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Research Article

KNOWLEDGE, ATTITUDE, AND PRACTICE ON OVER-THE-COUNTER DRUG AMONG PHARMACY AND OTHER HEALTH CARE PROVIDERS; A FACILITY-BASED CROSS-SECTIONAL STUDY

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Abstract:

Globally, using over-the-counter (OTC) medication by self-medication is more common than administering prescribed drugs. OTC medication could resolve mild medical complications; however, it could result in significant problems in case of misused drugs and using medication in the wrong dose or duration. Health Care Providers (HCP) use such OTC drugs for many purposes, such as saving time. However, Pharmacy and medical HCPs are supposed to have information about OTC drugs and self-medication. This study aimed to assess the knowledge, attitude, and practice of pharmacy and medical HCP regarding OTC drugs.

Methods:

This was a cross-sectional survey-based study that was conducted on HCP. The study used a self-administrated survey to investigate the knowledge, attitude, and practice of HCPs regarding OTC drugs. In addition, the demographics, level of knowledge, level of attitude, and level of practice were investigated.

Results:

This study included 346 HCPs; most were males (70.8%). There was high knowledge among 32.4% of HCPs, and 35.8% had a positive attitude. The level of knowledge was significantly associated with gender ($P=0.0001$), age ($P=0.0001$), marital status ($P=0.0001$), and attitude ($P=0.0001$). Also, the level of attitude was significantly associated with gender ($P=0.0001$), age ($P=0.0001$), and marital status ($P=0.0001$).

Conclusion:

There was a low level of knowledge and low attitude towards OTC self-medication. Means to increase their knowledge should be considered as they would be responsible for medication prescription in the future.

Keywords: Attitude, Knowledge, OTC, HCPs

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INTRODUCTION:

Using over-the-counter (OTC) medication by self-medication is more common than administering prescribed drugs globally [1]. OTC drugs refer to drugs that could be legally purchased without requiring a prescription from a registered medical practitioner. OTC medications are used to treat simple conditions that don't require direct medical attention or visiting a doctor; however, OTC drugs must be demonstrated to be well-tolerated and reasonably safe [2, 3].

Although the practice of OTC medications reduce the number of visits to the doctors and reduce the costs, the misuse of OTC drugs could result in drug interactions with other drugs, disease or food, adverse reactions, medication-related issues, improper use of the drug, risk of missing the diagnosis, drug dependence, and overdosing [4-7]. Effective and safe use of the drugs requires awareness of the customer regarding identifying the accurate symptoms, correct diagnosis, ascertaining therapeutic goals, use the appropriate drug, dosage, and medication duration. It is also necessary to be aware of the medical history, contraindications, comorbidities, adverse effects, and response to the treatment [8].

Some patients might purchase prescribed medications without a prescription; these medications significantly impact individuals and the community [4]. In addition, the use of prescription-only drugs as OTC drugs is dangerous without professional counseling [9].

The use of OTC in Saudi Arabia is high [10]. The irresponsible practice of self-medication in Saudi Arabia is widespread. It continues to present a significant problem because people are often unsure whether the medication, they have purchased is prescription-only or OTC [11-13].

OTC drugs might be associated with misuse and abuse; the abuse of OTC drugs refers to the utilization of drug for a non-medical or unintended purpose [14], whereas the misuse refers to the use of medication for therapeutic purposes but in the wrong manner, such as wrong duration of usage and wrong dose [15]. Lack of knowledge about OTC drugs might directly lead to harmful consequences [16]. It was shown that medical and non-medical HCPs lack knowledge about OTC medications. The universities should improve the awareness of the HCPs regarding the consequences of OTC use [4]. Many HCPs use various OTC medications to increase concentration or study for exams [4]. Medical HCPs are the future doctors, and they have a potential role in advising the

patients about the consequences and benefits of OTC drugs [17].

