

Knowledge, Perception, and Practice of Pharmacy Professionals on Drug Misuse and Abuse in Eastern Region of Saudi Arabia

Abstract

Background: Drug abuse is a worldwide issue affecting all human life aspects including health, social, economic, and security status. According to the United Nations Office on Drug and Crime reports, over 5% of adults used drugs at least once in the year 2015, and 29.5 million of them had consequences of inappropriate use of drugs. Information about severity of the problem in Saudi Arabia is limited, and therefore, a study was conducted among pharmacy staff to assess their knowledge, belief, and practice on drug misuse and abuse. **Materials and Methods:** A cross-sectional study was carried out in Eastern Province, Saudi Arabia. Pharmacy professionals with more than three months of experience were included in the study. A structured questionnaire was used to obtain participant's responses. Chi-square test was used to evaluate the association of sociodemographic factors with the participant's responses. **Results:** Ninety pharmacy professionals responded to this study. Overall 69 (76.7%) participants agreed that misuse and abuse are two different terms. Overall 48.9% ($n = 44$) of participants believed that the misuse or abuse of medications in Saudi Arabia is in an alarming situation. In addition, study showed different practices for patients who were suspected to be medication abusers. **Conclusion:** This study provided an initial picture about pharmacy staffs' knowledge and opinion regarding the misuse and abuse of medicines in Saudi Arabia. Participants' reactions and practices toward such behaviors were different and not consistent. Therefore, there should be a clear policy to define the role of the pharmacy staff toward the misuse and abuse of medication in Saudi Arabia.

Keywords: Drug misuse and abuse, knowledge, perception and practice, pharmacy professionals, Saudi Arabia

Introduction

World Health Organization (WHO) defined the rational use of medications as: "patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community". Inappropriate use of drugs can be classified into either misuse or abuse.^[1] Drug misuse is defined as the use of medications in a way other than as stated by a physician, whereas drug abuse is the use of a substance for a purpose not consistent with legal or medical guidelines.^[2] Although the terms "abuse" and "misuse" are used interchangeably when talking about illegal medications, the terms have to be differentiated when it comes to prescription or over-the-counter (OTC) medications.^[2] The issue of misuse and abuse of medications has become serious concern afflicting all countries, owing to the important dangers triggered to health,

social, economic, and security.^[3] According to the United Nations Office on Drug and Crime reports, over 5% of adults used drugs at least once in the year 2015, and 29.5 million of them had drug use disorders. The magnitude of the impairment triggered by drug use is underlined by the estimated 28 million years of "healthy" life lost worldwide in 2015.^[4] There is a lack of information regarding the abuse of medications in Saudi Arabia; however, some studies showed that heroin, amphetamine, alcohol, and cannabis are the most common abused substances in the treatment facilities.^[5]

Pharmacists are front-line health-care providers, most accessible member of a health-care team, the sentinel of the country's Schedule X drugs, dispenser of addictions pharmacotherapy, and drug educator.^[6] The American Society of Health System Pharmacists (ASHP) clearly states, "ASHP believes that pharmacists have unique knowledge, skills and responsibilities for assuming an important role in substance abuse prevention, education and assistance."^[7]

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However, in Saudi Arabia, data pertaining to the proactive involvement of pharmacists and other pharmacy staffs to problems related to the drug abuse and misuse are limited. In our study, we have tried to investigate the understanding of pharmacy professionals about the difference between words misuse and abuse of medications, and pharmacists' belief about the misuse or abuse of medications in Saudi Arabia. We also evaluated the pharmacy staff's practice regarding dispensing medications to customers suspicious for misuse or abuse of the medications.

Materials and Methods

A cross-sectional study was conducted during January 2017 to May 2017, among pharmacy professionals, working in different public sectors hospital and community pharmacies in Dammam and Al Khobar regions, Eastern Province, Saudi Arabia. A convenient sample of 13 pharmacies in the region was selected, and all pharmacy professionals including pharmacists (having a bachelor's degree in pharmacy) and pharmacy technicians (not having a bachelor's degree in pharmacy) from the selected pharmacies were considered for screening. Pharmacy professionals with less than three months of experience were most likely to be under training, and thus, they were not included in the study. Pharmacy professionals working in more than one pharmacy outside the sector were also excluded from the study. A study researcher visited the participated pharmacies and encouraged the participants to fill up a study questionnaire on spot. Each pharmacy director and the participants were briefed about the aim and the objectives of the study. Informed consent letters were obtained from the participants before completing the questionnaire. Participants were assured about the confidentiality of their personal information and response.

