STUDY ON IMPACT OF COVID-19 PANDEMIC SITUATION ON PHARMACEUTICAL INDUSTRY

Bhairavi Joshi, Chaitali Tambe, Omkar Jangam, Rajat Tak,
Dr. Meenal Pendse*

**Student – MBA in Hospital & Healthcare Management, *Assistant Professor,
MIT-WPU School of Management (PG), Pune, India**

ABSTRACT

Today the whole world is going through a tremendous amount of pain, physically and mentally, as the SARS COVID-19 has taken over the whole world by storm. The world is certainly perplexed and has always been cutting a phrase through all the years until now, but we are not going to discuss about more problems, instead we will be peeking into a whole work section of Pharmaceutical industry through the perspective of two main stakeholders of this industry i.e. the pharmacists and the customer. The main aim of this study is to identify and evaluate the impact of COVID-19 on Pharmaceutical Sector through the perspectives of the Customer and the Pharmacists, pre COVID-19 and During COVID-19. This research was carried by collecting the secondary data and the primary data through a structured questionnaire and was analysed to understand the impact of COVID-19 on the industry.

It was observed that the COVID-19 pandemic situation had significant impact on the operational procedures, delivery system and the customer preferences in the pharmaceutical sector. The customer and the pharmacist tried to adapt according to the changes happening in the surroundings but still the Indian pharmaceutical sector was affected and customers were suffered due to lack of proper supply chain management in the industry which led to unavailability of medicines and increased in the costs. Change of timings, Lack of sufficient availability of manpower, to serve the customers was one of the factors affecting the industry. Though, the Indian pharmaceutical industry is affected due to the COVID-19 pandemic but holds a huge potential in itself to become one of the leading industries by working on their supply chain management and human resource constraints.

Keywords: COVID-19, Corona virus, Pharmaceutical industry, Pharmaceutical market, Health market, Tele-health,SARS-CoV-2, Pharmacist, Problems faced, Customer Perspective, During COVID 19, Before COVID19.

OBJECTIVES

The main objectives of the study are -

o A comparative study on pre and during situation of COVID 19 on pharmaceutical sector

o To understand the changes and adaption of marketing strategies and process in pharmaceutical sector due to COVID 19

o To analyse the pharmaceutical market under the two conditions - Pre COVID-19 and During COVID-19.

o To study the buying behaviour of customers and pharmacists pre COVID-19 and during COVID-19.

PURPOSE

COVID 19 has become a global pandemic affecting the whole world. Looking at the Indian pharmaceutical industry which is the world's third largest producer of drugs has been highly impacted due to this pandemic situation. It is very crucial to identify and evaluate the impact of COVID-19 on Pharmaceutical Sector considering different perspectivesfor the further improvisation and implementation of strategies in the industry. Hence the purpose of this research is to understand how COVID19 pandemic has influenced the Pharmaceutical industry from the perspectives of the customers and pharmacists who are the important stakeholders of the industry.

SECTOR PROFILE

Pharmaceutical Industry

India is the largest provider of generic drugs globally. Indian pharmaceutical sector supplies over 50 per cent of global demand for various vaccines, 40 per cent of generic demand in the US and 25 per cent of all medicine in the UK.

India enjoys an important position in the global pharmaceuticals sector. The country also has a large pool of scientists and engineers with a potential to steer the industry ahead to greater heights. Presently, over 80 per cent of the antiretroviral drugs used globally to combat AIDS (Acquired Immune Deficiency Syndrome) are supplied by Indian pharmaceutical firms.

Investments and Recent Developments

The Union Cabinet has given its nod for the amendment of existing Foreign Direct Investment (FDI) policy in the pharmaceutical sector in order to allow FDI up to 100 per cent under the automatic route for manufacturing of medical devices subject to certain conditions.

The drugs and pharmaceuticals sector attracted cumulative FDI inflow worth US$ 16.50 billion between April 2000 and March 2020 according to the data released by Department for Promotion of Industry and Internal Trade (DPIIT).

Some of the recent developments/investments in the Indian pharmaceutical sector are as follows:

- In May 2020, Jubilant Generics Ltd entered into a non-exclusive licencing agreement with US-based Gilead Sciences Inc to manufacture and sell the potential COVID-19 drug Remdesivir in 127 countries, including India.

- Affordable medicines under Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) achieved record sales turnover of Rs 52 crore (US$ 7.38 million) in the month of April 2020.

- During December 2019, on moving annual total (MAT) basis, industry growth was at 9.8 per cent, with price growth at 5.3 per cent, new product growth at 2.7 per cent, while volume growth at two per cent y-o-y.

- In October 2019, Telangana Government proposed Hyderabad Pharma City with financial assistance from the Central government of Rs 3,418 crore (US$ 489 million).

- As on August 2019, the moving annual turnover (MAT) for biosimilar molecules sold in the domestic market stood at Rs 1,498 crore (US$ 214.31 million).

- Healthcare sector witnessed private equity of total US$ 1.1 billion with 27 deals in H12019.

- Indian pharmaceutical industry's export to the US will get a boost as branded drugs worth US$ 55 billion will become off-patent during 2017-2019.