A study from Saudi Arabia was established to assess the dispensing of medications without prescription. The study included 60 pharmacies, and the majority of pharmacists were non-Saudi. It was found that the majority of pharmacists dispensed the antibiotics immediately and the antipsychotic simply, and all pharmacists dispensed captopril by following the request of the collaborators without asking the doctors for prescription [18]. Furthermore, another Saudi study conducted on the community pharmacists revealed that most participants had been trained in recognizing drug abuse or dependence during their pharmacy education [14]. So, it is necessary to determine the knowledge attitude and practice of the medical and Pharmacy HCPs regarding the over-the-counter drug. The doctors are the personnel who prescribe the medication, and pharmacists are responsible for dispensing the medication.

A study assessed OTC medications by university HCPs in Saudi Arabia during the exams. More than one-half of HCPs (68%) knew about the proper use of OTC. However, the study revealed that male HCPs showed a significant lack of knowledge. Most HCPs reported that they would practice self-medication to treat headaches during the examination; the use of OTC was affected by gender, age, monthly income, and university level [4].

A study conducted on medical HCPs and pharmacy HCPs regarding OTC drugs showed that the majority (79.7%) reported practicing self-medication. The main reasons for self-medication were saving time and the desire for quick relief. The most common causes for self-medication and OTC drugs were fever, headache, and abdominal pain [19].

A study from India conducted on medical HCPs found that the large majority of the HCPs were aware of OTC medications. Most of them were aware of the toxicities and interactions of the drugs; however, the large majority used OTC once at least. The most common causes for OTC practice were fever and headache. In contrast, the most common reasons for practicing OTC were difficulty consulting a doctor and easy availability of the drugs [17].

Another Indian study on 151 medical HCPs showed that all participating HCPs were aware of OTC medications. Most of them used OTC a lot because of availability and their belief in the safety of the drugs. The most commonly used medications were antibiotics, antihistamines, and cough syrups, whereas headaches and fever were the most common

causes of OTC drugs [20].

A study conducted on the first-year medical HCPs demonstrated that 86% of the HCPs practiced self-medication with OTC drugs, and the most common causes for using OTC were fever, cough, and cold. In addition, a few percentages reported suffering adverse reactions when using OTC self-medication [21].

In Iran, a study that included medical sciences HCPs revealed that more than one-half (57.1%) practiced self-medication. The pharmacy HCPs had a higher level of information about drugs. There was a significant association between the level of drug information and the tendency to self-medication. This means that the Pharmacy may have more self-medication than other HCPs [8].

MATERIALS AND METHODS:

This was a cross-sectional survey-based study conducted among medical and pharmacy HCPs in Jazan Armed Forces Hospital, Jazan, Saudi Arabia between May to October 2021. The study used a self-administrated survey to investigate the knowledge, attitude, and practice of HCPs regarding OTC drugs. In addition, the demographics, level of knowledge, attitude, and level of practice were investigated.

A cross-sectional survey-based study that was conducted on pharmacy and medical HCPs pharmacy and medical HCPs, Saudi HCPs, and 18 and older

subjects were included. However, HCPs from faculties other than pharmacy and medicine, non-Saudi HCPs, and HCPs less than 18 years old were excluded.

Data were collected using a pre-designed self-administrated questionnaire. The questionnaire investigated the demographics of the HCPs, such as age, gender, year of study, and specialty. In addition, the level of knowledge, attitude, and practice were investigated separately through three parts; each part contained questions about knowledge, attitude, and practice.

The data were collected from all HCPs and was saved in an excel sheet then transferred and analyzed by the SPSS program. Numerical variables were represented using mean \pm SD, whereas categorical variables were represented using numbers and percents. Correlations between the demographics of HCPs and the level of knowledge, attitude, and practice were performed using a T-test or Chi-square according to the type of the variable. P-value was considered significant at ≤ 0.05 .

RESULTS:

A total of 346 HCPs were included in this study, most of the HCPs were males, 245(70.8%), and the most significant proportion, 158(45.7%), was in the age range of 21-30 years. In addition, there were 230(66.5%) married, and 126(36.4%) were in the fourth year of study (Table1).

