

E-Pharmacy Utilization on the Spectrum of Digital Pharmaceutical Practices, Patterns and Challenges in Bangladesh

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Conflict of Interest: None

Received: 21-04-2019

Accepted: 07-05-2019

www.banglajol.info/index.php/JSSMC

Abstract

Background: E-Pharmacy utilization is a new era of online pharmaceutical practice with its own characteristic patterns, opportunities and challenges.

Objective: The objective of this study was to explore the extent and spectrum of online pharmaceutical practices along with the unique patterns and challenges in Bangladesh.

Materials and Methods: This cross-sectional study was conducted in the Department of Pharmacology at Colonel Malek Medical College, Manikganj, Bangladesh from January to March, 2019 for a period of three months. Data was collected based on certain criteria and on the range of medicines sold, prescription requirements, license number or permission, medical device and other healthcare products.

Results: This study was found 23 online shops fitting the inclusion criteria. Regarding the products, online shops were selling over-the-counter medicine (43.48%), prescription medicine (30.43%), herbal products (52.17%), medical device (69.57%), healthcare products (69.57%) and other general products (39.13%). Regarding medicine, 7(30.43%) online pharmacies were selling prescription medicine and out of these 7 pharmacies, majority of them (85.71%) had option to upload prescriptions. Only 2(8.70%) of the online shops were using both Bengali and English as operating language and rest of them were using only English.

Conclusion: In conclusion, the spectrum of E-pharmacy practice needs to be monitored on a regular basis due to its direct impact on public health.

Key Words:

E-pharmacy; Online Pharmacy; Online Medicine; Online Shop

[J Shaheed Suhrawardy Med Coll 2019; 11(1): 43-47]

DOI: <https://doi.org/10.3329/jssmc.v11i1.43178>

Introduction

The E-pharmacy or online pharmacy is an internet-based vendor that sells medicines over the internet and delivers them through mail at consumers doorstep.¹⁻³ The ability of consumers to obtain prescription medications via the internet has grown exponentially over the past decade.⁴

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Federal Bureau of Investigation (FBI) estimates that there are more than 80,000 “portal” web sites that allow individuals to place medication orders.⁵

The internet has made it possible to compare prices and purchase products without ever leaving home. Customer centric and patient centric services offered by online pharmacies include cost effectiveness, easy access, lower transaction rates, product costs and doorstep delivery within a short time. Research also indicates that there are challenges in online pharmaceutical practices such as websites which deliver drugs that may not be safe to use.^{1,6} The people who obtain these medicines may suffer drug interactions and adverse effects.¹

Online pharmacies create a complex web of relationships among consumers, doctors, regulatory authorities and pharmacies.⁷ Hence, drug regulatory authorities all over the world are publishing guidelines for online pharmacies. In this context, the Directorate General of Drug Administration (DGDA) under the Ministry of Health &

Family Welfare (MOHFW), Government of the People's Republic of Bangladesh has also published Standard Operating Procedure (SOP) for online pharmacies.⁸

Online pharmacy services are currently in use among Bangladeshi consumers. A few organisations offer online platforms for customers to purchase medicines in Bangladesh. However, most of the population do not avail these online services. Most people are used to purchase medicine from local pharmacies. The objective of this study was to explore the extent and spectrum of online pharmaceutical practices along with the unique patterns and challenges in Bangladesh.

Materials and Methods

This descriptive cross-sectional study was conducted in the Department of Pharmacology at Colonel Malek Medical College, Manikganj, Bangladesh during the period of January to March, 2019. Online portals were searched through google and yahoo. The study was included all the online shops selling medicine using trade names of Bangladeshi Pharmaceuticals Company, price showing in Bangladeshi Taka, Bangladeshi contact number and selling medicine, herbal products, medical device and healthcare products. The study was excluded the online portal of medicine index, doctor and hospital directories, organic pharmacy, online unani medical store and those selling only healthcare products like skin care, hair care etc. This survey was explored the extent and spectrum of online pharmacies in Bangladesh by collecting data on the range of medicines sold, prescription requirements, license number or permission, medical device and other healthcare products. All the required data were collected and analysed

by using Microsoft Office Excel Home and Student version 2016 which was subsequently archived for recommendations and future reference.

Results

During the study period, this study found that there were 23 online shops fitting the inclusion criteria (Table-1).

