IMPACT OF E-PHARMACIES ON THE POPULATION

Piyush Lulu[1], Anushree Kudatarkar[2], Dr. B Lakshmi[3], Saikishore V[4]

[1]*MBA Semester IV, Department of Pharmaceutical Management, National Institute of Pharmaceutical Education and Research- Hyderabad*

[2]*MBA Semester IV, Department of Pharmaceutical Management, National Institute of Pharmaceutical Education and Research- Hyderabad*

[3]*Assistant Professor, Department of Pharmaceutical Management, National Institute of Pharmaceutical Education and Research- Hyderabad*

[4]*Assistant Professor, Department of Pharmaceutical Management, National Institute of Pharmaceutical Education and Research- Hyderabad*

Abstract

Pharmaceutical industry is one of the fastest-growing industries of the world markets with est. value of 486.62 billion growing at an annual CAGR of 11.34%. Like every other industry, this industry has also advanced owing to the technological revolution of the 21st century. Along with research and production, distribution and retailing have also become technology driven. E-pharmacy is a technological advancement that facilitates the online prescription generation and delivery of various drugs. The epharmacies sell a wide range of drugs including prescription drugs. Considering the nature of the internet and the way in which various epharmacy companies operate, there are various pros and cons of online pharmacies. The emergence of epharmacies has many impacts on pharma marketing, supply chains, and also ultimately on the buying patterns of the customers. Most of the epharmacies comply with the selling practices of the traditional pharmacies in relation to that prescription verification and of potentially harmful and addictive drugs such as opioids. Customers who use the epharmacies which include physicians and patients also face some constraints while using them which impact the purchasing patterns and thus the overall business of these platforms. This article has the aim to study the impact of epharmacies on society which includes patterns of selling by these websites and apps, things that customers consider while purchasing drugs online, and the purchasing patterns and overall impact of the introduction of epharmacies in the distribution chains of pharma industries.

Keywords: - *E-pharmacy, E-commerce, Pharma industry, Distribution of drugs Medicine purchasing patterns.*

Introduction: -

Our daily life, modes of communication, and purchasing habits have been changed since the surge of the internet. The use of the internet in healthcare is intensifying along with the expansion of access to it. Searches related to the healthcare also have a significant share in it. Since the start of the 21st century, many epharmacies have been established throughout the world (Chaurasia et al., 2017). Due to the internet, patients and consumers can buy many medications from online pharmacies at a comparatively lower price. (Long et al., 2022b).

The healthcare sector actively uses digital technologies and internet resources, not just in the medical field but also in the pharmaceutical business (Wang et al., 2020). Specialists all across the world make extensive use of telepharmacy, hi-tech training of personnel, automated storage and warehousing arrangements along with pharma consultations as and when required (Singh et al., 2020a). The newest trend among Indian patients and consumers is to purchase prescriptions and medications online (VP & BK, 2016).

Over the past 10 to 15 years, online technology has been used to buy pharmaceuticals throughout the world. During the pandemic of the novel coronavirus illness, remote sales allowed for a reduction in the number of personal interactions, the stress on specialists, and the likelihood of ethical issues (Sawad & Andrews, 2021). The scarcity and price disparity were the primary drivers behind online drug purchases. The most popular items were pharmaceuticals, cosmetics, and dietary supplements (Soboleva et al., 2022).

Online pharmacy along with a number of benefits also has certain safety constraints in the purchasing of medications as opposed to the conventional chain (Fittler et al., 2018) which are discussed subsequently in the article. Online pharmacies offer quick access and a simple means of making drug purchases. Although the number of online pharmacies is growing, measuring the acceptance of online pharmacies by the number of websites may not be useful (Özsoy et al., 2012). According to NABP, this is the case since a large number of online pharmacies open and close each day, the majority of which are fraudulent (Sood et al., 2008)

Types Of E-Pharmacy: -

1. Similar to conventional medical shops it involves collecting the prescriptions, dispensing medications, and operating shops and online ordered pharmacies separately from a website and dispensing medicines after acquiring a prescription (Singh et al., 2020a).
2. Chain of physical storefronts. This drug is given after doing the patient examination online and without a physical consultation. This online medication largely relies on a questionnaire process that a doctor evaluates (Samant et al., n.d.).
3. Those who give out medicine without a prescription. A private body accredits the first kind, state-issued licenses and watchdog organizations operate. The other two types cause people to worry about their safety (Mazer et al., 2012)

How does E-Pharmacy work?

