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A Study on the Post Pandemic Impact on the Pharmaceutical Industry of India

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***Abstract*---**During the preceding five decades, the Indian pharmaceutical industry has made significant progress in both the domestic and international economic sectors. The sector employs about 2.7 million people directly or indirectly and ranks third in terms of volume and 14th in terms of value internationally. The government's drive for the pharma sector can be interpreted as an attempt to wean India off of raw material imports from China, which are significantly utilised in local medication production. COVID-19 has given the Indian pharmaceutical sector the possibility to create APIs and intermediates. As a result of the pandemic, the digital and e-commerce industries are becoming increasingly crucial. The E-Pharma industry has developed tremendously as a result of the pandemic-induced lockdown, as individuals have realised that purchasing medicines online is a safer method to protect them from infection. Recognizing the potential of the online pharma business in the future, major E-commerce companies like as Amazon and Reliance Retail have begun to invest in it. The online pharma sector has a lot of promise in the next years because of the comprehensive value proposition supplied by E-pharma companies, historical experiences, and the migration to digital platforms owing to COVID-19.

***Keywords*---**active pharmaceutical ingredients (API), drugs, key starting materials (KSM), self-medication, vaccine.

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Introduction

E-pharmacy holds the potential to improve accessibility of medicine to even the remotest corners of the country. The first online pharmacy was started in the US in late 1990s (Vignesh et. al., 2021). In India, the e-pharmacy space is still at a nascent stage. The market was estimated at US$0.5b in 2019 with companies such as NetMeds, Pharm Easy, Medilife and 1mg dominating the market (Deepika et. al., 2020). It is projected to reach US$4.5b in 2025 at a CAGR of 44% for the period 2019—2025, representing about 10%-12% of the pharmaceutical sales (Almurisi et. al., 2020). E-pharmacies offer a convenient and an affordable way to purchase medicines. Coupled with tele-consultations, they can provide quick access to quality healthcare for patients in remote areas. The distribution time in remote locations can vary between seven to ten days. E-pharmacies offer strong value proposition to doctors in rural areas and tier-3 cities. During primary interactions with EY, many doctors from rural areas mentioned that they encourage patients to purchase medicines from e-pharmacies as local. The need for social distancing during the pandemic has strengthened the adoption of e-pharmacies globally. Online pharmacies across the world, including India, have reported a significant increase in orders during the lockdown period. Given the access, doctors are able to prescribe a wide range of medicines, which enable them to provide better care. Both the pharma companies and the government benefit by getting access to digital data and increasing reach to the patients (Barshikar, 2020). Some pharma companies are leveraging e-pharmacy platforms with patients as a channel to increase awareness about diseases and their management. It has been a great challenge in the understanding of a prescription by its legibility which in turn may result in falsification of prescriptions or the risk of misinterpretation is more. Being this reason, the adoption of electronic prescriptions is been suggested. E-prescribing may be highly promising for refining patient safety, workflow of pharmacies and communication with the prescribers. There may be few limitations in adoption of a new technology since it may create new complications in the work systems. Beholding the safety of e-prescribing methods such as Human Factors Engineering (HFE) can be adapted. Online pharmacies may endorse in drug abuse, drug misuse, self-medication, and many such problems. Self-medication is a fecund run-through in India, and sale of drugs online may embolden its use. Use of medication deprived of the supervision of the medical practitioners may be unsafe and also hypothetically life-threatening. There is no track on reuse of a prescription in online pharmacies which may indulge in re-order of scheduled drugs and its misuse by the procurer. Present day there are nearly more than 30 official online pharmacy firms in India to name a few mCHEMIST, NetMeds, MedPlusmart, MeraPharmacy, Medidart, BuyDrug, Apollopharmacy, 1MG, Aermed, Practo, Medlife, Pharmeasy, Medikels, Medehome, Lifcare, Myra, Bharat Pharmacy, HiGlance Online Pharmacy, E MedStore, MedNear, Medidoor, E-Dorob online Pharmacy and many more (Rewari et. al., 2020).

