

## ORIGINAL ARTICLE

## Awareness and Perception of Online Pharmacy among the General Population and the Pharmacists in Indore City of Madhya Pradesh: A Cross-Sectional Study

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### ABSTRACT

**Background:** Online pharmacy is very important technology's innovation, fulfilling unmet medical needs of general population with the help of internet services through mobile and a web-based application. Hence, this study tries to find out awareness and perception of online pharmacy among the general population and the pharmacists due to increase trend of internet use. **Objectives:** This study aimed to assess awareness and perception of online pharmacy among the general population and the pharmacists in Indore city of Madhya Pradesh. **Materials and Methods:** The present study was a cross-sectional study, conducted in 200 study subjects (150 general population and 50 pharmacists) selected using sequential sampling method in Indore city, for 4 months duration. Informed consent in written was taken from the study subjects. The study tool was pre-designed semi-structured questionnaire. Data entry was done in Excel sheet and analyzed using SPSS software. **Results:** In the present study, out of 200 subjects, 150 were general population and 50 were pharmacists. Out of 150 general population, majority were male between age 18 and 30 years, while majority 60% of pharmacists were from between 41 and 50 years. About 65.3% of population were aware of online pharmacy, while majority of them 55% came to know about it through internet but in our study subjects, level of utilization of online pharmacy was very low (12%) as majority 40% of them had trust issues on it so preferred traditional offline pharmacies. Out of 50 pharmacists, in the current study, only 42% of pharmacists were providing online services while rest 58% of them were offline pharmacists, out of which only 12% were interested in collaboration with online pharmacies. Majority 90% were against the online pharmacy as it was affecting their offline retail pharmacy business. According to 56% of offline pharmacists, reason of non-collaboration with online pharmacies was economic issues. **Conclusion:** The results of the current study concluded that there were a knowledge deficit with regard to online pharmacy and hence purchasing medicines from online pharmacies were not a common practice in this current study sample. However, it does not necessarily mean that there are no intentions to use such services in future as users, held positive perception of online pharmacies. All the pharmacists were aware about online pharmacy and almost all were against the idea of online pharmacy as their retail business was affected due to decrease in profit margin. The choice of an online pharmacy by the general population and pharmacists was mainly influenced by convenience.

**Key words:** Information education and communication, electronic-health, Diploma in Pharmacy, Bachelor of Pharmacy, Master of Pharmacy

### INTRODUCTION

“Reaching to unreached” proved by the technology, as it has been reached to unreached population with the help of internet services through mobile and a web-based application.<sup>[1]</sup> Under the Digital India initiative, the Government of India has set up various e-health services, like online pharmacy which help in bringing price transparency, create awareness, find an appropriate health-care service

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provider, medicine reminders, and pregnancy alerts to the general population.<sup>[1,2]</sup>

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Online pharmacy enables the existing traditional brick and mortar pharmacies to cater a broader set of customers. In addition, it also benefits chronic elderly patients living in nuclear families, and patients who are not in a condition to go out to find a pharmacy. It also offers competitive pricing which thereby enables less affluent people to afford medicinal products. Factors driving the demand for online pharmacy in India include rising number of people with unmet medical needs due to large population and increasing penetration of internet in India.<sup>[1]</sup>

At present, online pharmacy is at its nascent stage in India, but like other categories, it has the potential to be a very large industry segment in the near future. About 5–15% of the total pharma sales in India is expected that it could account for largely by enhancing adherence and access to the medicines for a lot of under privileged population.<sup>[3]</sup> The present study conducted to evaluate awareness and perception of online pharmacy among the general population and the pharmacists in Indore city.

## MATERIALS AND METHODS

This was a cross-sectional, community-based observational analysis to assess awareness and perception of online pharmacy among the general population and the pharmacists in Indore city, conducted from September 1, 2019, to December 1, 2019, using sequential sampling method. Interview of study subjects was done by interpersonal interview through pre-designed semi-structured questionnaire for general population and pharmacists. Data were collected and entered into MS Word and MS Excel sheet and were analyzed using SPSS software. The graphical representation of data was done using figures and tables. The descriptive representation of data was done in the form of frequency and percentages, calculated in MS Excel.

For the study, only those participants were included, who were more than 18 years of age and gave consent. Unregistered pharmacists were excluded.