Uploading a scanned copy of the prescription to a web-based or mobile application for a medication request.

Every order should be evaluated and approved by a team of licensed pharmacists.

The registered pharmacist sends the pharmacy store with valid prescriptions so that the medication can be dispensed.

The delivery agent collects your prescription personally and gets it verified at the main store.

The delivery agent will collect the package from the store and delivers it at your house. Payment for purchase can be made in form of cash on delivery or online using UPI, net banking or credit/debit cards via the website or the app.

The sale of medicines is governed by various laws and regulations (v. Chordiya & M. Garge, 2020). The sale will be handled under the overlooking by a pharmacist based on a valid prescription by a registered medical practitioner(Qato et al., 2017). The IT Act of 2000 governs all consumer and pharmacy store activity on web-based or mobile-based systems (Jain et al., 2017).

Regulation of E-Pharmacies in India

The most recent trend among Indian patients and consumers is to purchase prescriptions and medications online. As the practice of purchasing medications online grows, so does the number of online pharmacies but there aren't enough regulatory checks and balances in place to effectively regulate e-pharmacies (Crawford, 2003c).

The central government and the state governments in India share regulatory authority (Kulshrestha, 2018). State governments are mostly in charge of producing, selling, and distributing medications, while the federal government issues licenses for their importation (VP & BK, 2016).

The Central Narcotics Control Organization (CDCO), and Drugs Control Administration are the two principal organizations in the Government for the regulation of and control over drugs (Singh et al., 2020c). However, separate laws exist for the state and the doctor is also bound by Hon. Supreme Court of India to not prescribe on telephone except in an emergency.

Impact of E-Pharmacies on Population: -

Why people prefer E-pharmacies: -

1. Convenience: - With a prescription, purchasing medications and prescriptions online are simple. Easy and quick online prescription purchases and returns are advantageous for those who live far away, are elderly, have impairments, or are stressed by their everyday life and shipping costs are also considerably lower (Chordiya & Garge, n.d.).

2. Lower Price: - A buyer can save money by purchasing medications online. Online purchases of prescription medications have been demonstrated in some studies to result in price reductions of up to one-third (Tawade et al., n.d.).

3. Private and Confidential: - For those who are hesitant to communicate with their doctors or pharmacists directly, this is extremely helpful (Holmes et al., 2002). Additionally, it helps those who experience extreme shyness or embarrassment due to illnesses like erectile dysfunction, acne, STDs, and hair loss. They can place orders without feeling judged or embarrassed (Alwon et al., 2015).

4. Drug Approval: - Most of the lawful retail shop owners have a medicine approval procedure. After the customer fills out a questionnaire, they either demand a prescription from a doctor or at the very least supply the medication as a prescription medication (Tawade et al., n.d.). Before the medication is shipped, a doctor will examine this questionnaire. Some online pharmacies include helpful details on medicines for ailments, including links to other medical educational centres like institutions of higher learning, governmental organizations, and health associations (Mills, 2016)

Constraints of potential and existing E-pharmacy customers: -

1. Prescription manipulation: - The fact that e-pharmacies give medications based on scanned prescriptions are one of the major concerns. These are simple to manipulate and may cause medication overuse (Kuzma, 2011). The main problems with e-pharmacies are unregulated dispensing, access to fake medications, limitations of pharmacist information, and the simplicity of obtaining illegal substances (Chordiya & Garge, n.d.)

