


# Dentist's Experiences and Expectations of Pharmacists in Saudi Arabia

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## ABSTRACT

**Objectives:** To declare the dentist's experiences and expectations of pharmacists in the kingdom of Saudi Arabia. **Methods:** It is a 4-month cross-sectional study about dentist's experiences and expectations of pharmacists in Saudi Arabia. It self-administered validated electronic survey with closed-ended questions, and the 5-point Likert response scale system was used. The survey consisted of demographic data of responders and items about dentists' perception of pharmacists' actual experiences, pharmacists' recent experiences, future expectations of pharmacists, and barriers hiding the pharmacist role in the practice. **Results:** The total number of dentist's responders were 398 dentists. Of those, 205(51.51%) were male, and 193 (48.49%) were female. Most participants were 229(57.54%) general practitioners and 75(18.61%) residents. Many dentists contacted pharmacist for drug availability inquiries 311(79,13%) and drug-drug interactions questions 265(68.65%). The average scores of dentist's actual experiences of pharmacists were (3.12), the average scores of dentist's current expectations of pharmacists were (3.6), and dentist's future expectations of pharmacists were (3.52).

**Conclusion:** Dentist experience and expectations of pharmacists were inadequate in the kingdom of Saudi Arabia. Targeting pharmacists' awareness of pharmacists in the dental care and collaboration programs and activities or therapeutic guidelines between dentists and pharmacists are required.

**Key words:** Dentist, Experiences, Expectations, Perception, Pharmacists, Saudi Arabia.

## INTRODUCTION

Over the past years, the pharmacist provided extensive pharmaceutical care services in Saudi Arabia and worldwide with a high reduction of drug-related morbidity and mortalities and a high reduction of economic burden on the healthcare system.<sup>1-14</sup> Those pharmacy services are provided to the patients through collaboration with physicians and nurses. The healthcare staff contact pharmacists due to various reasons, including drug information inquiries.<sup>15-17</sup> However, the healthcare providers' current experience with pharmacists and future expectations of pharmacy services and their recommendations to improve the pharmacy services were critical to reaching the optimal health care services provided to the patients and beneficial and helpful in the pharmacy future strategic plan.<sup>18,19</sup> Various studies were conducted about healthcare providers, emphasizing physicians and their current experience and future expectations of the pharmacist in Saudi or elsewhere.<sup>20-30</sup> Most of the past studies included physicians only with different specialties. However, one of the healthcare staff who did not possess it before was the dentists. The dentist deal with various medications and alternatives drug used during dental care. The investigation of dentist experience and future expectations view is very crucial in practice. The authors were not familiar with any studies about the dentist's background and future pharmacists' future expectations in Saudi Arabia or the Gulf and Arabic countries. The objective of the current research to declare dentist experiences and future expectations for pharmacists in Saudi Arabia.

## METHOD

It is a cross-sectional study that discussed the dentist's experiences and expectations of pharmacists in Saudi Arabia. It self-reported an electronic survey of dentists. It included all dentists from internship to consultant and all dentistry specialties and located in Saudi Arabia. All non-dentists or students and non-completed surveys will be excluded from the study. The survey statement used from previous literatures.<sup>20-30</sup> It consisted of demographic information about dentists and the perception of the pharmacist in general practice. Reasons for dentists communicate with a pharmacist, Dentist Actual Experiences of a pharmacist, Dentist Current Expectation of pharmacist, Dentist Future Expectations of Pharmacists, Perceived barriers that can hinder a clinical pharmacist's role. The 5-point Likert response scale system was used. According to the previous literature, the sample was calculated as a cross-sectional study with unlimited population size, population percentage 50%, confidence level 95% with z score of 1.96, and margin of error 5% and drop-out rate 10%. As a result, the sample size will equal 385 to 432, with the power of study of 80%.<sup>31-33</sup> The response rate required of calculated sample size at least 60-70 % and above.<sup>33,34</sup> The survey was distributed through social media of what is up and telegram groups of dentists. The reminder message had been sent every 2-3 weeks. The survey was validated through the revision of expert reviewers and pilot testing. Besides, various tests of reliability McDonald's  $\omega$ , Cronbach alpha, Gutmann's  $\lambda_2$ , and Gutmann's  $\lambda_6$  had been done with the study. The data analysis

is done through the survey monkey system and the statistical package of social sciences (SPSS), and Jeffery's Amazing Statistics Program (JASP).