Online shops were selling over-the-counter medicine (43.48%), prescription medicine (30.43%), herbal products (52.17%), medical device (69.57%), healthcare products (69.57%) and other general products (39.13%). Regarding medicine, 7 online pharmacies (30.43%) were selling prescription medicine and majority of them (85.71%) had option to upload prescriptions. Only 1 online pharmacy (4.35%) was selling solely antidiabetic drugs and related medical devices. None of the online pharmacies displayed their license or permission documents on their website. Regarding herbal products online shops were selling both local and foreign products. Most common healthcare products were dietary supplement, sexual performance enhancer, skin and hair care products, condom, fracture aids, antiseptics, bandage, pain relief balm etc. English was the operating language of most of the online shops. Only 2 of the online shops (8.70%) were using both English and Bengali as operating language. Most of the shops had a help line number, email and address. The most frequent website extension were (.com) and (.com.bd). During the study period, 2 online shops (8.70%) had Facebook page only and their website page were under maintenance (Table-2). As the survey was conducted in a specific period of time, the study data and insights are representative of that particular time frame.

Table 1

List of online shop surveyed during the study period (all are online shop so there may be continuous change, upgradation and disappearance of website information)

List of surveyed online shop in Bangladesh (website name arranged alphabetically)

• https://ajkerdeal.com/	• https://www.kikinben.com/
• https://www.bagdoom.com/	• https://www.lazzpharma.com/
• https://www.beautyshopbd.com/	• https://medicine.co.bd/
• http://www.biomed.com.bd/	• http://www.medimart24.com/
• https://www.daraz.com.bd/	• http://www.ousud.com/
• http://www.dadarhut.com/	• https://www.othoba.com/
• http://dhakapharma.com/	• https://www.pharmacy.com.bd/
• https://www.diacare.shop/	• https://priyoshop.com/
• https://diabetesstore.com.bd/	• https://pharmaquik.com/
• http://epharma.com.bd/	• https://shopking.com.bd/
• http://epharmacy.com.bd/	• https://yesbd.com/
• https://www.healthshopbd.com/	

Table-II

<i>Current scenario of surveyed online shop in Bangladesh (all are online shop so there may be continuous change, upgradation and disappearance of website information)</i>	
Major findings	n (%)
Number of online pharmacies selling over-the-counter medicine	10 (43.48%)
Number of online pharmacies selling prescription medicine	7 (30.43%)
Number of online pharmacies had option to upload prescription (out of 7 online pharmacies who are selling prescription medicine)	6 (85.71%)
Number of online pharmacies were under maintenance (only Facebook page found but full website view were not available)	2 (8.70%)
Number of online pharmacies selling herbal products	12 (52.17%)
Number of online pharmacies selling medical device	16 (69.57%)
Number of online pharmacies selling healthcare products	16 (69.57%)
Besides medicine, herbal products, medical device and healthcare products, number of online shop selling general products like garments, electronics, home appliance, groceries etc.	9 (39.13%)
Number of online pharmacies selling solely antidiabetic drugs and related medical device	1 (4.35%)
Number of online shop had option to select both English and Bengali as an operating language of the website	2 (8.70%)
Number on online pharmacies displayed license number or permission documents on their website	0 (0%)

Discussion

E-pharmacy plays a vital role in the healthcare delivery system of the 21st century. Research conducted locally and globally indicates the importance of analysing the various region-specific factors which affect the purchase, distribution and safe dispensing of medicines, medical device and healthcare products. The ubiquitous nature of availing online pharmacy services in the Czech Republic was revealed in the research conducted by Svorc⁹ and associates which indicates that a substantial segment of the population (60.5%) prefers online purchase of medicines. The significance and impact of online pharmacy in Bangladesh is further substantiated in the research conducted by Jeko¹⁰ which indicates that 53% of the population surveyed prefers to purchase online medicines regularly. In contrast, only 23.1% of the population surveyed in a Saudi Arabian study were aware of online pharmacies.² This indicates that there are region-specific and demographic factors which affect the extent and effectiveness of E-pharmacy.

This study more specifically indicates the extent and spectrum of current online pharmacy utilization in Bangladesh. There were 23 online shops in this study which fitted our specific criteria for inclusion. The range of products found in these online shops are over-the-counter medicines, prescription medicines, medical devices, herbal products and healthcare products.