E-pharmacy regulation in India

Regulatory powers in India have been distributed between the central and the state governments (Budhwar, 2021). State governments mainly responsible for the manufacturing sale and distribution of medicines while Central Government provide licensing to import of medicines. Two main organization in Central and State Government for the regulatory control over drugs are Central Drugs Control Organization (CDCO) leaded by the Drugs Controller General India and Drugs Control Administration (DCA) leaded by the State Drugs Controllers (Devi et. al., 2020). States has its own Drugs Control Administration. Except emergency cases, doctor cannot consult through phone said by Supreme Court. As far as India is concerned, there are no dedicated e-health and telemedicine laws in India. So basically, there is no law control over E-pharmacy. We noticed that laws governing the E-pharmacy model as not certain applicability so that key player taking advantage for their business and also found that they are not properly follow the regulation guidelines. There are not clear provisions regarding sale of drugs from internet, it seems very difficult to control, monitor and track sell of drugs through e-pharmacies.

Literature Review

VP Priyanka, BK Ashok (2016) discussed about the increase in internet and phone user of India and also about the emergence of E-pharmacies through the description of models of E-pharmacy and what illegal international trade happens through E-pharmacy. Saraswat S, Jain R K, Awasthi S. (2020) studied various advantages and concerns for people’s health due to controversial online pharmacies in India. Nayerreh Ayati, Sayarsarai Parisa, Nikfar Shekoufeh (2020), in their research paper has discussed about the short- and long-term impacts of the pandemic on the pharmaceutical sector. M Vignesh, G.N.K Ganesh (2020), stated in their study regarding the Pharmacy Professionals situation during this pandemic, how Covid-19 has affected pharmacy professionals and the need to conquer the problem of Covid-19. Singh, H, Majumdar A, Malviya N (2020) studied the basic issues and challenges related to online pharmacy and how can it be beneficial to society and pharma sectors in the pandemic situation. Researcher studied the impact of E-Pharmacy on society in COVID-19, Pharma sector in pandemic situation, impact of COVID -19 on pharma sector. Rewari Bhushan Bharat, Mangadan-Konath Nabeel, Sharma Mukta (2020) has set out a broad understanding of the key determinants of continued and seamless supply in the context of COVID-19. Samah Hamed Almurisi et.al (2020) analysed the Covid-19's impact on the pharmaceutical industry in India. The development of vaccine or specific treatment to treat Covid 19 how long the development is done and how long will it take to distribute among the public around the globe is also explained. Mahesh Ramu Agasa et.al (2020) discussed about E-pharmacies an emerging market in Indian retail pharmacy through a detailed literature survey to conscript the minutiae concerning to e-commerce & marketing, e-prescription, current online pharmacies in India, the role of e-pharmacies in emergencies, the pros and cons of online pharmaceutical retail marketing and their ethical issues. Singh Ravinder et.al (2020) explained the status of E-pharmacies in India from its emergence to expansion. Mittal Shivam, Sharma Dipadra (2021), described how the healthcare and pharma industry of India has grown worldwide and is the 3rd largest pharma industry in the world by volume.

Objectives

The study has the following objectives

- To study the post pandemic impact on the pharmaceutical industry of India
- To study the various schemes made by the government of India to promote the pharmaceutical industry

Research Methodology

The research paper is descriptive in nature as it is based on the existing events, moreover the data is been collected from research papers on the Indian pharma industry in all aspects, journals, websites, annual reports of different ministries, census and so, are the base of the same. The researchers have selected a sample of 126 respondents through convenience sampling technique. Data from the sample are collected through online questionnaire. Secondary sources include studying and analysing of research paper on the Indian pharma industry in all aspects, journals, websites, annual reports of different ministries, census and so, are the base of the same, present on the internet and government portals. The area of the study is carried out in the Kamrup Metro District, with a population of around 1,253,938 as per the 2011 census of India. The presentation as well as analysis of data is done in a systematically manner through tables and bar diagrams.

Data interpretation and analysis

Table 1
Number of internet users based on age

Parameter	No. of Respondents	Percentage (%)
<18	-	-
18-25	112	88.9 %
26-35	10	7.9%
36-45	1	0.8%
>45	3	2.4%