## RESULTS

The total responding dentists were 398, with most of them coming from the central region 242 (60.80%). Of those, 205 (51.51%) were male, while 193 (48.49%) were female with non-statistically significant differences ( $p>0.05$ ). Most dentists, 297 (78.16%), were age (23–30) years. Among them, 229 (57.54%) of dentists was general practitioner 75(18.84%) were resident with many of them were dental staff 271 (71.13%). Most dentists had experienced three years and less 271 (68.61%), with 145 (41.67%) non-specialized dentists. Almost one-third of dentists never contact the pharmacist, while 94 (23.68%) or 68 (17.13%) yearly or monthly contact with pharmacists, respectively (Table 1) and (Table 2). The dentist communicated with the pharmacist for Drug Availability inquiries 311 (79.13%) and Drug-Drug Interactions inquiries 265 (68.65%) and followed by Adverse drug reaction inquiries 246 (63.08%) and Alternative medicine inquiries 239 (62.08%); with statistically significant differences between the answers for each element ( $p<0.05$ ) as explored in Table 3. The average scores of dentists Actual Experiences of pharmacists were (3.12) with high scores element was pharmacists are a reliable source of general drug information (3.72), and pharmacists are a reliable source of clinical drug information (3.5). In contrast, the lowest scores were the pharmacists adjusts my patient's medication (2.82), and Pharmacists routinely inform me about less expensive alternatives to the drugs I prescribe (2.84), with statistically significant differences between the answers for each element ( $p<0.05$ ) as explored in Table 4. The average scores of dentist's current expectation of pharmacists were (3.6) with high scores element was hospital pharmacists to educate my patients

**Table 1: Demographic, social information.**

Nationality	Response Count	Response Percent	P
Central area	242	60.80%	< .001
North area	24	6.03%	
South area	27	6.78%	
East area	39	9.80%	
West area	66	16.58%	
Answered questions	398		
Skipped questions	0		
Gender	Response Count	Response Percent	P
Male	205	51.51%	0.548
Female	193	48.49%	
Answered questions	398		
Skipped questions	0		
Age	Response Count	Response Percent	P
23-30	297	78.16%	< .001
31-40	75	19.74%	
41-50	7	1.84%	
51-60	1	0.26%	
More than 60	0	0.00%	
Answered questions	380		
Skipped questions	18		

**Table 2: Demographic, social information.**

Physician Qualifications	Response Count	Response Percent	P
Intern	34	8.54%	< .001
Resident	75	18.84%	
General Practitioner	229	57.54%	
Specialist	36	9.05%	
Consultant	24	6.03%	
Answered questions	398		
Skipped questions	0		
Position Held	Response Count	Response Percent	P
Director of dental unit	55	14.44%	< .001
Assistant director of dental unit	14	3.67%	
Dental Director	41	10.76%	
Dental staff	271	71.13%	
Answered questions	381		
Skipped questions	18		
Years of experiences in a dental career	Response Count	Response Percent	P
<1	108	27.34%	< .001
1-3	163	41.27%	
4-6	71	17.97%	
7-9	21	5.32%	
9-12	19	4.81%	
>12	13	3.29%	
Answered questions	395		
Skipped questions	4		
Dentist Specialties	Response Count	Response Percent	P
Dental Public Health	5	1.44%	< .001
Endodontics	21	6.03%	
Oral and Maxillofacial Surgery	5	1.44%	
Oral Medicine and Pathology	2	0.57%	
Oral and Maxillofacial Radiology	2	0.57%	
Orthodontics and Dentofacial Orthopedics	20	5.75%	
Pediatric Dentistry	38	10.92%	
Periodontics	14	4.02%	
Prosthodontics	16	4.60%	
Restorative dentistry	29	8.33%	
Special needs dentistry	0	0.00%	
Non-applicable	38	10.92%	
General practitioner	145	41.67%	
Other (please specify)	13	3.74%	
Answered questions	348		
Skipped questions	50		
How you frequently communicate with pharmacists?	Response Count	Response Percent	P

Never	130	32.75%	< .001
Yearly	68	17.13%	
Monthly	94	23.68%	
Weakly	43	10.83%	
Daily	42	10.58%	
Other (please specify)	20	5.04%	
Answered questions	497		
Skipped questions	1		

about the safe and appropriate use of their medication (3.91) and expect pharmacists to be knowledgeable drug therapy experts (3.86). In contrast, the pharmacists' lowest scores helped me design drug therapy treatment plans for my patients (3.44). Pharmacists to perform therapeutic drug monitoring for my patients for selected drugs were (3.49) with statistically significant differences between the answers for each element ( $p < 0.05$ ) explored in Table 5. The average scores of Dentist Future Expectations of Pharmacists (3.52) with high scores element were Pharmacists in the future should bear a greater share of legal responsibility (liability) for the outcomes of drug therapy (3.62). In contrast, the lowest scores were the pharmacist in the future has privilege prescribe the dental over the counter medications and refill dental medications (3.41) with statistically