Road Ahead

Medicine spending in India is projected to grow 9-12 per cent over the next five years, leading India to become one of the top 10 countries in terms of medicine spending.

Going forward, better growth in domestic sales would also depend on the ability of companies to align their product portfolio towards chronic therapies for diseases such as such as cardiovascular, anti-diabetes, anti-depressants and anti-cancers, which are on the rise.

The Indian Government has taken many steps to reduce costs and bring down healthcare expenses. Speedy introduction of generic drugs into the market has remained in focus and is expected to benefit the Indian pharmaceutical companies. In addition, the thrust on rural health programmes, lifesaving drugs and preventive vaccines also augurs well for the pharmaceutical companies.

LITERATURE REVIEW

The COVID 19 global pandemic has almost impacted every industry, including the pharmaceutical. The Pharmaceutical Industry as

a whole has the impact from production to supply chain management and till it reaches final consumer. Talking about the Indian pharmaceutical industry, **Dr. Abhishek Dadhich (April, 2020)** says, it is the world's third largest drug producer by volume and the country's market manufactures 60 percent of vaccines globally. The Indian pharmaceutical industry maintains great advantages, including the availability of a large labor pool and advanced technologies that enable high regulatory standards of market.

There has been a negative and the positive impact as well in this industry. If we monitor and look at the impact at pharmaceutical sector from production stage, **According to Ranjit Barshikar (2020)**, The pharmaceutical and healthcare operations need to take care of Good Manufacturing Practices (GMP) looking at the current throughout the manufacturing operations at site. If not taken proper care can lead to contamination and other ill effects**. Dr. Shalini Sharma (Apr, 2020)** says that rising price of drugs India's manufacturers rely heavily on imports of their APIs from China. Because of lockdown the production of APIs has slowed down, which leads in, availability issues and increased cost. According to, **Ameex Technologies (April, 2020)**,13% of the brand and generic manufacturers are based out of China and according to the FDA, as of 2018, 24% of medicines and 31% of medical ingredients were imported from India.

Talking about the pharmaceutical supply chain, five urgent research and development challenges can be identified by **Derric Ethelbert (Aug, 2020)** those are, Decision-making under epistemic and stochastic uncertainty, Optimal supply chain planning taking into account agility, resilience and sustainability, Game theoretic analysis of conflicts of interest among agents in global value chains, Life-cycle sustainability assessment of pharmaceutical product systems, Development of drug allocation strategies under resource or supply constraints. Apart from this **Nayyereh Ayati(June, 2020)** et al. found short-term impacts of COVID-19 pandemic includes demand changes, regulation revisions, research and development process changes and the shift towards tele-communication and tele-medicine, industry growth slow-down, approval delays. Moving towards self-sufficiency in pharm-production supply chain and trend changes in consumption of health-market products along with ethical dilemma could be anticipated as long-term impacts of COVID-19 pandemic on pharmaceutical sector in both global and local levels.

Though there are many negative impacts, but the industry is improving as it is adapting and finding new and better solutions. Now looking at this situations positive impact, **Ellen S.Koster (2020)** et al. found that Pharmacies implemented hygiene measures and minimized direct patient-provider contact, e.g. by delivering medication at

home to a wider range of patients (47.0%), temporarily not conducting medication reviews (55.8%) and only performing inhalation instructions via telephone (22.3%). Only a small number of pharmacies used tele-pharmacy, such as video calling during patient education and counseling. **Friedemann Wolf (April, 2020)** at el. Says biopharma companies continue to deliver treatments, and provide information and education on their use, to health care professionals and patients by indicating that they prefer to access disease and product information through online and remote channels, thus freeing up time for patients, and save direct interactions with pharma reps for discussions regarding patient services **Dr. Charu Sehgal (May, 2020)** says that the impact on the cash flows has led many of the companies in the pharma sector to impose a freeze on the hiring process , unlike the other industries, the pharmaceutical industry is expected to see a positive impact, on an overall basis, on its growth in this year. The market expectations are on similar lines as indicated by the stock prices which for many pharma companies had risen by 20-30% in Apr'20 compared to the Q3FY20.Apart from this **Matthew E. Srkees(July,2020)** et al. says that, COVID-19 illuminates low pharmaceutical literacy among many consumers, by giving the example of hydroxychloroquine and remdesivir how these drugs had perception of curing COVID 19. Conflicting information likely led consumers to question whom to trust—policy

makers, media outlets, or pharmaceutical firms. But footprints in this market, Global hydroxychloroquine market is expected to gain market growth in the forecast period of 2020 to 2027 and so will be growth in the players in the pharmaceutical sector says, **Data Bridge Market Research (August, 2020).**

RESEARCH METHODOLOGY

This is a Qualitative research carried out using exploratory research design. The duration of the study was of one-month 15th August,2020 to 15th September,2020. This research has been carried out by utilizing both primary and secondary data resources.