A questionnaire was developed through the review of literature and research available in this field and was used to obtain participants' sociodemographic information and their response. To validate and improve the quality, the primary draft of the questionnaire was distributed to members of the research team for their feedback, and modification was carried out as per the suggestions. On the basis of a pilot study, which was carried out on 20 pharmacists before the definitive study, some questions were modified. The questionnaire had three sections. In the first section, participants were asked about their sociodemographic details. The second section was on pharmacy professionals' understanding about the difference between the words misuse and abuse of medications and their belief about the misuse or abuse of medications in Saudi Arabia. The participants were also asked to list the name of commonly abused or misused drugs from their experience. The final section was about pharmacy professionals' practice regarding dispensing medications to customers suspicious for misuse or abuse of the medications.

Participants' sociodemographic information and their response to the questionnaire items were presented using frequencies and percentages. Chi-square test was used to test the association of

gender, age, place of work, nationality, and years of experience of pharmacy professionals with their response. A two-tailed significance test was set at 0.05 level for all analyses. All statistical analyses were performed using the BM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.

The study was approved by the Institutional Review Board of Imam Abdulrahman Bin Faisal University, Saudi Arabia (IRB-UGS-2018-05-210).

Results

A total of three hospital pharmacies and 10 community pharmacies were visited by a researcher. The questionnaires were distributed to a total of 100 pharmacy professionals, of which, 90 had returned filled questionnaire. The refusal for participation was due to either pressure of time or administrative commitments. The sociodemographic characteristics of participants are summarized in Table 1. The sample comprised 61.1% males, 43.3% aged less than 30 years, 62.2% Saudi nationals, 72.2% with a bachelor's degree or more, 77.8% from hospital pharmacies, and 34.4% with more than 10 years of experience.

The participants were asked about their understanding about the difference between the terms "misuse" and "abuse" of medications [Figure 1]. Overall 69 (76.7%) participants agreed

Table 1: Sociodemographic characteristics of participants

Sociodemographic variables	N	%
Gender		
Male	55	61.1
Female	35	38.9
Age		
20–30 years	39	43.3
31–40 years	31	34.4
41 years or older	20	22.2
Nationality		
Saudi	56	62.2
Other	34	37.8
Educational qualification		
Pharmacy technicians ^a	25	27.8
Bachelor's degree	55	61.1
Master degree or higher	10	11.1
Graduated from		
Saudi university	46	51.7
Non-Saudi university	43	48.3
Working place		
Hospital pharmacy	70	77.8
Community pharmacy	20	22.2
Years of experience		
1–5 years	31	34.4
6–10 years	28	31.1
11–15 years	13	14.4
16 years or more	18	20.0
Overall	90	100

