

Evaluation of Discernment and Acquaintance Concerning Online Pharmacy Services Among Dentists and Patients

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Citation of this Article: Dr. Hansika Popli, Dr. Simarpreet Singh, Dr. Manu Batra, Dr. Deeksha Gijwani, Dr. Anjali Ahuja, Dr. mir shayan shakeel, “Evaluation of Discernment and Acquaintance Concerning Online Pharmacy Services Among Dentists and Patients”, IJDSIR- May - 2020, Vol. – 3, Issue -3, P. No. 148 – 156.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Introduction: Agenda of these online pharmacies is to provide handy and reasonably priced medicines to consumers with a guaranteed safety and security but intentionally or unintentionally doing of wrong things cannot be ruled out. As dentists in close contact with pharmacy business a comparison with patients was in a need, to know their perspective towards online pharmacy. To square out discernment and acquaintance

concerning online pharmacy services among dentist and patients in Sri Ganganagar city.

Study and Design: It was a cross sectional comparative questionnaire based study conducted on dentists and patients of Sri Ganganagar city.

Material and Methods: The data was collected through a close ended pre tested⁸ and validated questionnaire consisting of 20 questions, dentists were approached through emails and social media platform whereas patients

filled the form themselves at reception area of different private clinics of Sri Ganganagar city.

Statistical analysis used: Chi square test, Fisher exact test & SPSS version 20 was used to done statistical analysis and level of significance set at $p < 0.05$.

Results: Only 53.1 % of respondents had used online pharmacy for ordering dental drugs out of which 30.5% were dentists and 22.6% were patients. 45.3% of dentists and 37.6% of patients agreed that these websites provide medicines which are not easily available in market. Education level ($p = 0.05$) affect the tendency of acquiring online medicines. More number of dentists think purchasing dental medicine through online pharmacy would be safe as results of this question was statistically significant ($p < 0.05$).

Conclusions: To conclude we can say that positive perception on online pharmacy mode clearly depends on a socio demographic status of a person irrespective of what occupation he belongs too.

Keywords: Dentist, Patients, Online Pharmacy, Discernment, Acquaintance

Introduction

Analyzing the concept and process of ailments is always a grim task. It is a process which had been remained undiscovered from past several years.¹ Societies had established various therapeutic methods that are useful in combination for a number of health and life-threatening diseases.²

One such common method is use of drugs and medicines. These are combination of chemicals which are used to treat, stop or prevent disease. From prehistoric times we are using medicines to alleviate and treat diseases. Improvement in recent drugs and medicines are helping doctors in treating and saving a number of lives.

Sometimes it seems like that there is a greater number of a medicine than there are diseases, and it had become

difficult to keep them straight. These medications can be bought and purchased from various sources like from hospitals, pharmacy counter and other stores. The most recent advancement from where people can purchase medicines is online pharmacies.³

Online pharmacies in its early years of 19th century take order through mails and do trades but with moot cures. With the various benefits in services like easy admission, free shipping and fancy discounts and with or without need of prescriptions had made the process easier than getting them at traditional pestle-and-mortar pharmacies. All this had become much more affordable.^{4,5}

With the growth of internet world this pace has also grown to a different level. But it should not be that easy when it comes to topic of health care. Although the agenda of these online pharmacies is to provide handy and reasonably priced medicines to consumers with a guaranteed safety and security but intentionally or unintentionally doing of wrong things cannot be ruled out. Like everything has pros and cons online pharmacies also have both aspects to look into.

Dentist in their clinical practice prescribe ample number of drugs to patient and they are in close contact with this pharmacy business and that's why it is important to know and compare their perspective with patients on concern, features and risk factors on online pharmacy. Hence this study is done to square out discernment and acquaintance concerning online pharmacy services among dentist and patients in Sri Ganganagar city.

Materials and methods

The present cross sectional comparative study was conducted among the dentists and patients in Sri Ganganagar, Rajasthan during the month of January and February 2020. Ethical approval to conduct the study was obtained from the institutional ethical committee. Written

informed consent was obtained from the participants after explaining them the aim and objectives of the study.

A close ended pre-tested⁸, validated questionnaire consisting of 20 questions to evaluate behavioral outlook, knowledge and perception of dentist and patients regarding online pharmacies. The questionnaire tested among a convenience sample of 20 dentists and 20 patients, who were interviewed to gain feedback on the overall acceptability of the questionnaire in terms of length and language clarity. Based on their feedback, the questionnaire did not require any corrections. Cronbach coefficient was found to be 0.80, which showed an internal reliability of the questionnaire and also around 90% of patients respondents doesn't have knowledge about online pharmacy from these results sample size estimation was done. the total sample for dentist is 139 and same for the patients

The questionnaire was divided into two sections—Section A was “General section” containing sociodemographic details (gender) and professional background information of the participants (employment, education and occupation). Section B comprised of consisting of 20 questions to evaluate behavioral outlook, knowledge and perception of dentist and patients regarding online pharmacies on a likert scale.