Source: Online Survey

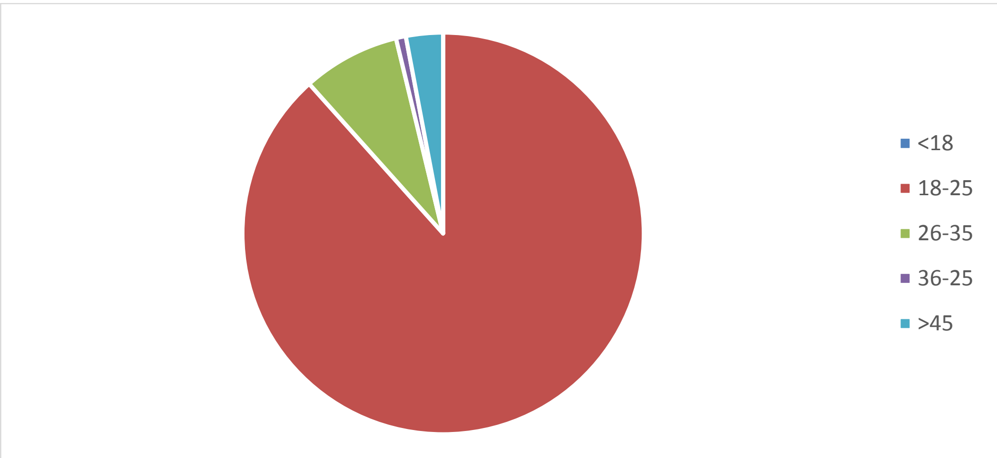

Figure 1. Internet users based on age

Interpretation

From the above table and figure, it is observed that out of 126 respondents, 88.9% internet users were among the age group 18-25, 7.9% internet users among the age group 26-35, 0.8% among the age group 26-45 and 2.4% among the age group 45 and above.

Table 2
Purchase of medicines

Parameter	No. of respondents	Percentage (%)
Community Pharmacy Services	81	64.3%
Online Pharmacy	39	4.7%
Both	6	31%

Source: Online Survey

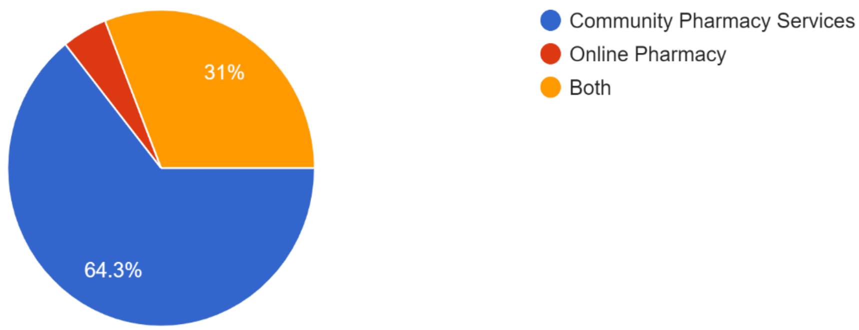

Figure 2. Purchase of medicine

Interpretation

From the above data, it can be seen that Community Pharmacy Services (Chemist Shops) still prevails at large (64.3%) in comparison to online pharmacy solely which has only 4.7% users and the rest 31% users uses both online pharmacy and community pharmacy services.

Table 3
Difficulties with community pharmacy shop purchases

S. No.	Particulars	Agree % (number)	Disagree % (number)	Neither agree nor disagree % (number)
1.	Unavailability of medicine	68.3% (86)	9.6% (12)	22.1% (28)
2.	Long queue or rush	48.4% (61)	27% (34)	24.6% (31)
3.	Non-availability of pharmacy products	19.1% (24)	57.1% (72)	23.8% (30)
4.	Costly Medicines	38.9% (49)	26.2% (33)	34.9% (44)

5.	Not open round the clock(24hrs)	58.7% (74)	25.4% (32)	15.9% (20)

Source: Online Survey

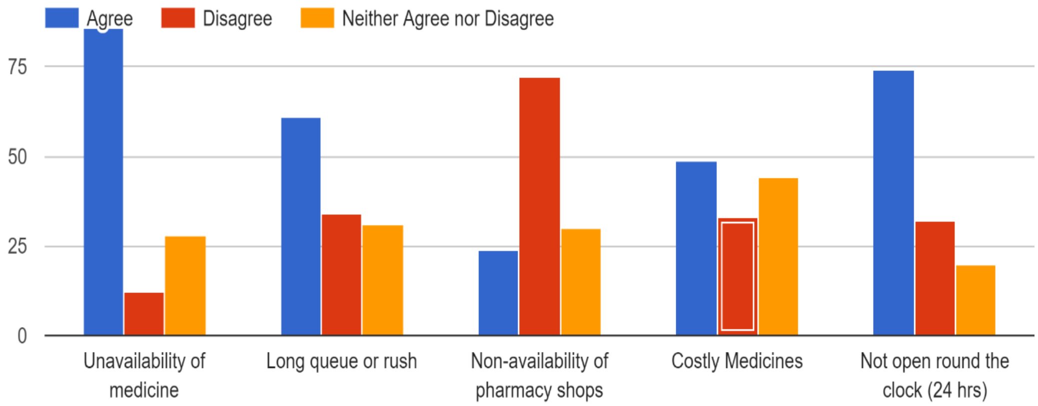

Figure 3. Difficulties with pharmacy shop purchases

Interpretation

From the above data it is seen that the unavailability of medicine in a normal chemist shop prevails with 68.3% agreeing to it followed by unavailability of 24-hour service of these chemist shops with 58.7% agreeing to it. While long queues/rush is moderately seen with 48.4% but there is abundance of available pharmacy products with 57.1% disagreeing to it.