^aNot having bachelor's degree in pharmacy

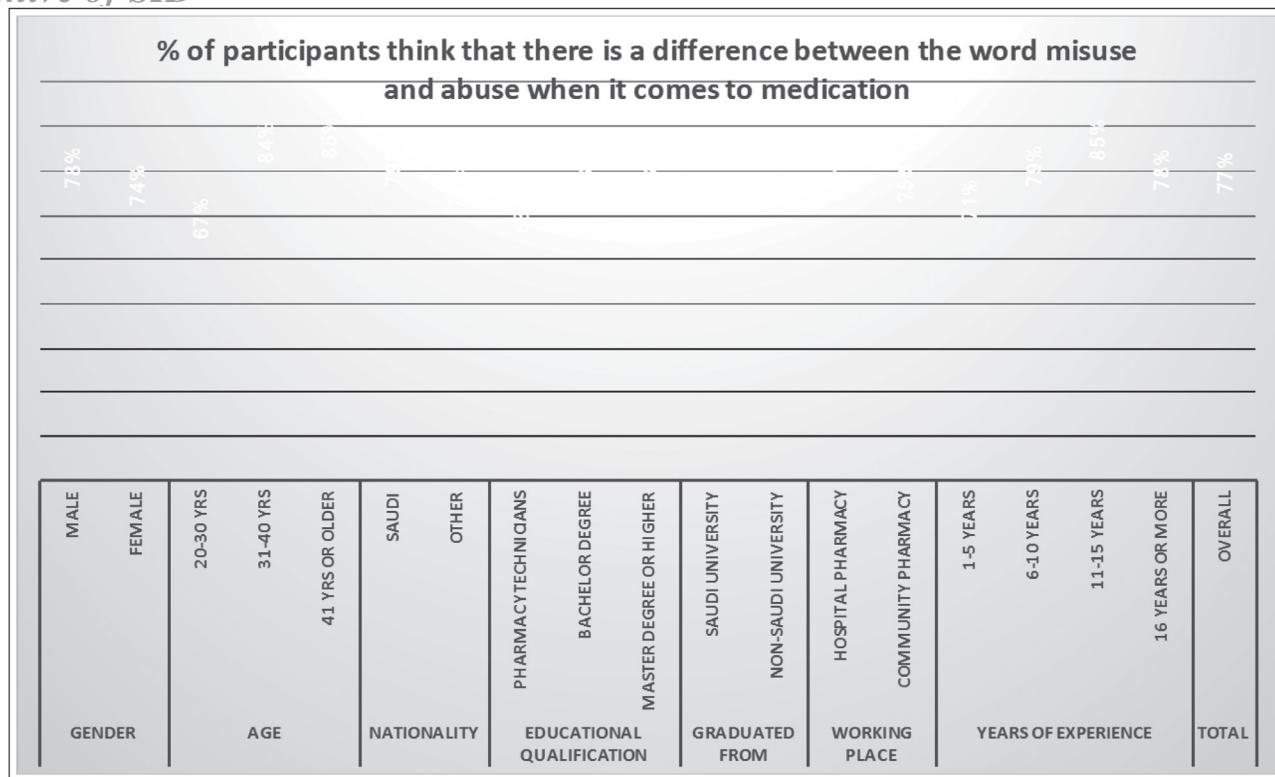


Figure 1: Pharmacy professionals' understanding about the difference between words misuse and abuse of medications

that there is a difference between these terms. As shown in Figure 1, the agreement was less than 70% among pharmacy technicians or among those who were younger than 30 years of age, whereas the agreement was 80% or more among the participants older than 30 years of age, graduated from Saudi university, having a bachelor's degree or more, or having 11–15 years of experience.

Overall 48.9% ($n = 44$) of participants believed that the misuse or abuse of medications in Saudi Arabia might be an issue, and only 11.1% thought that the situation is either not alarming or not a matter of concern [Figure 2]. Importantly, 75.6% ($n = 68$) thought that both narcotic and nonnarcotic medications are misused or abused in the country, whereas the remaining responded that either only narcotic medications (12.2%) or only nonnarcotic medications (12.2%) are misused or abused.

Figure 3 and Table 2 summarize practice at a pharmacy regarding dispensing medications to customers suspicious for misuse or abuse of the medications. To understand the practices, the participants were asked if they ever had dispensed or sold a medication to customers suspicious for the misuse or abuse, and if they had reacted to the situation. The key finding is that three-quarter ($n = 68$) of participants claimed that they never dispensed a medication to customers if misuse or abuse was suspected [Figure 3]. Among the remaining 22 participants, 10 claimed that they had reacted to situations, where misuse or abuse of medications was suspected, before dispensing the medications. That is, in total, 86.7% of participants had reacted to customers suspicious for misuse or abuse of the

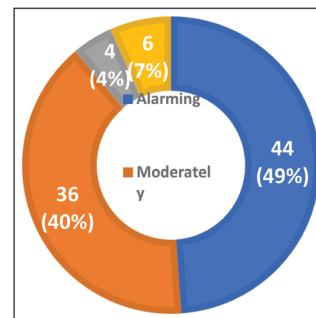


Figure 2: Pharmacy professionals' belief about the situation of misuse or abuse of medications in Saudi Arabia

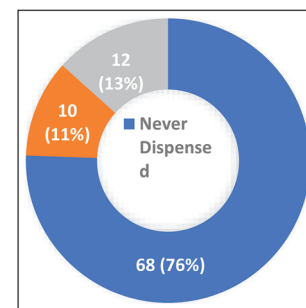


Figure 3: Pharmacy professionals' practice on dispensing medications to customers suspicious for misuse or abuse of the medications

medications. Importantly, 12 (13.3%) participants accepted that they had failed to react before dispensing medications to the suspicious customers. Regarding the proportion of the non-reacted pharmacy professionals, a high percentage

Table 2: Pharmacy professionals' practice on dispensing medications to customers suspicious for misuse or abuse of the medications