The data collections for the dentists, they were approached through emails and social media platform whereas patients filled the form themselves at reception area of different private clinics of Sri Ganganagar city. A total 228 completed forms out of which 95 forms were filled by dentists and 133 forms were filed by patients. Remaining forms were excluded from the study either due to incompleteness or non-return.

Statistical Analysis: The data were statistically analyzed by using IBM SPSS (version 20.0. Armonk, NY: IBM Corp). The statistical analysis was determined by the chi-

square test; fisher exact test with level of significance which was set at $p < 0.05$.

Results

In this study out of all participants 41.6% were dentists and 58.4% were patients among them 69.5% of dentists 49.6% of patients were employed. Out of all the dentists 68.4% were graduated and 31.6 % had completed their post-graduation. 50.4% of patients had completed their degree after schooling. A chi-square & Fisher's exact test of independence was performed to examine the relation between exposed groups (dentists and patients) and their employment & education level. The relation between these variables was significant, i.e. p value < 0.05 . (Table 1)

Out of all the 228 respondents in which 95 were dentists and 133 were patients, only 53.1 % of respondents had used online pharmacy for ordering dental drugs out of which 30.5% were dentists and 22.6% were patients. When comparison were done on basis of buying medicine from online pharmacy in future than 61.1% of dentists and 34.6 % of patients said that they will buy medicine from online pharmacy in future. Only 22.1% of dentists and 27.1% of patients know the rules and regulations regarding online pharmacy in India. 45.3% of dentists and 37.6% of patients agreed that these websites provide medicine which was not easily available in market. More than 50% of dentists and patients agreed that there are illegal websites for selling drugs on internet. 31.6% of dentists and 17.3% of patients disagree to the statement that there is an uncertainty about timely delivery of medicines. 11.6% dentists and 53.4% patients agreed that these websites are operated from outside India. (Table 2)

According to our survey education level ($p = 0.05$) affect the tendency of acquiring online medicines. More number of dentists thinks purchasing dental medicine through online pharmacy would be safe as results of this question were statistically significant ($p < 0.05$). (Table3) fallout to

the query that online pharmacy provides better prices and easy access to drug information show that employment, education and occupation affect the discernment of people as p value prove to be statistically significant. (Table 4)

Discussion

Purchasing medicines through online pharmacies is becoming latest trend in today's scenario. As a result of these trends there is a rapid increase in online pharmacy sites. But it is to be noted that there are very few studies completed in literature to check and compare perception and knowledge among dentists and patients towards online pharmacies. Due to lack of literature, the present study is done predominantly to check and compare discernment and acquaintance regarding online pharmacy services among dentist and patients.⁸

In our study out of all the respondents less than half of participants were unemployed and were having no income at an individual level which is similar to study conducted by Abanmy N¹⁰. In terms of education level Sah et al⁸ described that almost two third of respondents had completed their degree and diploma which is alike to our study.

In 2015 Pal S et al¹¹ resolute that more than two third of respondents do not buy medicines from online pharmacy which is similar to our study. Out of left respondents more number of dentists had used these services for purchasing medicines when equated to patients' group. This was because of the assumption that dentists were more aware of these services due to their dental profession.

Sah et al⁸ observed that about a greater number of respondents who were not purchasing medicines online are interested in favor of buying medicine through online pharmacy in future which is quite similar to our study in case of dentists that is in contrast to patients which were not seen much motivated.

In this study mostly participants agreed that features like better prices & easy drug information, delivery at door step in less than 24 hrs and offers on medicines, personalize medicine reminder services and easily availability of medicines attract them towards online pharmacy. These finding are constant with other studies in which expediency related factors were mentioned by consumers as illustrating-factor toward online pharmacy.⁸

Due to stricter rules and regulations an eye on these online sites by government bodies more than one third of patients and dentists disagreed to the statement that they provide medicines which are counterfeit or illegal in contrast to a study done by Pal S et al¹¹ where 51.8% of respondents agree that online services give medicines which does not match to standards.

Gender does not play a role in purchasing and dealing with online pharmacy and its services which is similar to study conducted by Pal S et al¹¹. Employment, education and occupation effect the perception and thinking of people as these three are a determinants of an individual's life in contemporary state of affairs.

The Drugs and Cosmetics Act, 1940, and the Drugs and Cosmetics Rules, 1945, have guidelines on the sale of drugs. Currently, Indian pharmacy law do not distinguish between online and offline pharmacy. The Union Health Ministry of India on 28 august 2018 has come out with draft (sale of drugs by e-pharmacy) rules on sale of drugs by online / e-pharmacies with a plan to legalize online sale of medicines across India and provide patients access to genuine drugs from genuine online portals.¹²

Limitations

There are some limitations to the study as it was a cross sectional study done in a single city and hence results cannot be generalized with universal population of country.