2. Avoid the patient-health professional relationship: - When dangerous medications are sold, taking them without a prescription or under medical supervision can have negative effects (Grindrod et al., 2014). There is no assurance regarding the medicine's quality or purity. Drug resistance, interactions, self-medication, and drug misuse are all possible. Inadequate face-to-face interactions with medical providers and inadequate counseling(A Nationwide Web-Based Survey of a Sample of Italian Community Pharmacists' Perceptions and Opinions about Online Sales of Medicines and Falsified Drugs. Pharmacy Practice, 17(4), 1593 | 10.18549/Pharmpract.2019.4.1593, n.d.)

3. Lack of Regulation: - Regarding E-pharmacies, there are no specific laws or norms. Illicit e-pharmacies may sell subpar medications, and it can be challenging to distinguish between reputable and illegal e-pharmacy websites. Due to the online availability of both personal and financial information, customer privacy is endangered which is a serious issue (S. Dutta, 2017)

4. Exposure to minors and mentally unstable people: - As the internet can easily be accessed by minors and mentally unstable people who are able to order drugs online and use them in absence of the knowledge of a responsible adult. This can result in adverse effects and drug abuse (Singh et al., 2020a). Similar is the case with mentally unstable people.

Risks associated with the use of online pharmacies: -

1. Patients can currently purchase prescription medications over the Internet in a number of ways, according to the WHO (Norman & Skinner, 2006). If their physician calls to request a prescription or sends a script as an attachment, certain businesses will agree to the request for drug delivery directly to the patient (Prakash et al., 2008). As an alternative, patients can make a drug request by contacting their doctor online as well as having the doctor send the prescription to the online pharmacy (Wiedmann et al., 2010). Thirdly, customers can place straight online drug orders without visiting a doctor or pharmacist. Given that it does not necessitate a trip to the pharmacy, the latter option has the highest potential risk for the consumer (Armstrong et al., 1999).

2. There is absolutely no quality assurance for the medicine if a patient purchases it from an unlawful commercial website (DeKieffer, 2006). This indicates that medications could be fake, subpar, hazardous, or even unapproved new medications that too without a prescription (S. Dutta, 2017). Additionally, the content and advertising on these websites are deceptive. Products that are marketed as self-care items might have negative effects if used improperly (Henney et al., 1999).

3. Although ordering procedures can potentially be completed online, the problem of physical delivery still exists. One issue is that delivery does not occur instantly (Jaswal & Kandal, 2013); in order to ensure on-time delivery, internet pharmacies must also invest in delivery locations the second issue is the security of delivery, in which There is no assurance that the recipient will get packages sent to homes through mail or express delivery is present and without the ability to precisely regulate what happens to the gift when it is delivered (Crawford, 2003a). Pharmaceutical items may not reach unharmed through regular mail delivery, and in some nations, particularly hot or cold temperatures may affect the medication (Jain et al., 2017).

E-pharmacy customer purchasing patterns-

The Indian healthcare industry is expanding quickly, and there are currently active online and offline pharmacies. The advantages of online pharmacies are privacy, availability of a wide selection, lower pricing, home delivery, and convenience in general (Kuzma, 2011).

There is no denying that e-pharmacy increases consumer convenience & access to medications (Nichols-English et al., n.d.-a). Currently, MChemist, Net meds,1mg, Medlife, Myra and access to pharmaceuticals are the top online pharmacies. (Gupta, 2020).

Since people may order medications and other pharmaceutical from the convenience of their homes, e-pharmacies are growing in popularity nowadays. The shopping habits and preferences of consumers can vary by geography (D. Dutta & Bhattacharjee, 2021).

The global pharmacy market has been significantly disrupted by the sale of medications online. Since the initial consumer internet purchases in the late 1990s, epharmacy has gained popularity(Miller et al., 2021).