Table1: Description of essential characteristics

Variables	Description (n=346)
Gender	
Male	245 (70.8)
Female	101 (29.2)
Age	
<20	14 (4)
21-30	158 (45.7)
31-40	111 (32.1)
41-50	16 (4.6)
51-60	19 (5.5)
>60	28 (8.1)
marital status	
Single	104 (30.1)
Married	230 (66.5)
Divorced	9 (2.6)
Widow	3 (0.9)
Year of the study	
4th	126 (36.4)
5th	109 (31.5)
Internship Doctors	111 (32.1)

There were seven questions to investigate participants' level of knowledge; the questions and answers of participants. The overall knowledge showed 112(32.4%) had high knowledge, whereas 234(67.6%) had insufficient knowledge (Table 2).

Table2: Description of knowledge questions

Questions and answers	Description (n=346)
Knowledge Item Questions [All OTC drugs are safe and effective.]	
Yes	226 (65.3)
No	86 (24.9)
I do not know	34 (9.8)
Knowledge Item Questions [OTC drugs could be used after their expiry date.]	
Yes	70 (20.2)
No	223 (64.5)
I do not know	53 (15.3)
Knowledge Item Questions [All OTC drugs, when taken along with the prescribed drug, are safe]	
Yes	154 (44.5)
No	81 (23.4)
I do not know	111 (32.1)
While using OTC drugs, caution should be taken chiefly during	
Pregnancy	141 (40.8)
Lactation	39 (11.3)
Adolescent/middle-age adults	64 (18.5)
Elderly	63 (18.2)
Children	39 (11.3)
OTC drugs are used usually for treating diseases like	
Chronic illnesses	66 (19.1)
Minor illnesses and injuries	196 (56.6)
Do not know	84 (24.3)
OTC drugs can cause side effects	
Sometimes	158 (45.7)
Mostly	58 (16.8)
Never	53 (15.3)
Do not know	77 (22.3)
If suspected side-effect(s) are seen, then one should:	
Immediately stop using the drug	114 (32.9)
Take low dose until side effect(s) subside	48 (13.9)
Continue taking the drug	59 (17.1)
regardless of the side effect(s)	51 (14.7)
Report to a doctor or pharmacist	74 (21.4)
Overall Knowledge score	
High (>60%)	112 (32.4)
Low (<60%)	234 (67.6)

The participants' attitude was assessed through eleven questions; the questions and details of participants' answers. In addition, the overall attitude was evaluated, and it was found that 124(35.8%) had a high attitude toward OTC self-medication, whereas 222(64.2%) had a low attitude (Table 3).

Table 3: Description of attitude questions

Questions and answers	Description (n=346)
Attitude-Related Questions [Over the Counter, drugs are cheaper and convenient.] Strongly disagree Disagree Neutral Agree Strongly agree	145 (41.9) 53 (15.3) 54 (15.6) 49 (14.2) 45 (13)
Attitude-Related Questions [It is okay to share OTC medications with others] Strongly disagree Disagree Neutral Agree Strongly agree	76 (22) 136 (39.3) 76 (22) 50 (14.5) 8 (2.3)
Attitude-Related Questions [Over the Counter, drugs can modify or alter the action of another drug] Strongly disagree Disagree Neutral Agree Strongly agree	68 (19.7) 54 (15.6) 119 (34.4) 65 (18.8) 40 (11.6)
Attitude-Related Questions [It is appropriate to seek a pharmacist's advice when someone has OTC medicines that they have never used before.] Strongly disagree Disagree Neutral Agree Strongly agree	72 (20.8) 87 (25.1) 77 (22.3) 61 (17.6) 49 (14.2)
Attitude-Related Questions [Over the Counter, drugs are not affected by storage conditions, like temperature, moisture, and direct sunlight.] Strongly disagree Disagree Neutral Agree Strongly agree	153 (44.2) 105 (30.3) 54 (15.6) 21 (6.1) 13 (3.8)
Attitude-Related Questions [When someone goes to a pharmacy for OTC medication, they should bring all medications they are currently taking.] Strongly disagree Disagree Neutral Agree Strongly agree	94 (27.2) 88 (25.4) 80 (23.1) 47 (13.6) 37 (10.7)
Attitude-Related Questions [It is appropriate to treat minor-ailments like a common cold with OTC medications.] Strongly disagree Disagree Neutral Agree Strongly agree	89 (25.7) 72 (20.8) 92 (26.6) 63 (18.2) 30 (8.7)
When did you consume OTC drugs? When symptoms are minor Whenever I feel sick	99 (28.6) 114 (32.9)

