
They self-treat their condition more frequently	96 (73.8%)	23 (17.7%)	11 (8.5%)	66.3-81.4
They buy OTC products whose advertisements are seen more frequently than the others.	99 (76.2%)	17 (13.1%)	14 (10.8%)	68.8-83.4
They buy unnecessary OTC products.	84 (64.6%)	21 (16.2%)	25 (19.2%)	56.4-72.8
They buy OTC products unsuitable for their condition.	89 (68.5%)	28 (21.5%)	13 (10.0%)	60.5-76.4
They form their own opinions about OTC products	105 (80.8%)	20 (15.4%)	5 (3.8%)	74.1-87.5
They often adamant on buying certain OTC drug products due to the advertisement they see.	105 (80.5%)	18 (13.8%)	7 (5.4%)	74.1-87.5



**Table 4:** Pharmacists' opinion about the effect of over-the-counter drug advertising on patient-pharmacist relationship (n=130).

Statement	Agree n (%)	Neither Agree or Disagree n (%)	Disagree n (%)	95% CI for single proportion for "Agree"
It helps patients have a better communication with pharmacist.	86 (66.2%)	26 (20%)	18 (13.8%)	58.1-74.3
OTC drug advertising leads to better patient-pharmacist interactions.	61 (46.9%)	41 (31.5%)	28 (21.5%)	38.4-55.5
Patients seek more information about OTC drug products.	115 (88.5%)	10 (7.7%)	5 (3.8%)	83.0-93.9
Patients ask about differences between brands.	116 (89.2%)	11 (8.5%)	3 (2.3%)	83.9-94.5
Patients ask my opinion before purchasing OTC products.	84 (64.6%)	34 (26.2%)	12 (9.2%)	56.4-72.8

## Discussion

Advertisements are important sources of information of medicines for both patients and health professionals [12], and they are available for public including patients through various sources such as internet, radio, magazines, etc. Many studies have shown the effect of drug promotion from patients' point of view or from a regulatory perspective [13,14]. Nonetheless, pharmacists are in the front line to understand patients concerns and fulfil their intellectual and health needs [15]. Although nonprescription medicine advertisements can play a role in public health awareness and self-care, it may as well lead to multiple consequences regarding decisions and attitudes of pharmacists and patients [16]. In this study, pharmacists were asked to report various aspects of the impact of advertising on daily practice in UAE.

The investigated sample composed of 130 pharmacists from Abu Dhabi, UAE with almost an equal ratio of female to male participants. The majority of respondents (89; 68.5%) have seen OTC drug advertisement at least 1-5 times per week, mainly on the television (46; 35.4%) and/or the internet (56; 43.1%). This is consistent with the results of a similar study that has investigated the public's reactions to drug advertisements, where television and internet were reported to be the most influential on public's perception regarding drug advertisements [13]. The present study shows that high percentage (109; 83.8%) of the respondents believe that OTC drug advertisements make them aware of various brands in the market and make them familiar with new products in the market (115; 88.5%). Whereas, according to an earlier study on pharmacists' opinion on use of OTC medicines, more than 90% of pharmacists have learnt about OTC drugs from the product label [17]. Almost half of the respondents (68; 52.0%), believe that OTC drug advertisements affirm the safety of the product. In a relevant study, safety has been the most important factor that influences pharmacists' choice of OTC medication [18]. Additionally, a similar percentage (69; 53.0%) has thought that the current OTC advertising follows Federal Pharmaceutical regulations and guidelines. In UAE, Health Advertisement Regulation (Regulation No. 430) is the body of law regulating the issue of advertising in the medical field [14]. Nearly (90; 70.0%) of the participants in this study have agreed that OTC drug advertisements allow for patient counselling on OTC drugs. In a comparable study, only 51.8% of the pharmacists have suggested that OTC drug advertising has increased patient-pharmacist interactions [19]. On the other hand, as much as (104; 80.0%) of the respondents have assumed that advertising of OTC medicines can eventually lead to patients using medicines carelessly and thus mistreating their conditions.

Also (99; 76.2%) of the pharmacist have reported that patients are willing to buy OTC products whose advertisements are seen more frequently than those less frequently advertised. This is in harmony with the finding that more than half of the pharmacists (74; 56.9%) have agreed that advertising does affect the decision of stocking a drug in the store. A high percentage (115; 88.5%) of respondents have reported that patients interact with them to gain more information about OTC drug products. Approximately (84; 65.0%) of the respondents have agreed that patients ask their opinion before purchasing any product. This indicates that many consumers do not follow advertisements blindly, however, advertisements help consumers to be familiar with different OTC products and increase their medical/pharmaceutical knowledge. In contrast, (105; 81.0%) of the respondents believe that patients form their basic opinions about OTC products from advertisements. And, consistently with other research where it has been found that patients self-treat themselves with OTC products by carefully reading leaflets that comes with the over-the-counter product package [20]. As per Chi-square test, statistically significant results ( $p < 0.05$ ) were observed regarding the impact of OTC advertising on the pharmacists' perceptions and their attitudes. Based on gender, while the majority of women (28; 44.4%) have disagreed that "information in OTC advertisements is adequate for making health decisions", the highest proportion of men were Neutral (24; 35.8%), with statistical significance level of ( $p = 0.029$ ). The number of times the pharmacist sees OTC drug advertisements per week was related to the influence on his/her decisions when customers seek advice with statistical significance level of ( $p = 0.008$ ). Likewise, knowing that many pharmacists believe that the advertising of OTC pharmaceuticals is beneficial to them for patient counselling on such drugs (90; 69.2%) and helps patients have a better communication with pharmacist (86; 66.2%). These two perceptions were related to the frequency of patient-pharmacist interactions about OTC per week with statistical significance level of ( $p = 0.011$ ) and ( $p = 0.012$ ), respectively. In a corresponding study, it has been shown that patients benefit from pharmaceutical advertising by increasing health awareness and detection of adverse reactions, which possibly lead to a discussion with a health care provider [21].

## Conclusion

This study represents an interesting set of pharmacists' beliefs, opinions, and attitudes towards OTC drug advertising. Primarily, UAE pharmacists included in the study seem to be less conservative and more open to the subject of drug advertising regarding its impact on their practice, however, they are fully aware

that advertising could lead to undesirable consequences, such as misuse or abuse of OTC products, increased chances of potential adverse events and increased costs.

## Limitations

Many encountered pharmacists were not interested in filling questionnaires, others were too busy to fill it. Furthermore, some pharmacies, especially chain pharmacies, have strict policies regarding disclosing their business information. These reasons collectively led to a limited sample size.

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## Competing Interests

The authors have no conflicts of interest to disclose.

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