For some people, the biggest obstacle to buying drugs online is the perceived risk associated with the quality of medical advice or medications. A different group that places the highest emphasis on convenience (time and location) and is accustomed to online shopping for a variety of goods may be hesitant to purchase medications online (Wiedmann et al., 2010).

Challenges in online pharmacy practice-

Many online pharmacies automatically refuse a prescription drug order if the potential buyer's questionnaire shows a plainly improper medical purpose in order to ensure patient safety and reduce liability (e.g., Viagra [sildenafil] for the treatment of a dermatological problem) (Crawford, 2003b)**.**

Many systemic flaws are cited by internet pharmacy detractors. Although this is likely a temporary setback, third-party payers have been sluggish to get into agreements with many Internet pharmacies (Kuzma, 2011). Furthermore, pharmacists are not always immediately accessible online to respond to patients' crucial, urgent queries. This is a major criticism levelled by pharmacists against this new way of doing pharmacy (Gallagher & Colaizzi, 2000a, 2000b)**.**

Online pharmacies that are not authentic, have not been validated, and may not adhere to local, national, or international rules and laws (Desai et al., 2015). Legitimate online pharmacies must abide by the rules and legislation of both the country where their website is based and the country they are shipping to (Fittler et al., 2013).

Internet pharmacies have aided customers to buy a variety of pharmaceuticals from online pharmacies of various brands at a price that is generally lower than that of conventional retail pharmacies (Gallagher & Colaizzi, 2000a, 2000b). However, some illegal websites operating out of various nations have been passing themselves off as legitimate pharmacies and profiting from the internet (Long et al., 2022).

Current scenario of E-pharmacies in the market and society: -

In the new economy, the internet expands into a large marketplace for goods that is open to everyone and can be accessed from anywhere. The nature of the mutually created relationship between the customer and seller, which distinguishes the internet from traditional media, is the key difference (Mills, 2016).

Due to the fact that the buying process is much more in the hands of the online client, the interaction between the buyer and the online store is essential for e-commerce success (v. Chordiya & M. Garge, 2020). Due to these changes in the notion of what a client is worth when conducting business through e-shops, it is necessary to innovate the market-working process in order to boost client loyalty and fortify long-lasting relationships with them. (Patak et al., 2014).

The e-pharmacy concept also provides information about disorders. With the aid of the internet, information about precautions, bad effects, herbal remedies, and interactions between drugs and their treatments can be spread easily

exactly like in the case of COVID-19, whose information has been disseminated globally using the internet (Singh et al., 2020a).

Patients now have more access to information online that they can utilize to either create opinions about their health or lessen their anxiety (Barigozzi & Levaggi, 2008).

According to surveys conducted in the US and Europe, 64% and 71% of online users, respectively, have used search engines to look up health-related information at least once in the preceding year (Andreassen et al., 2007)(Hesse et al., n.d.).

Pharmaceutical product marketing methods may be used to increase demand for medications, thereby generating consumers or patients in a world where even the notion of health has evolved from sickness not being present to well-being and wellness (Nichols-English et al., n.d.-b).

The sale of drugs online poses a very serious risk that could become even worse. Everybody with Internet access is able to purchase drugs online, and online pharmacies sell many different kinds of medications, including prescription medications (Levaggi et al., 2009).

Despite being a natural product of the thriving e-economy, online drug sales present special ethical, legal, and quality issues (v. Chordiya & M. Garge, 2020). The anarchic nature of the Internet is the main contributor to these issues which makes the issues significant from the consumer, medical professional, and regulatory viewpoints (Chaturvedi et al., n.d.).

The global e-pharmacy industry was estimated to be worth USD 68.3 billion in 2018 and is expected to grow with CAGR of 16.1% starting in 2021to 2030. Internet usage is growing daily, which has an impact on e-commerce expansion, population aging quickly, and enhanced healthcare infrastructure (Singh et al., 2020b).

Additionally, e-commerce and other digital technologies are projected to be increasingly adopted in the healthcare sector, which would stimulate growth (Jaswal & Kandal, 2013).