When I cannot visit a doctor	133 (38.4)
What do you do if OTC drugs show a change in shape, color, and odor?	
Immediately discard the drugs	183 (52.9)
Continue using until it expires	80 (23.1)
Continue using even if after it expires	83 (24)
Where do you usually store OTC drugs?	
Medicine box	129 (37.3)
Bedroom/on an open table	72 (20.8)
Refrigerator	66 (19.1)
Kitchen	30 (8.7)
Bathroom	49 (14.2)
For which illnesses do you usually go for OTC drugs?	
Fever and headache	166 (48)
Dysmenorrhea	39 (11.3)
Dyspepsia	45 (13)
Abdominal Cramp	42 (12.1)
Cough and a common cold	54 (15.6)
Overall Attitude score	
High (>60%)	124 (35.8)
Low (<60%)	222 (64.2)

The correlation between the overall knowledge and demographics of HCPs. There was a significant association between the overall level of knowledge and gender ($P=0.0001$), age ($P=0.0001$), marital status ($P=0.0001$), and the score of attitudes ($P=0.0001$) (Table 4).

Table 4: Relations of knowledge score

Variables	Overall Knowledge score		P value*
	High (n=112)	Low (n=234)	
Gender			
Male	47 (42)	198 (84.6)	0.000
Female	65 (58)	36 (15.4)	
Age			0.000
<20	2 (1.8)	12 (5.1)	
21-30	76 (67.9)	82 (35)	
31-40	31 (27.7)	80 (34.2)	
41-50	3 (2.7)	13 (5.6)	
51-60	0 (0)	19 (8.1)	
>60	0 (0)	28 (12)	
marital status			0.000
Single	56 (50)	48 (20.5)	
Married	54 (48.2)	176 (75.2)	
Divorced	2 (1.8)	7 (3)	
Widow	0 (0)	3 (1.3)	
Year of the study			0.787
4th	38 (33.9)	88 (37.6)	

5th	36 (32.1)	73 (31.2)	
Internship Doctors	38 (33.9)	73 (31.2)	
Attitude score			
High	85 (75.9)	39 (16.7)	0.000
Low	27 (24.1)	195 (83.3)	

***Chi-square test**

The correlations between attitude and demographics of HCPs. There were significant correlations between attitude and gender (P=0.0001), Age (P=0.0001), and marital status (P=0.0001) (Table 5).

Table 5: Relations of Attitude score

Variables	Overall Attitude score		P value *
	High (n=124)	Low (n=222)	
Gender			0.000
Male	58 (46.8)	187 (84.2)	
Female	66 (53.2)	35 (15.8)	
Age			0.000
<20	1 (0.8)	13 (5.9)	
21-30	80 (64.5)	78 (35.1)	
31-40	35 (28.2)	76 (34.2)	
41-50	3 (2.4)	13 (5.9)	
51-60	2 (1.6)	17 (7.7)	
>60	3 (2.4)	25 (11.3)	
marital status			0.000
Single	59 (47.6)	45 (20.3)	
Married	64 (51.6)	166 (74.8)	
Divorced	0 (0)	9 (4.1)	
Widow	1 (0.8)	2 (0.9)	
Year of the study			0.651
4th	49 (39.5)	77 (34.7)	
5th	38 (30.6)	71 (32)	
Internship Doctors	37 (29.8)	74 (33.3)	