Table 4
Concerns regarding online pharmacy

S. No	Particulars	Agree % (number)	Disagree % (number)	Neither agree nor disagree % (number)
1.	Substandard/Counterfeit/Illegal Medicines	49.2% (62)	24.6% (31)	26.2% (33)
2.	Illegal Website or Internet Security	56.3% (71)	25.4% (32)	18.3% (23)
3.	Non-availability of particular brand of drug specially prescribed by doctor	47.6% (60)	26.2% (33)	26.2% (33)
4.	Easy availability of Community pharmacy shops	65.9% (83)	15.9% (20)	18.2% (23)
5.	Chance of ordering wrong medicines	49.2% (62)	29.4% (37)	21.4% (27)
6.	Uncertainty about timely delivery of the medicine	77% (97)	10.3% (13)	12.7% (16)

Source: Online Survey

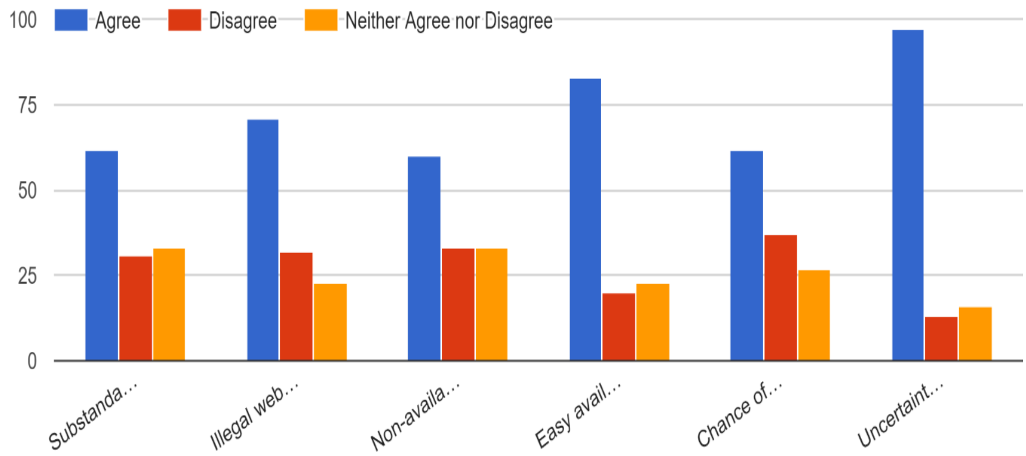

Figure 4. Concerns regarding online pharmacy

Interpretation

Uncertainty about timely delivery of medicines and illegal websites or internet security were the major apprehensions regarding online pharmacies among 77% and 56.3% of participants respectively. 65.9% of participants opined that easy accessibility of community pharmacy shops in neighbourhood deter them from using online pharmacies services. The chance of ordering wrong medicines, non-availability of particular brand and substandard/counterfeit/illegal medicines were the remaining concerns with 49.2%, 47.6% and 49.2% respectively agreeing to it.

Table 5
Most trusted E-pharmacy websites/application by the respondents

S. No	Websites/Application	No. of Respondents	Percentage
1.	Netmed	20	15.9%
2.	PharmEasy	49	38.9%
3.	Medlife	13	10.3%
4.	1mg	4	3.1%
5.	Apollo Pharmacy	33	26.2%
6.	Practo	7	5.6%