**Table 3: Reasons for dentist communicate with pharmacists.**

	Yes		No		Uncertain		Total	P-value
	%	n	%	n	%	n		
Adverse drug reaction inquiries	63.08%	246	22.05%	86	14.29%	50	350	< .001
Drug Availability inquiries	79.13%	311	11.45%	45	9.35%	33	353	< .001
Compatibility/Stability (chemical, Pharmaceutical, sorption, solubility, etc.) inquiries	50.77%	197	27.58%	107	21.20%	74	349	< .001
Compounding / formulation/ Extemporaneous preparations inquiries	44.44%	172	31.78%	123	23.28%	81	348	< .001
Dosage/schedule inquiries	59.28%	230	26.03%	101	15.23%	53	348	< .001
Drug of choice/therapeutics/ Pharmacology inquiries	52.97%	205	30.75%	119	16.38%	57	348	< .001
Drug Identification inquiries	52.62%	201	29.32%	112	17.84%	61	342	< .001
Drug Administration inquiries	50.65%	196	33.85%	131	16.38%	57	348	< .001
Pharmacoeconomics/medications cost inquiries	38.34%	148	44.30%	171	17.92%	62	346	< .001
Pharmacokinetics inquiries	37.76%	145	41.15%	158	20.00%	69	345	< .001
Pregnancy/lactation/teratogenicity inquiries	58.07%	223	28.91%	111	12.75%	44	345	< .001
Poisoning/Toxicology inquiries	56.25%	216	30.47%	117	13.62%	47	345	< .001
Drug-Drug Interaction inquiries	68.65%	265	22.28%	86	8.67%	30	346	< .001
Drug-food interaction inquiries	54.40%	210	31.87%	123	14.12%	49	347	< .001
Drug and laboratory information inquiries	43.41%	168	38.24%	148	17.53%	61	348	< .001
Medications Storage inquiries	46.51%	180	37.73%	146	15.23%	53	348	< .001
Drug indications inquiries	46.51%	180	38.24%	148	14.12%	49	347	< .001
Off labeled used inquiries	37.47%	145	36.18%	140	25.29%	88	348	< .001
Over the counter medications inquiries	42.71%	164	38.28%	147	19.08%	66	346	< .001
Herbal medicine inquiries	29.02%	112	52.33%	202	18.21%	63	346	< .001
Alternative medicine inquiries	62.08%	239	25.45%	98	12.72%	44	346	< .001
Protocol or Guidelines of dental management inquiries	36.00%	140	49.10%	191	14.86%	52	350	< .001
Medications wastage inquiries	35.32%	136	47.27%	182	17.05%	59	346	< .001
Therapeutic interchange inquiries	41.97%	162	35.75%	138	21.97%	76	346	< .001
Alternative medications inquiries	59.28%	230	26.03%	101	15.52%	54	348	< .001
Other (please specify)	0.00%	0	0.00%	0			1	
Answered							396	
Skipped							2	

significant differences between the answers for each element ( $p < 0.05$ ) as explored in Table 6. The average scores of Perceived barriers that can hinder a clinical pharmacist's role (3.3) with high scores element were dentists. Other healthcare members are unaware of the benefits of having a clinical pharmacist on their team (3.49). The specific responsibilities of a clinical pharmacist are not clearly defined (3.48). In contrast, the lowest scores of clinical pharmacists in other tasks interrupt patient care (3.05). The clinical pharmacist does not have the proper communication skills needed for interaction with other healthcare providers was (3.08), with statistically significant differences between the answers for each element ( $p < 0.05$ ) explored in Table 7. The reliability test of McDonald's  $\omega$  (0.832), Cronbach alpha (0.910), Gutmann's  $\lambda_2$  (0.918), and Gutmann's  $\lambda_6$  (0.953).