### Distribution and Calculation of Sample Size

Indore city is divided into four zones, by the Department of Health and Family Welfare: Nandanagar, Malharganj, Sanyogitaganj, and Hukumchand. From each zone, one major hospital was selected, but from one zone, we took two hospitals, so we took total five hospitals. Around each major hospital, 10 pharmacies were identified, so picked 50 pharmacies and 50 pharmacists were interviewed. From each hospital, 30 subjects ( $30 \times 5 = 150$  visitors/patients) were selected by simple random sampling method using Chit method. A total of 200 subjects (150 visitors/patients and 50 pharmacists) were interviewed. We took interview of whoever willing, sitting in the hospital or more than 18 years,

or giving consent for the study. Informed consent in written was taken from the study subjects.

### Sample Size Calculation

$$\text{Sample size } (N) = \frac{4PQ}{D^2}$$

Where, P = Prevalence from previous studies = 43

Q = 100–P = 100–43=57

D = absolute allowable error = 7%

N =  $4 \times 43 (100-43)/49 = 200.08$

Thus, 200 sample size was taken for the study.

## RESULTS

Among 200 sample size, 150 were general population and 50 were pharmacists. Out of 150 general population, more than half of the respondents 88 (58.6%) were male and majorly 73 (48.6%) from an age group of 18–30 years followed by 31–40 years which were 34 (22.6%). In terms of education level, nearly two-thirds of the respondents 90 (60%) had higher secondary education. Over two-fifth of the sample 60 (40%) were belonging to lower-middle class.

More than half of the respondents 98 (65.3%) were aware of online pharmacy, but had poor knowledge about it. Majority of them 83 (55%) came to know about online pharmacy through internet. In terms of usage of internet, nearly two-thirds of the respondents 83% had access to use internet, out of which only 8% were online shopping users.

In terms of buying medicines, 60 (40%) respondents preferred in person medicine purchase, while only few of them 18 (12%) preferred online mode while rest of them had no preference. About one-fourth (20%) of the respondents were using medication for their chronic diseases. In terms of frequency of purchasing, out of 18 (12%) online consumers, 6 (33%) buy online medicines yearly, while 5 (27.7%) buy monthly, and 2 (11%) buy weekly while rest of them had no preferences but no one use online pharmacy on regular basis. In terms of cost, only 5% found it more expensive while rest of them found it cheaper than traditional offline pharmacies. In terms of condition of drug received, 53% found the acceptable quality of drug they received while 47% found it good. Majority (90%) of them received ordered medicine. Majority (55%) of them received medicines on time and 35% with slight delay while 10% received medicines late. Only 10% were likely to purchase medications online again in the future. According to majority of consumers, 95% were satisfied with online pharmacy services. None of them knew about rules and regulation of online pharmacy.

According to majority (40%) of respondents, reason of not using online pharmacy was trust issues as they had more trust

on traditional offline pharmacies, 20% had moral issues while 33% not willing to use it and rest 7% did not have access to it.

Out of 50 pharmacists, all were male and majority of them 30 (60%) were between the age of 41 and 50 years and all were graduated. Majority 40 (80%) were belonging to upper-middle class. All pharmacists were aware about online pharmacy.

In the current study, only 21 (42%) pharmacists were providing online services while rest 29 (58%) of them were offline pharmacists, out of which only 12% were interested in collaboration with online pharmacies. Majority 45 (90%) were against the online pharmacy showing negative perception as it was affecting their offline pharmacy business leading to negative impact on their livelihood. According to majority 36 (72%) of pharmacists, most affected group due to rise of online pharmacy were offline pharmacists. According to majority (56%) of offline pharmacists, reason of non-collaboration with online pharmacies was economic issues, while rest of them felt that there will be no future scope in online business.

## DISCUSSION

The present study was conducted to evaluate awareness and perception of online pharmacy amongst the general population and the pharmacists in Indore city.

In the current study, it was found that, out of 150 general population, more than half of the respondents 58.6% were male, similarly in a study conducted by Alfahad *et al.* found that, out of 346 respondents, 52.0% were male.<sup>[4]</sup> However, in a study conducted by Fittler A *et al.* took a total of 1366 patients rather general population, out of which 51.09% were female and 48.91% were male respondents which was nearly equal.<sup>[5]</sup>

In the present study, the majority 48.6% of general population was from an age group of 18–30 years followed by 31–40 years which were 22.6% while in a study conducted Alfahad *et al.*, majority 51.4% of consumers were younger population then current study as they were from an age group of 16–25 years followed by 26–35 years (18.9%).

In the current study, nearly two-thirds of the respondents 60% had higher secondary education while in a study conducted by Alfahad *et al.*, majority of the respondents 65.0% were reported university educated with very few (2.9%) indicating that they had up to intermediate level of education.