Sociodemographic variables	Practice on dispensing medication if misuse or abuse was suspected			P value**
	Never dispensed, (n = 68)	Dispensed, but reacted ^a , (n = 10)	Dispensed and not reacted ^a , (n = 12)	
Gender				
Male	44 (80%)	8 (15%)	3 (5%)	0.02*
Female	24 (69%)	2 (6%)	9 (26%)	
Age				
20–30 years	31 (80%)	2 (5%)	6 (15%)	0.22
31–40 years	23 (74%)	3 (10%)	5 (16%)	
41 years or older	14 (70%)	5 (25%)	1 (5%)	
Nationality				
Saudi	40 (71%)	8 (14%)	8 (14%)	0.44
Other	28 (82%)	2 (6%)	4 (12%)	
Educational qualification				
Pharmacy technicians ^b	13 (52%)	3 (12%)	9 (36%)	0.004*
Bachelor's degree	46 (84%)	6 (11%)	3 (5%)	
Master's degree or higher	9 (90%)	1 (10%)	0 (0%)	
Graduated from				
Saudi university	31 (67%)	7 (15%)	8 (17%)	0.21
Non-Saudi university	36 (84%)	3 (7%)	4 (9%)	
Working place				
Hospital pharmacy	50 (71%)	10 (14%)	10 (14%)	0.18
Community pharmacy	18 (90%)	0 (0%)	2 (10%)	
Years of experience				
1–5 years	25 (81%)	3 (10%)	3 (10%)	0.19
6–10 years	20 (71%)	1 (4%)	7 (25%)	
11–15 years	10 (77%)	3 (23%)	0 (0%)	
16 years or more	13 (72%)	3 (17%)	2 (11%)	

*Statistically significant at 5% level

**On the basis of Fisher's exact test

^aReaction defined as either talking or expressing the issue to a concerned patient, doctor, or pharmacy director. ^bNot having bachelor's degree in pharmacy

was reported among female (26%), aged less than 40 years (16%), Saudi nationals (14%), pharmacy technicians (36%), working in a hospital pharmacy (14%), and having experience of 6–10 years (25%) [Table 2]. Importantly, more females and pharmacy technicians tended to dispense medication without reacting to the suspicious situations ($P < 0.05$). However, the study did not show a statistical association between other sociodemographic characters and this practice ($P > 0.05$).

Participants were also asked about an effective solution, from their experience, that can limit misuse or abuse of medications. Overall 83.3% ($n = 75$) thought that awareness program to both pharmacy professionals and customers may limit the misuse or abuse of medications. In addition, implementation of punishment (50.0%, $n = 45$) and limiting easy access to medications (47.8%, $n = 43$) were also effective solutions to control the misuse or abuse of medications from the pharmacist's point of view.

Discussion

Pharmacists and pharmacy technicians in retail and hospital pharmacies are the important stakeholders for dispensing of

medicines. Thus, they share equal responsibility for substance abuse or misuse detection and prevention.^[7] It is important that they are aware of this problem, and they should have sufficient knowledge to identify medication abuse or misuse and to play crucial role in educating individuals with substance abuse problems.

Previous studies have revealed that pharmacists receive scant information on substance abuse or misuse during their undergraduate courses, and few professionals from this area can be considered experts on the area of misuse or abuse.^[7,8] However, this study showed that pharmacists' and pharmacy technicians' knowledge in this area was respectable, more than three-quarter of participants agreed that they were aware of the differences in terminology of the words abuse and misuse. Though statistical significance was not identified, more youngsters (20–30 years) were unaware of the difference in the terminology compared to those older than 40 years of age (33% vs. 15%). The reason for the increased understanding among elders might be due to the existence of well-established practice-based knowledge. It is well documented that pharmacists will gain the knowledge by focused training or more often

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through personal experience.^[9] Similarly, a higher proportion of pharmacy staffs having less years of experience were also unaware of the difference in the terminology compared to those having more years of experience. This could be due to the reasons that the pharmacists in the country are periodically undergoing continuous medical education. Also, over the last few decades, an extensive change was observed in the medical education and medical services in the Arabian countries, and it has been reflected in medical research activities that pertain to the substance-related issues also.^[10] Clearly, a substantial proportion of pharmacy technicians were unaware of the difference in terminology, possibly because of lack of education and training offered to the technicians in the country. Interestingly, more Saudi graduates were aware of the difference than those who received a non-Saudi graduation.