## DISCUSSION

The dentist deals with various medications prescribing or administration, including but not limited to anesthesia medications, pain management drugs, and antibiotics... etc.<sup>35-37</sup> Those types of classes had multiple

medications with different names, dosage forms, various doses for indications, different doses based on age stages, and renal or liver function need to be reviewed before prescribing those medications.<sup>38-40</sup> Besides, enormous medication safety elements need to be considered before prescribing, including medication errors, adverse effects, prescribing skills, and patient's counseling of their medications.<sup>41,42</sup> As a result, the dentists need a pharmacist or clinical pharmacist in drug therapy and medication safety. The current study will help dentists explore their demanding elements and pharmacist to provide pharmaceutical care services to patients, assist dentists in successful medication therapy, and prevent drug-related problems in dental care. The study with an adequate sample size number of dentists; with the excellent power of the study with more than the number of a sample size than previous physician pharmacist studies.<sup>21-30,43</sup> However, the reliability test resembled one previous study.<sup>20</sup> The authors were not familiar with any earlier publications about dentist perception of pharmacists. As a result, most comparisons with physician perceptions of pharmacist's studies. The current study applied more than one test of reliability with

**Table 4: Dentist Actual Experiences of the pharmacist.**

	Strongly Disagree		Disagree		Uncertain		Agree		Strongly agree		Total	Weighted Average	P-value
In my experience, pharmacists are a reliable source of general drug information (i.e. specific facts about drugs which can be found in standard references)	4.90%	19	3.35%	13	27.84%	108	42.27%	164	21.65%	84	388	3.72	< .001
In my experience, pharmacists are a reliable source of clinical drug information (i.e., information regarding the clinical use drugs in specific situations)	4.90%	19	8.51%	33	32.73%	127	39.43%	153	14.43%	56	388	3.5	< .001
Pharmacists routinely counsel my patients regarding the safe and appropriate use of their medications	4.13%	16	12.92%	50	35.92%	139	38.24%	148	8.79%	34	387	3.35	< .001
Pharmacists routinely inform me if they discover clinical problems with my prescriptions	6.72%	26	19.38%	75	32.82%	127	29.20%	113	11.89%	46	387	3.2	< .001
Pharmacists routinely inform me about less expensive alternatives to the drugs I prescribe	11.66%	45	24.35%	94	37.82%	146	20.47%	79	5.70%	22	386	2.84	< .001
Pharmacists routinely inform me about more cost-effective alternatives to the drugs I prescribe	10.59%	41	23.26%	90	37.47%	145	23.77%	92	4.91%	19	387	2.89	< .001
Pharmacists frequently ask me to clarify for them the drug therapy objectives I have in mind for my patients	9.07%	35	24.61%	95	40.16%	155	21.24%	82	4.92%	19	386	2.88	< .001
Pharmacists frequently let me know that my patients have experienced some problem with their medication	10.10%	39	25.65%	99	35.23%	136	24.09%	93	4.92%	19	386	2.88	< .001
I have a relationship with one or more pharmacists wherein the pharmacists adjusts my patient's medication with my prior approval	9.87%	38	29.35%	113	34.29%	132	21.82%	84	4.68%	18	385	2.82	< .001
In my experience, pharmacists appear willing to take personal responsibility for resolving any drug-related problems they discover	7.53%	29	16.62%	64	40.26%	155	28.83%	111	6.75%	26	385	3.11	< .001
Answered												<b>389</b>	
Skipped												<b>9</b>	

results all high scores. The study was validated by other methods, which face to face expert reviewers. Those tests reflected more reliability and validation of survey questionnaires than previous studies.<sup>21-30,43</sup> The study is the gender of dentists' responders almost equal, reflecting the experience and expectation as the population that's resemble of few studies<sup>22,29</sup> while differed from others.<sup>21,23,24,27,30,43,44</sup> That might be related to physician gender workforces. Most of the responder' dentists were young with low experience, and non-specialized dentists resemble previous physician's studies.<sup>23,27,29,30,43</sup> That results were expected because the younger dentist is more interested in research participation than

the older dentist. Besides, it might reflect more communication with the pharmacist than the consultant's dentists. The younger dentist has more contact with medications and, subsequently, high demand for drug information from a pharmacist. Unfortunately, the study showed that one-third of the dentists never or very rarely communicated with pharmacists resembled previous physicians' studies.<sup>21,23,27,43</sup> That is related to insufficient knowledge of the pharmacist's role in the practice. It was displayed during the dental internship program, or the pharmacist did not involve in dental teaching or dental training programs. In the study, the dentist contacted the pharmacist to ask mostly about drug