In comparison to other industrialized economies and the largest developing economies, the Indian online pharmacy sector is still in its infancy (Srivastava & Raina, 2020). Around 250 online pharmacies have popped up throughout the nation in recent years (Dadhich A, 2020).

According to NetMeds, e-pharmacy currently represents between 1.5 and 2% of all pharmaceutical sales, with a 10% growth predicted for the year 2023.

METHODOLOGY

The literature was searched by taking reference to the articles published from 1999 i.e. since the establishment of the first Epharmacy to 2022 to get insights into the current state of them. The keywords used for the selection of the relevant online articles were ‘Epharmacy, Ecommerce, Pharma industry, Distribution of drugs, Medicine purchasing patterns.’ in the research databases at Wiley, Elsevier, ScienceDirect, SPER, and Academia.

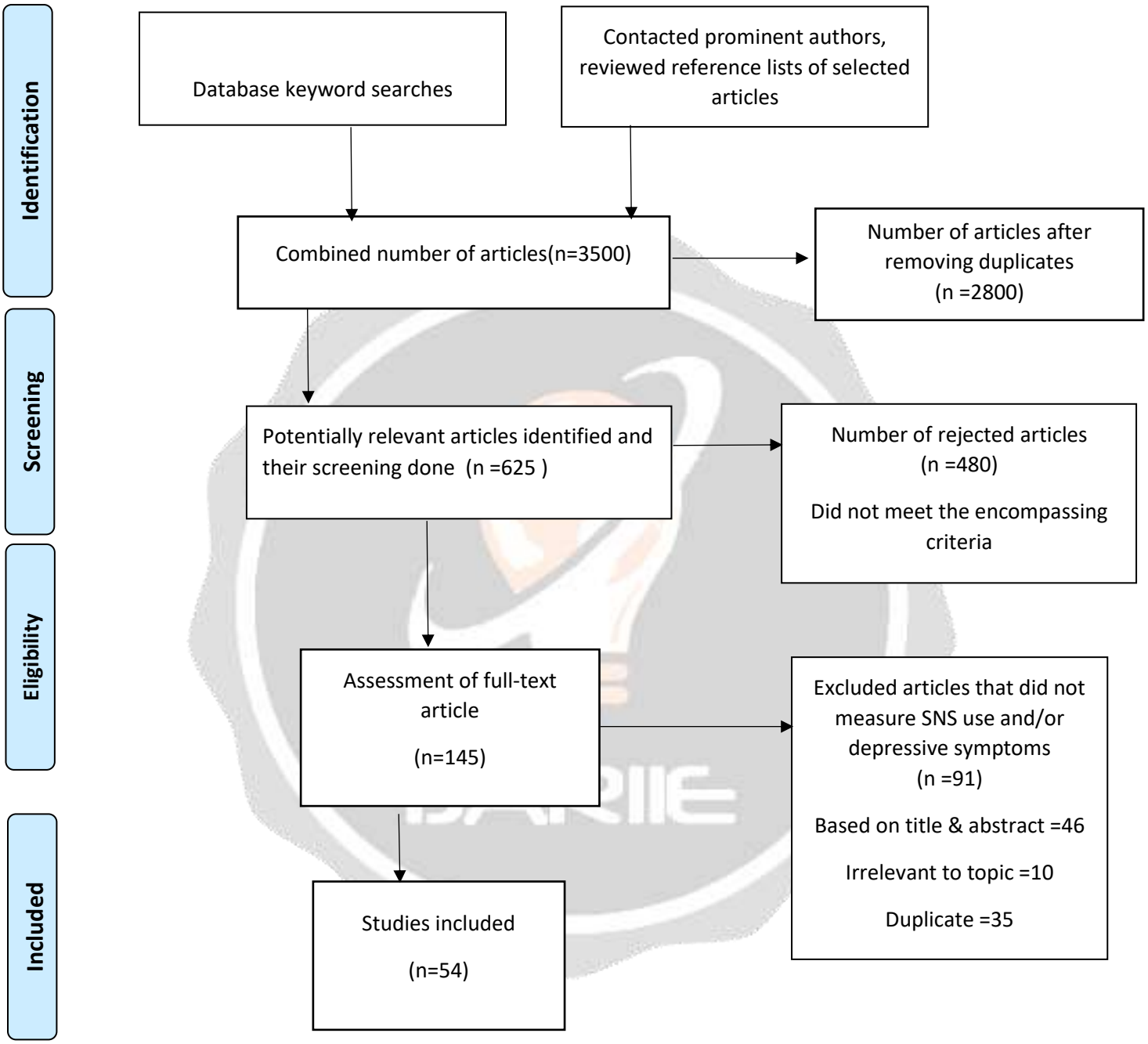
Analysis

The Preferred Reporting Item for Systemic Reviews and Meta Analytics (PRISMA) technique is the one that is employed. The aims, year of publication, amount of citations, and recommendations for additional research were all taken into consideration when we read and summarised each paper that had made it through the selection process.

Inclusion & Exclusion conditions

The be included in the current study, studies have to meet some criteria Studies have included some kind of selection criteria (Academic procrastination, workplace). These criteria limited the number of studies (b) Accordingly excluded the studies in which based on irrelevant information there is no proper Title, Abstract & Review.

PRISMA Flow Chart



Final data set

After the search of the research database, all keywords' searching resulted in finding 4000 research articles. Many of the articles in different databases were found to be similar after searching according to titles. After deducting the duplicates, as many as 2800 articles were finalized. As many as 625 research articles are screened in the process. 480 articles did not meet the inclusion prerequisites and thus were rejected.

Articles accessed for eligibility are 145. Among all, 91 articles were excluded based on title and abstract (46) Irrelevant to the topic (10) Duplicate (35).

The final data set consists of 54 articles.

The oldest included study was published in the year 1999 and the most recent study was conducted in 2022. The Entire process is shown in the figure.

DISCUSSION