National Institute of Health reports that nearly one-fifth of people in the United States have used prescription medicines for nonmedical reasons.^[11] The issue is substantial in the Middle East, and it could be a matter for concern in Saudi Arabia.^[12,13] Majority (88%) of participants in our study reported that narcotic and/or nonnarcotic medications can be misused or abused in Saudi Arabia. This finding is consistent with the results of a previously published study.^[14] Pharmacists enlisted that pregabalin, gabapentin, benzodiazepines, tricyclic antidepressants, tramadol and other analgesics, trihexyphenidyl, metformin, and antibiotics are the commonly abused or misused prescription drugs in Damman city. Similarly, OTC medications such as Mentex syrup (ammonium chloride, dextromethorphan, diphenhydramine, menthol, pseudoephedrine, and sodium citrate), lactulose syrup, bisacodyl, Solpadeine (paracetamol, ibuprofen, caffeine, and codeine), and caffeine are also reported to be abused or misused in the region. Some of the medications listed are consistent with those of a recent study that reported the top 10 medications that are used between 2010 and 2015.^[15] This can be explained, partially, by self-mediation behavior and can also be linked to poor control of prescription drugs in community pharmacies in Saudi Arabia.^[15] This issue can have significant economic as well as clinical consequences. Globally, a total of US\$35 billion annually is spent to treat the drug users.^[16] A recent study reported that analgesic abuse by adult patients in the primary care settings are associated with around US\$53.4 billion cost every year.^[17,18]

Pharmacies have a critical role to play in preventing drug misuse or abuse problem, and pharmacists have a protector role in the misuse or abuse prevention.^[19] Pharmacists must use their professional judgment to screen patients for the drug misuse or abuse. A pharmacist who intentionally ignores a dubious prescription, when there is a concern over its legitimacy, may not be ethical and acceptable.^[19] Pharmacists' real-life experience about drug abuse or misuse was assessed by asking their reactions toward customers' suspicious request for medications. Frequent request of refill of expired prescriptions and coming for early refill of prescription frequently are some of the

suspicious behaviors we observed in the study. In our study, most of the participants affirmed that they had reacted or denied prescriptions if they had serious concern about a prescription. Specifically, majority of pharmacists claimed that they had never dispensed a medication to a customer suspicious to be a misuser. Gender-specific difference was observed in the pharmacists' reaction to the suspicious situation of drug abuse and misuse. A quarter of female pharmacy staffs, compared to 5% among male staffs, were reluctant to respond to the situation. The cultural, religious, and gender-specific difference in the country may have influenced the attitude. It is critical that more than one-third of pharmacy technicians claimed that they did not react to suspicious prescriptions, and the reason might be the fact that they have limited access to talk directly to the patients when they come to pharmacy. A similar study conducted in United States reported that more than half of the study pharmacists never referred a patient to drug treatment in their career.^[6]

The participants in our study highlighted that possible reasons for drug abuse and misuse included, but were not limited to, lack of responsibility, dearth of effective communication between the health-care providers and patient and their family, missing follow-ups with doctors, wrong information about the euphoric effects of drugs, multiple prescribers, and lack of restriction of prescription of drugs by physicians. A similar finding was observed in a recently published data.^[20] A recent report from a de-addiction center^[21] also revealed that unemployment, lack of physical activity, self-treatment of depression, and simply boredom are also the reasons for drug abuse in the country. Other than implementation of education programs and punishment, participants recommend different solutions such as restrictions in prescribing of medication based on the prescriber's discipline, increasing the price of medication or including them in the insurance plan, restriction on quantity prescribed, implementing good unified electronic networking of records and tracking system of substance abusers, and more involvement of health-care providers including physicians and pharmacists in this sensitive issue. Moreover, according to ASHP, pharmacists should limit substance abuse problems by performing different activities such as providing and participating in substance abuse prevention and assistance programs, initiating educational programs for patients, technicians, colleges, other healthcare providers, under graduated students and community. In addition to referring patients and their families to support groups, contributing in identifying patients who may experience substance abuse, and providing optimum counseling sessions for those patients.

Limitations: Some pharmacy professionals were reluctant to participate in this study because they considered medication abuse or misuse as a very sensitive issue to talk about. This may affect their response in different way. Moreover, this study was conducted in Eastern Province, and thus we could not generalize the result to all the regions of Saudi Arabia. A similar study on the national level can give a clearer picture

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on whether medication abuse or misuse is a serious issue in Saudi Arabia or not.

Conclusion

This study provides an initial picture about pharmacists' and other pharmacy staffs' knowledge and opinion regarding the misuse and abuse of medicines in Saudi Arabia. There is still a lack in the knowledge among some participants about the differences between misuse and abuse of medications. Abuse and misuse can involve both OTC and prescription medications, and the participants' reactions toward such behavior were different and not consistent. Therefore, there should be a clear policy to define the role of the pharmacist toward the misuse and abuse of medication in Saudi Arabia.

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Conflicts of interest

There are no conflicts of interest.

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