**Table 5: Dentist Current Expectation of pharmacist.**

	Strongly Disagree		Disagree		Uncertain		Agree		Strongly agree		Total	Weighted Average	P-value
I expect pharmacists to take personal responsibility for resolving any drug related problems they discover involving my patients	5.41%	21	13.92%	54	30.67%	119	39.95%	155	10.05%	39	388	3.35	< .001
I expect pharmacists to advise me about more cost-effective alternatives to the drugs I prescribe	5.99%	23	9.64%	37	24.22%	93	46.61%	179	13.54%	52	384	3.52	< .001
I expect pharmacists to be knowledgeable drug therapy experts	2.86%	11	5.71%	22	18.96%	73	47.79%	184	24.68%	95	385	3.86	< .001
I expect hospital pharmacists to assist me in designing drug therapy	3.10%	12	9.30%	36	26.87%	104	43.15%	167	17.57%	68	387	3.63	< .001
I expect hospital pharmacists to educate my patients about the safe and appropriate use of their medication	4.15%	16	4.15%	16	18.13%	70	43.78%	169	29.79%	115	386	3.91	< .001
I expect hospital pharmacists to monitor my patients' response to drug therapy and let me know if a patient encounters any drug-related problem	4.16%	16	11.43%	44	26.49%	102	41.56%	160	16.36%	63	385	3.55	< .001
I expect hospital pharmacists to know the specific indication of each drug I prescribe, even when medications have more than one approved or recognized indication	3.90%	15	7.79%	30	25.71%	99	43.90%	169	18.70%	72	385	3.66	< .001
In the healthcare setting, I expect pharmacists to be available to me for consultation when I see patients	4.44%	17	7.83%	30	26.11%	100	44.13%	169	17.49%	67	383	3.62	< .001
I expect hospital pharmacists to perform therapeutic drug monitoring for my patients for selected drugs	3.38%	13	11.69%	45	29.87%	115	42.86%	165	12.21%	47	385	3.49	< .001
I expect the pharmacists to assist me in designing drug therapy treatment plans for my patients	3.63%	14	11.14%	43	33.94%	131	39.90%	154	11.40%	44	386	3.44	< .001
Answered												388	
Skipped												10	

**Table 6: Dentist Future Expectations of Pharmacists.**

	Strongly Disagree		Disagree		Uncertain		Agree		Strongly agree		Total	Weighted Average	P-value
In the future, I would like pharmacists to provide the following services routinely: Adjust the drug therapy for some of my patients (e.g., those with individual chronic disease states) using protocols that I have approved, Monitor and document my patient's response to drug therapy, Be-on-call to my patients for questions about their medication	5.41%	21	7.73%	30	30.93%	120	36.34%	141	19.59%	76	388	3.57	< .001
Pharmacists in the future should bear a greater financial responsibility for patient's drug therapy outcomes	3.89%	15	7.25%	28	37.82%	146	36.79%	142	14.25%	55	386	3.5	< .001
Pharmacists in the future should bear a greater share of legal responsibility (liability) for the outcomes of drug therapy	3.61%	14	7.22%	28	29.12%	113	43.56%	169	16.49%	64	388	3.62	< .001
The pharmacist in the future has privilege prescribe the dental over the counter medications and refill dental medications	3.36%	13	13.70%	53	33.07%	128	38.50%	149	11.37%	44	387	3.41	< .001
The pharmacist in future had clinical and administrative privileges as part of pharmacy law	3.61%	14	5.67%	22	36.60%	142	42.01%	163	12.11%	47	388	3.53	< .001
Answered												388	
Skipped												10	

availability resembles previous studies.<sup>21,23,24,27,29</sup> The second type of inquiries about drug-drug interaction, or adverse drug reaction, which reflect the dentists' caring for dental medication safety or pharmacists, implemented the medication's safety program with dental care services. The dentists' actual general experience toward the pharmacist was not positive, which was consisted of a previous study.<sup>20</sup> The pharmacist is not involved with dental care or not well-established pharmacy dental therapeutic program or guidelines. The dentist's actual experiences of the pharmacist were comfortable as sources of drug information. At the same time, not agree with pharmacists involved in drug therapy during dental care services, resemble previous physician studies.<sup>21-24,27,29,30</sup> That reflects the pharmacist did not involve the dentist during the round or treating team with the dentist. Furthermore, the pharmacist did not practice with dentists at their ambulatory care clinics. Besides, during dentistry, college studying might involve teaching the dentist or doing rounds with pharmacy students.