Since the inception of the first Epharmacy website in 1999, online pharmacy services have become a great alternative to traditional pharmacy. The epharmacies have garnered a huge customer base over the years. The presence of epharmacies has immensely impacted marketing strategies, buying patterns and overall healthcare services. The current research looked at the types of epharmacies, the style of their work, reasons why the customers prefer the epharmacies and the constraints experienced during their use. Attention was also paid to the risks associated, the probability of misuse and the regulatory activities of the epharmacies. Considering all these factors, an effort was made to analyse the impact which the introduction of the epharmacies had on society. Using online pharmacies people can not only buy but know the details about the drugs, their side effects, details of the manufacturing company, etc. Some reliable online pharmacies have had a really good impact on society by supplying medicines to customers including physicians and patients likewise. Adherence of these epharmacies to the norms of validation of the prescription and not allowing misuse of the sites for the supply of harmful and addictive drugs has been the reason for their long run in the market. However, the lack of regulations in the epharmacy market, and exposure of the internet to minors and some mentally unstable people have been the issues of serious concern. Some of the customer complaints of prescription manipulation or misinterpretation have also come to light. Despite some constraints, the epharmacy industry has a value of around 68 billion which is growing at a CAGR of around 16 %. The convenience of buying of medications, lower prices and the privacy that the patient has while using the epharmacies may be the reasons for this stupendous success of the epharmacies.

CONCLUSION:-

The researchers have referred to various online sources and research articles to study in detail about online pharmacies. In light of the analysis, the following conclusions were drawn: -

The epharmacies through their large number of uses and advantages have impacted the society in a positive way. In spite of some constraints, one cannot deny the acceptance and popularity the online pharmacies have gained among the masses.

Enhanced customer-oriented services and even more strict adherence to the concerning regulations, the epharmacies could bring revolutionary changes in the healthcare sector and provide enhanced health and wellness

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