A significant finding in this study is that, among the 23 online shops, there are only 7 online pharmacies (30.43%) which are selling prescription medicine and most of them have the option to upload prescriptions. The rational and safe use of both prescription and over-the-counter medicine has been emphasized worldwide. Hence, there are regulatory systems such as the US FDA, Verified Internet Pharmacy Practice Sites (VIPPS). The Directorate General of Drug Administration (DGDA) under the Ministry of Health & Family Welfare, Government of the People's Republic of Bangladesh has also published Standard Operating Procedure (SOP) for online pharmacies.⁸ This present study also underscores the need for research into the challenges of online pharmacies in providing safe and effective dispensing of medical and healthcare products. In this study, none of the online pharmacies displayed their license or permission documents on their website. A Saudi Arabian study also corroborates the fact that a vast majority of the public surveyed were not able to differentiate between legal and illegal pharmacy services.² Hence, this study suggests that, enhanced inter-professional dialogue among physicians, pharmacists, medical regulatory authorities, public and all other online pharmacy stakeholders may nurture an environment of safe and effective E-pharmacy management system.

The most common healthcare products found in this study are weight-loss dietary supplements, sexual performance enhancer, skin and hair care products, antiseptics,

condoms, bandages etc. A similar pattern was observed in the Saudi Arabian study where non-prescription medicines and cosmetics were the largest categories that respondents preferred to buy online.²

This present study also analyses an underexplored area in E-pharmacy research which is language. The language of online pharmacies is significant more so in Asian countries where English is not the primary language of the public. This study has been revealed that English is the operating language used in most online shops.

E-pharmacy is an important phenomenon and its users are increasing globally. To enhance the benefits and minimize the risks of online pharmacies, Orizio et al.¹¹ have been emphasized 2-level approach like international level and individual level.

The ability of consumers to obtain medications via the Internet has grown in an exponential manner. It would change the structure of pharmacy services and many policy issues regarding regulation. An authentic online pharmacy site requires a valid prescription from a registered physician prior to dispensing, contains appropriate contact information for the site and provides access to a registered pharmacist. Some online pharmacies are selling counterfeit medicine without a valid prescription. Therefore, emphasis and focus on a valid prescription is a mandatory requirement for sale except for over-the-counter medicine. All the medicines must be verified by the registered pharmacist before delivery. This study has been outlined the challenges of online pharmacy in Bangladesh (Table-III).

Table-III

Challenges of online pharmacies in Bangladesh.

Regulatory challenges

- Online pharmacies must follow the guidelines of drug regulatory authority
- Online pharmacies must stop selling prescription medicine without a valid prescription that must be verified by a registered pharmacist
- Online pharmacies should display the license or permission documents on their website
- Every online medicine order should be verified by a registered pharmacist
- Online pharmacies should stop selling foreign medicines collected from unauthorized source
- Online pharmacies should stop selling counterfeit medicine and poor-quality medical device
- Foreign medicine, herbal products, medical device and dietary supplements should be collected from authentic source and need permission from regulatory authority prior to sell

Challenges associated with quality and reliability

- Online pharmacies need to build cold chain system for temperature sensitive medicine
- Online pharmacies need to build people trust on the authenticity of medicines
- Any websites may disappear without trace so all online pharmacies should display their detail postal address along with contact person, phone number and Email

Technological challenges: patient confidentiality, data protection and online payment

- All websites should have appropriate technology to ensure security about consumers information
- All online pharmacies should follow and maintain SOP regarding online payments and cash on delivery
- All records about medicine and prescription should be archived properly

Challenges associated with language and communication practices

- All pharmacy website should have option to see all the information in Bengali and English

Conclusion

As the number of online pharmacies are growing constantly, the physicians should familiarize themselves with legitimate online pharmacies. A mutual awareness is required among physicians, pharmacists, drug regulatory authority, consumers and owners of online pharmacies. The spectrum of widely varying practices in E-pharmacy has a direct impact on the health and wellbeing of the population. Hence, this study recognizes the need for further research in this field.

Acknowledgement:

Authors are grateful to Director General of Drug Administration, Bangladesh who developed SOP for online pharmacy and proprietors of online pharmacies who have taken such a great initiative in Bangladesh.

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