Source: Online Survey

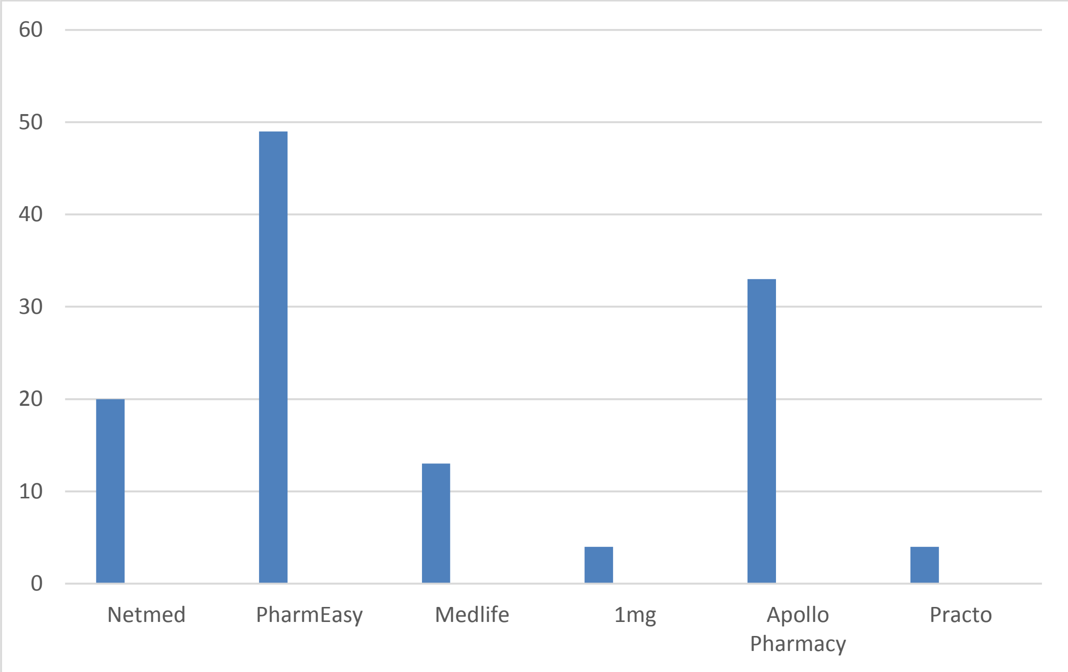

Figure 5. Trusted Websites/Applications among respondents

Interpretation

Pharm Easy and Apollo Pharmacy were the most trusted by the respondents with 38.9% and 26.2% agreeing to it respectively. While Practo and 1mg were the least among the six with only 5.6% and 3.1% trusted and would recommend to others.

Findings and Conclusion

The Indian pharma industry has accomplished noteworthy development in both domestic and worldwide business sectors during the previous five decades. The big push for the pharma sector can be seen as an attempt by the government to wean India off raw material imports from China that are heavily used in local drug manufacturing. Indian pharma manufacturers export nearly half of the pharma production, both in terms of volume and value, to the US, UK, South Africa, Russia and other countries. COVID-19 has provided an opportunity for Indian pharmaceutical industry to manufacture Active Pharmaceutical Ingredients (API) and intermediate. In view of the Indian pharmaceutical industry dependence on China for APIs and to protect national security from danger, the central government has approved to promote the manufacture of APIs and Key Starting Materials (KSM) plants within the country (Vignesh & Ganesh, 2021). Due to movement restriction in lockdown and to maintain the physical distancing, the COVID-19 pandemic has called the new way of thinking. Digital and E-commerce industry are becoming the more important due to the pandemic. E-Pharma industries has grown significantly due to the pandemic induced lockdown as peoples recognized the E-buying of medicines is the safer way to purchase the medicines to protect from the infection. Consumers India's online pharmacy sector, dominated by Pharmeasy, 1mg and Netmeds, was among the biggest beneficiaries of the pandemic-induced lockdown. Due to complete value proposition offered by E-pharma companies, past experiences, and shift towards digital platforms due to COVID-19, online pharma industry has the huge potential in coming years. In India there are no well-defined staunch online pharmacy or telemedicine laws. Whereas bestowing to the statement of Supreme Court, the doctors should not consult through phone, except in the emergencies. The results of the online survey indicated that respondents were aware about the advantages of online pharmacies and were keen to pursue this channel of commerce. But the willingness of purchase of medicine online seems to be hindered by factors such as lack of rules and regulations against the online pharmacies, supply of substandard/counterfeit medicines and availability of satisfactory services of traditional community pharmacies. Moreover, purchasing medicines from internet vendors was not a common practice amongst the current sample size. In the backdrop of rapidly increasing number of internet users every day, mutual partnership among online pharmacies, regulatory authorities and physicians in consumers' interest seems like the need of the hour.