Chi-square test*DISCUSSION:**

Self-medication using OTC drugs is very common in the whole world, and it is legally purchased without the prescription of a medical practitioner. However, OTC drugs should be used with caution as the misuse of the drugs could result in adverse effects. In the current study, more than one-half of participants reported that all OTC drugs are safe, whereas more

than one-half reported that drugs couldn't be used after the expiry date. However, caution should be taken less than one-half new during pregnancy. More than one-half reported minor illnesses and injuries regarding the significant cause for using OTC drugs. The overall knowledge among HCPs was high among only 32.4%, whereas most of the HCPs (67.6%) had a low level of knowledge. These are surprising findings

as medical and pharmacy HCPs are the personnel who prescribed and determined the medication and dosage for patients in the future.

In a previous Saudi study conducted on University HCPs, it was found that headache was the leading cause for using OTC drugs, followed by pain, fever, and cough [4]. This was in agreement with the current study as it was found that the primary cause for using OTC drugs was minor illness and injuries; headache, fever, and pain are considered minor conditions.

A similar study was conducted in Ethiopia and included 380 medical and Pharmacy HCPs [19]. The study also showed similar findings regarding the cause of using OTC drugs, and it was minor conditions such as fever, headache, and abdominal cramps. However, in contrast to our study, the level of knowledge in the Ethiopian study was high, where 67.6% had a high level of knowledge about OTC medications.

The third-year medical HCPs from India participated in one study, and 94.5% of HCP was aware of OTC drugs [17], this reflecting a very high level of knowledge compared to ours, but by our study, the significant reasons for OTC usage were also minor complications including fever and headache. On the other hand, a much higher level of knowledge was found among Indian HCPs from Haryana medical HCPs. All participants reported knowledge about OTC drugs reflecting 100% knowledge regarding OTC medications [17].

Medical HCPs from Nepal reported good knowledge about self-medication. HCPs reported that they obtained their information about drugs from pharmacists as the primary source 60.31% or from test book 46.03% [22]. Another study from Nepal conducted among university HCPs revealed a necessity of building knowledge to reduce the practice of self-medication. The study also revealed that self-medication among HCPs was due to treating minor illnesses [23].

However, the attitude of participants in the current study was low regarding OTC medication. Only 35.8% had a high attitude toward OTC drugs, whereas 64.2% had a low attitude toward OTC drugs. However, the correlation found between participants' overall knowledge and overall attitude showed that those with higher knowledge about OTC significantly had a higher attitude toward OTC. The reverse was expected; those with high knowledge about OTC drugs would have a lower attitude to using OTC due

to the adverse effects and high knowledge of medication. However, the current correlation could be explained by the participants who have high knowledge about OTC and have a high attitude as they thought they had enough awareness to use OTC with no complications.

Also, the level of knowledge was affected by gender, age, marital and status of participants; males and married individuals tended to have a low level of knowledge, whereas those with the age of 21-30 years tended to have a higher level of knowledge.

In agreement with the current findings, a previous Saudi study revealed that the male gender was associated with low awareness regarding the safety and reasons for OTC use compared to females. Also, age was a determinant factor for awareness level were found; however, in contrast to the current findings, the study revealed that university-level was also determinant for the level of knowledge [4], whereas in the current study, the year of study had no significant impact on the level of knowledge. Bekele *et al.*, in their study, found that the medical and pharmacy HCPs had an attitude score of 26.62/40 reflecting a tendency to have a positive attitude to OTC drugs rather than a negative attitude [19]. In addition, medical HCPs from Nepal reported a positive attitude toward self-medication [22].

Regarding attitude, also males and married persons considerably showed lower attitude, whereas those aged 21-30 years had higher attitude.

CONCLUSION:

There was a low level of knowledge and low attitude towards OTC self-medication. Increasing their knowledge is recommended as they would be responsible for medication prescription in the future. The increase of knowledge should be established through educational courses and training programs. Also, further studies should be conducted to investigate the factors related to the insufficient knowledge of participants other than demographics. Educational and environmental factors related to common knowledge should be investigated. Also, the causes of using OTC should be identified to reduce using OTC drugs.

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