In the present study, over two-fifth of the sample 40% were belonging to lower-middle class which was similar to a study conducted by Alfahad *et al.* that majority 41.7% of them had the estimated family monthly income of less than Saudi Riyal 5000.

This study assessed that 65.30% of respondents were aware about online pharmacy and only 12% of them purchased medicine through it while in a study conducted by Alfahad *et al.*, majority of the respondents did not hear about online pharmacy (82.6%) and very few of them purchased medicinal product through online pharmacy (1.4%).

The current study depicts that nearly two-thirds of the respondents 83% had access to use internet, out of which only 8% were online shopping users while in a study conducted by Alfahad *et al.*, the majority (97.6%) of respondent were frequent user of internet, out of which 65.1% had purchase something through online shopping.

Result of the current study signifies that only 12% of respondents purchased medicines through online pharmacy while in a study conducted by Alfahad *et al.* found that very few respondents purchased medicines through online pharmacy (1.4%).<sup>[4]</sup>

In terms of frequency of purchasing, out of 18 (12%) online consumers, 6 (33%) buy online medicines yearly, while 5 (27.7%) buy monthly, and 2 (11%) buy weekly while in a study conducted by Eysenbach *et al.* found that 44 (4.17%) used the internet for the purchase of medication at least once.

This study assessed that about one-fourth (20%) of the respondents were using medication for their chronic diseases conversely study by Eysenbach *et al.* found that nearly half (43.22%) of the respondents reported to have chronic diseases and a majority of them used at least one medication regularly.<sup>[5]</sup>

In the present study out of 50 pharmacists, all were male and majority of them 30 (60%) were between the age of 41 and 50 years and all were graduated conversely study by Meher *et al.* found that out of 50 pharmacists, majority of the participants 86% were male whereas only 14% were female. Moreover, only 34% were having a qualified pharmacy degree (D. Pharm, B. Pharm, or M. Pharm); whereas, majority of them, 66% were non-pharmacy degree holders. In the current study, only 42% of pharmacists were providing online services while rest of them (58%) were traditional offline pharmacists conversely in Meher *et al.*'s study included all the retail pharmacists.<sup>[6]</sup>

## CONCLUSION

Study concluded that a clear majority of the respondents were aware about the online pharmacy but only very small proportion had used it. On the contrary, current study population was purchasing medicines from traditional offline pharmacies as they had more trust on them than online pharmacies. However, few of study subjects who had utilized it, majority of them found it cheaper, convenient,

and on-time home delivery of ordered medicines on correct address were some of the major advantages in comparison to offline traditional pharmacies. Hence, it was showing positive perception only among users. All the pharmacists were aware about online pharmacy and almost all of them were against the idea of online purchase of the drugs due to decrease of profit margin. Hence, at this point of time, based on this current study, we conclude that online pharmacy was relatively new for respondents, so their perceptions were not clear about online pharmacy and they still believe on traditional offline pharmacies. The choice of an online pharmacy by the general population and pharmacists was mainly influenced by convenience.

### Recommendations

1. Mass media, print media, Twitter, and Facebook should be properly utilized under Information Education and Communication (IEC) activities regarding online pharmacy under Digital India Program to increase awareness among general population.
2. The future of online pharmacy will mainly depend on the government regulations and robust supply chain infrastructure. The government should promote awareness among general population about risks associated with buying drugs on the internet to look for the certification logo before deciding to purchase from an online pharmacy.

### Limitations

1. This study was community-based, observational study included general population and pharmacists. Physician and patients were not part of the study so author recommends in future some interventional study that should include all participants of e-pharmacy model (physician, patients, and licensed pharmacies) which was not possible in the current study due to time constraints.
2. This study was entirely based on urban population so author recommends to include rural population in further studies as online pharmacy also enables access to rural areas where there is limited presence of retail pharmacy.
3. Legal and illegal aspects of online pharmacy were not part of study hence not covered in the current study

but author recommends further study as fake online pharmacies/websites are springing up.

4. The sample size of the current study was small. Hence, the results of this study cannot be generalized beyond Indore city. There is currently a deficit of information regarding the use of online pharmacies by Indore population. This current sample is just one attempt to understand the general population's awareness and their perception toward the use of online pharmacy in Indore. Similar studies must be conducted in other regions to explore the general population's behavior in a larger population.

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### CONFLICTS OF INTEREST

There are no conflicts of interest.

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