Conclusion

We would like to say though we are living in 21st century and technologies are civilizing day by day not only in the field of health but in each and every twig of human needs. Concept of online pharmacy is fetching attraction of inhabitants but still citizens don't know much about rules and regulations as well as positive and negative outcomes of these services. Dentists as they are themselves in the branch of health are more concerned, aware and have positive perception about this topic as compare to patients. Although we can say that positive perception on online pharmacy mode clearly depends on a socio demographic status of a person irrespective of what occupation he belongs too. As a public health dentist we would say to discuss this topic in our group as well as to educate patients so that there will be progression in the knowledge and positive attitude among them.

Acknowledgement: we would like to thank surendera dental college and research institute, sriganaganagar for giving us ethical clearance as well as to the faculty members for their cooperation.

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Legends Tables

Table 1 Demographic of respondents					
Employment					
Group		Frequency	Percent	Chi square	P value
Dentists	Unemployed	29	30.5	8.9571	.002764
	employed	66	69.5		
	Total	95	100.0		
Patients	unemployed	67	50.4		
	employed	66	49.6		
	Total	133	100.0		
EDUCATION					
Group		Frequency	Percent	Fisher's exact test	P value
Dentists	intermediate	0	0	85.714	0.000
	graduation	65	68.4		
	Post-graduation	30	31.6		
	Total	95	100.0		
Patients	intermediate	66	49.6		
	graduation	43	32.4		
	Post-graduation	24	18.0		
	Total	133	100.0		

Table 2 Response of Participants toward each question					
Question	Responses	Group		Chi square value	p value
		Dentists % (N)	Patients % (N)		
Medicine purchase experience of participants					
Have you ever used an online pharmacy for ordering dental drugs	yes	30.5% (29)	22.6% (30)	1.514	0.222
	no	69.5% (66)	77.4% (103)		
What is your opinion about the following					
Would you like to buy medicines through online pharmacy in future	yes	61.1% (58)	34.6% (46)	15.647	0
	no	38.9% (37)	65.4% (87)		
Do you know about regulations regarding online pharmacies in India	Yes	22.1% (21)	27.1% (36)	0.728	0.44
	no	77.9% (74)	72.9% (97)		

Attractive features of online pharmacy					
Websites provides medicines that are not easily available	agree	45.3% (43)	37.6% (50)	2.473	0.29
	neither agree nor disagree	13.7% (13)	21.1% (28)		
	disagree	41.0% (39)	41.4% (55)		
Concerns regarding online pharmacy					
There are Illegal websites for selling drugs online on internet	agree	54.7% (52)	58.6% (78)	11.359	0.003
	neither agree nor disagree	10.6% (10)	23.3% (31)		
	disagree	34.7% (33)	18.0% (24)		
Risk characteristics of online pharmacy					
Online pharmacies are being operated from abroad (outside India) only	agree	11.6% (11)	53.4% (71)	46.901	0
	neither agree nor disagree	40.0% (38)	12.8% (17)		
	disagree	48.4% (46)	33.8% (45)		

Table 3 Effect of gender , employment , education and occupation on purchasing drugs from online pharmacy								
Variables	Have you ever used an online pharmacy for ordering dental drugs?		Chi-Square	P value	Do you think purchasing dental medicine through online pharmacy would be safe ?		Chi-Square	P value
	YES N (%)	NO N (%)			Yes N (%)	No N (%)		
GENDER								
Male	34(57.6)	99(58.6)	.016	.509	60(63.8)	73(54.5)	1.988	.101
Female	25(42.4)	70(41.4)			34(36.2)	61(45.5)		
EMPLOYMENT								
Unemployed	18(18.7)	78(81.3)	4.391	.025	31(33.0)	65(48.5)	5.465	.014
employed	41(31.1)	91(68.9)			63(67.0)	69(51.5)		
EDUCATION								
Intermediate	8(13.6)	58(34.3)	10.467	.005	17(18.1)	49(36.6)	9.799	.007
Graduation	31(52.5)	77(45.6)			49(52.1)	59(44.0)		
Post-graduation	20(33.9)	34(20.1)			28(29.8)	26(19.4)		
OCCUPATION								
Dentists	29(49.2)	66(39.1)	1.835	.115	51(54.3)	44(32.8)	10.428	.001
Patients	30(50.8)	103(60.9)			43(45.7)	90(67.2)		

Table 4 responses to question over attractive features of online pharmacy					
Variables	Online pharmacies provide better prices and easy access to drug information ?			Chi-Square	p
	Agree N (%)	Neither agree nor disagree N (%)	Disagree N (%)		
GENDER					
Male	52(39.1)	39(29.3)	42(31.6)	2.356	.308
Female	45(47.4)	20(21.1)	30(31.6)		
EMPLOYMENT					
Unemployed	28(29.2)	43(44.8)	25(26)	31.509	.0001
employed	69(52.3)	16(12.1)	47(35.6)		
EDUCATION					
Intermediate	30(45.5)	26(39.4)	10(15.2)	21.828	.0001
Graduation	37(34.3)	27(25)	44(40.7)		
Post-graduation	30(55.6)	06(11.1)	18(33.3)		
OCCUPATION					
Dentists	46(48.4)	14(14.7)	35(36.8)	10.561	.005
Patients	51(38.3)	45(33.8)	37(27.8)		