The general dentist's current pharmacists' current expectations were inadequate, resembling the previous investigation.<sup>20</sup> The dentists do not know about pharmacists' role in drug therapy and favorable clinical outcomes, reducing the healthcare institutions' dental care system's economic burden. Most of the dentist's current expectations of the pharmacist was that pharmacist should educate the patients about medications and reliable medication information resources that resemble previous physician studies.<sup>21-24,27,29,30,43,44</sup> The general dentist's future expectations on pharmacists were not optimal with resembling past findings.<sup>20</sup> That is based on initial experiences and expectations. The dentist expected the pharmacist in the current or future to have

more involvement in dental drug therapy and related outcomes while not expected to involve in prescribing privilege resembled of previous studies.<sup>23,24,26,27,29,30</sup> That reflects the high dentist demand for pharmacists during dental disease management. The study showed that dentists are not familiar with pharmacists' role in the practice and the pharmacists' benefits clearly defined. The dentists disagree with a pharmacist who had lousy communication skills or a pharmacist involved with the dental team to interrupt patient care. As results, awareness sessions about pharmacist during dental college and in dental care is highly recommended.

#### Study limitations

Despite the defined finding of the current investigation exploring the recent experience and future expectation at dental care; and reflected inadequate collaboration programs between the dentists and pharmacists. The had various limitations that have included but not limited to the study not represented to all age level; most responders were young; might the higher age had different experiences and expectations of pharmacists. Many responders consisted of new graduates and internship trainees without adequate communication and experiences with pharmacists. The study did not cover most dentist's specialties; it might find additional results. Besides, most responders were one to two regions, not covered in all geographical areas in Saudi Arabia.

## CONCLUSION

Most dentists contacted pharmacists for drug availability and adverse drug reaction inquiries, although One-third of dentists is never getting a pharmacist. Dentist experience of pharmacists was inadequate with adequate perception of pharmacists as drug information resources. The

**Table 7: Perceived barriers that can hinder a clinical pharmacist's role.**

	Strongly Disagree		Disagree		Uncertain		Agree		Strongly agree		Total	Weighted Average	P-value
The specific responsibilities of a clinical pharmacist are not clearly defined.	4.13%	16	8.27%	32	36.18%	140	38.24%	148	13.18%	51	387	3.48	< .001
Dentist and other healthcare members are unaware of the benefits of having a clinical pharmacist on their team	4.66%	18	12.44%	48	29.02%	112	36.53%	141	17.36%	67	386	3.49	< .001
Healthcare members are unable to judge the knowledge and level of skills of the clinical pharmacist	2.84%	11	11.34%	44	33.51%	130	40.21%	156	12.11%	47	388	3.47	< .001
Healthcare members have a low level of trust in the clinical pharmacist's abilities	6.20%	24	18.60%	72	36.95%	143	30.75%	119	7.49%	29	387	3.15	< .001
The clinical pharmacist does not have the proper communication skills needed for interaction with other healthcare providers	7.01%	27	21.04%	81	35.84%	138	29.09%	112	7.01%	27	385	3.08	< .001
Healthcare professionals have no prior experience of working with a clinical pharmacist	3.38%	13	9.35%	36	37.92%	146	37.14%	143	12.21%	47	385	3.45	< .001
Involvement of clinical pharmacists in other tasks interrupt the continuity of patient care	6.22%	24	22.80%	88	38.08%	147	25.13%	97	7.77%	30	386	3.05	< .001
Clinical pharmacists are not accessible when needed	5.66%	22	16.45%	64	38.05%	148	28.28%	110	11.57%	45	389	3.24	< .001
Answered												<b>390</b>	
Skipped												<b>8</b>	

dentists' expectations were not positive with pharmacists' high respect to provide medications education for their patients. In the future, the dentist expects the pharmacist to be involved in dental drug therapy and responsible for patient outcomes and choose the appropriate and cost-effective medications during dental practice in Saudi Arabia.

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## CONFLICT OF INTEREST

None.

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## Consent for Publications

Informed consent was obtained from all the participants

## Ethical Approval

This research is exempted from research and ethical committee or an institutional review board (IRB) approval.

<https://www.hhs.gov/ohrp/regulations-and-policy/decision-charts-2018/index.html>

## ABBREVIATIONS

MOH: Ministry of Health; KSA: Kingdom of Saudi Arabia; SPSS: Statistical Package of Social Sciences; JASP: Jeffery's Amazing Statistics Program.

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