The Indian pharmaceuticals market has characteristics that make it unique. First, branded generics dominate, making up for 70 to 80 per cent of the retail market (Mahesh et. al., 2020). Second, local players have enjoyed a dominant position driven by formulation development capabilities and early investments. Third, price levels are low, driven by intense competition. While India ranks tenth globally in terms of value, it is ranked third in volumes. These characteristics present their own opportunities and challenges. India's pharmaceuticals market has grown in confidence and firmly moved on to an accelerated growth path. The central question now rests around the true nature and the full extent of this market's potential. Backed by solid fundamentals, the market is giving rise to a variety of business opportunities. We feel confident that strong player intent, investments and actions will underpin future growth and enable the Indian pharmaceuticals market to break into the global top tier. In the 2020-2030 period, we expect Indian pharma industry to grow at a compounded annual growth rate (CAGR) of ~12% to reach at US$130 bn by 2030 from US$41.7 bn in 2020 (Ayati et. al., 2020). Though the pharmaceutical industry has grown at a CAGR of approx. 13% over the two decades, in the last decade, the CAGR has been ~ 8.5% and it has currently been ~6.2% over the past five years (Guerin, 2020). Only those people know about the pharmaceutical market which is related to this market, but now people are aware day by day. Even the government of India has made several efforts to augment the growth of pharma industry. The privatization and globalization policy of the Indian government, introduced in the mid-1990s provided incentives to research and development in the pharma sector.

References

1. Almurisi, S. H., Al Khalidi, D., AL-Japairai, K. A., Mahmood, S., Chilakamarry, C. R., Kadiyala, C. B. N., & Mohananaidu, K. (2020). Impact of COVID 19 Pandemic Crisis on the Health System and Pharmaceutical Industry.

2. Ayati, N., Saiyarsarai, P., & Nikfar, S. (2020). Short and long term impacts of COVID-19 on the pharmaceutical sector. *DARU Journal of Pharmaceutical Sciences, 28*(2), 799-805.
3. Barshikar, R. (2020). Covid 19–Impact and new normal for pharmaceutical industry (Part–I). *Journal of Generic Medicines, 16*(3), 112-119.
4. Budhwar, N. (2021). Investment in Indian pharma companies during COVID 19 lockdowns in Q2 2020. European Journal of Molecular & *Clinical Medicine, 7*(9), 3204-3210.
5. Deepika, R. S., Singh, T. G., Singh, M., Saini, B., Kaur, R., Arora, S., & Singh, R. (2020). STATUS OF E-PHARMACIES IN INDIA: A REVIEW. Plant Archives, 20(1), 3763-3767
6. Devi, A., Chandel, S. R., Kumar, S., & Chaurasia, H. (2020). Impact of Covid-19 on Indian Pharma: A Review. EPIDEMIOLOGY AND TRANSMISSION OF INFECTIOUS DISEASES, 223.
7. Guerin, P. J., Singh-Phulgenda, S., & Strub-Wourgaft, N. (2020). The consequence of COVID-19 on the global supply of medical products: Why Indian generics matter for the world?. *F1000Research,* 9.
8. Mahesh, A. R., Samuel, V. J., Bag, S., & BG, P. K. (2020). E-Pharmacies: An emerging market in Indian retail pharmacy, An Indian perspective. Research Journal of Pharmaceutical Sciences ISSN, 2319,555X.
9. Mittal, S., & Sharma, D. (2021). The Impact of COVID-19 on Stock Returns of the Indian Healthcare and Pharmaceutical Sector. Australasian Accounting, *Business and Finance Journal, 15*(1), 5-21.
10. Priyanka, V. P., & Ashok, B. K. (2016). E-pharmacies regulation in India: Bringing new dimensions to pharma sector. *Pharmaceutical Regulatory Affairs, 5*(175), 1-7.
11. Rewari, B. B., Mangadan-Konath, N., & Sharma, M. (2020). Impact of COVID-19 on the global supply chain of antiretroviral drugs: a rapid survey of Indian manufacturers. *WHO South-East Asia journal of public health, 9*(2), 126-133.
12. Singh, H., Majumdar, A., & Malviya, N. (2020). E-Pharmacy impacts on society and pharma sector in economical pandemic situation: a review. *Journal of Drug Delivery and Therapeutics, 10*(3-s), 335-340.
13. Vignesh, M., & Ganesh, G. N. (2021). Pharmacy professions in India during covid-19 pandemic: present status, future challenges and a way forward. *Int J Appl Pharm, 13,* 32-5.