Primary Data: Primary data of the study was collected through a structured questionnaire with the help of Google Forms. Data was also collected by personally asking the structured questionnaire to the Pharmacist and entering the data collected into the Google Forms.The questionnaire constituted to two main parts, the first part was the demographic variable which takes into account the demographic information of the sample of the study, and the second paragraph which was questions regarding the factors having an impact on Pharmaceutical industry pre and during COVID-19 pandemic. The sampling method used for primary data collection was convenience sampling for the target group which included PG students & professors of MITWPU for customer perspective and pharmacists from various cities in India for

pharmacist perspective. 101 responses were received for customer perspective and 87 responses for pharmacist perspective.

Secondary Data: The secondary data of the study was obtained through various journals, e-books, reports, articles, research papers, etc.

ANALYSIS AND INTERPRETATION

The data from pharmacist perspective and customer perspective collected was entered into excel and SSPS for further data analysis. Various hypothesis tests like paired t-test, independent t-test, etc. were used for analysis of the collected data.

❖ **PHARMACIST PERSPECTIVE:**

1. **Mode of medicine delivery**
   (t-Test: Two-Sample Assuming Unequal Variances)

	Before COVID	*During COVID*
Mean	1.471264368	2.275862069
Variance	0.717187918	0.853247795
Observations	87	87
Hypothesized Mean Difference	0	
df	171	
t Stat	-5.988641731	
P(T<=t) one-tail	6.0699E-09	
t Critical one-tail	1.653813324	
P(T<=t) two-tail	1.21398E-08	
t Critical two-tail	1.973933954	

Table 01: Mode of medicine delivery

Null Hypothesis: No significant difference in mode of medicine delivery before and during COVID-19

Alternate Hypothesis: There is significant difference in mode of medicine delivery before and during COVID-19

Result: As p value<0.05 at 5% level of significance, we conclude that the null hypothesis is rejected while alternative hypothesis is accepted.
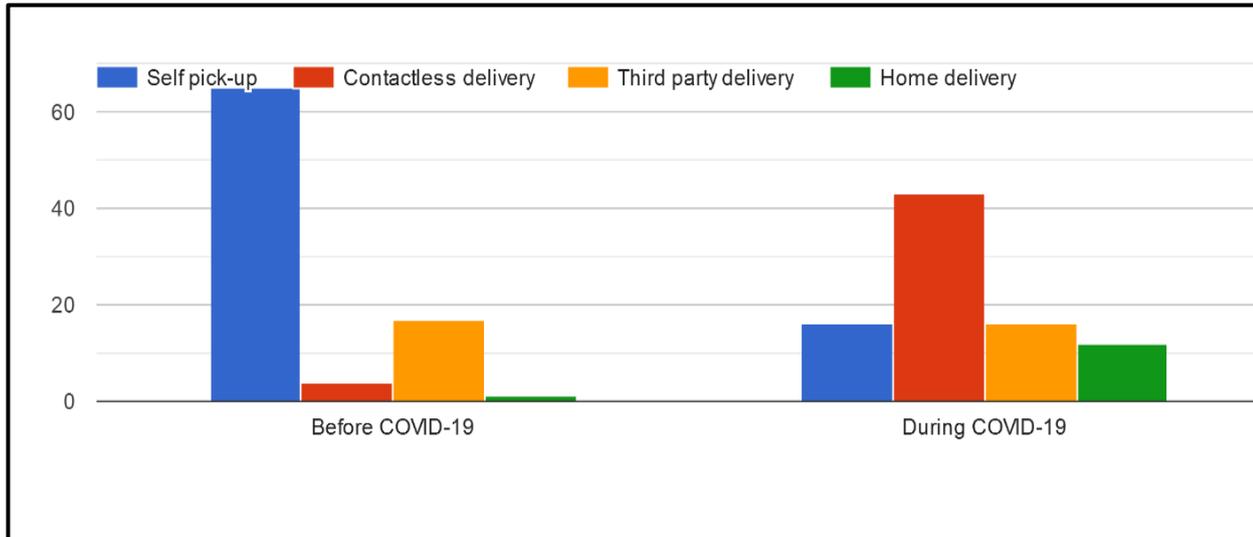
Figure01: Change in mode of medicine delivery due to COVID-19

Interpretation: From the analysis we can interpret, there is significant difference in mode of medicine delivery before and during COVID-19

2. **Factors affecting profit due to pandemic situation [Timing of the Pharmacy]**
   (t-Test: Two-Sample Assuming Unequal Variances)

	Variable 1	*Variable 2*
Mean	1.413793103	0
Variance	0.594226143	0
Observations	87	87
Hypothesized Mean Difference	0	
df	86	
t Stat	17.10683269	
P(T<=t) one-tail	1.01488E-29	
t Critical one-tail	1.662765449	
P(T<=t) two-tail	2.02977E-29	
t Critical two-tail	1.987934206	

Table 02: Factors affecting profit due to pandemic situation [Timing of the Pharmacy]

Null Hypothesis: No significant effect on profit due to timing of the pharmacy in the pandemic situation

Alternate Hypothesis: Profit affected due to timing of the pharmacy in the pandemic situation

Result: As p value<0.05 at 5% level of significance, we conclude that the null hypothesis is rejected while alternative hypothesis is accepted.
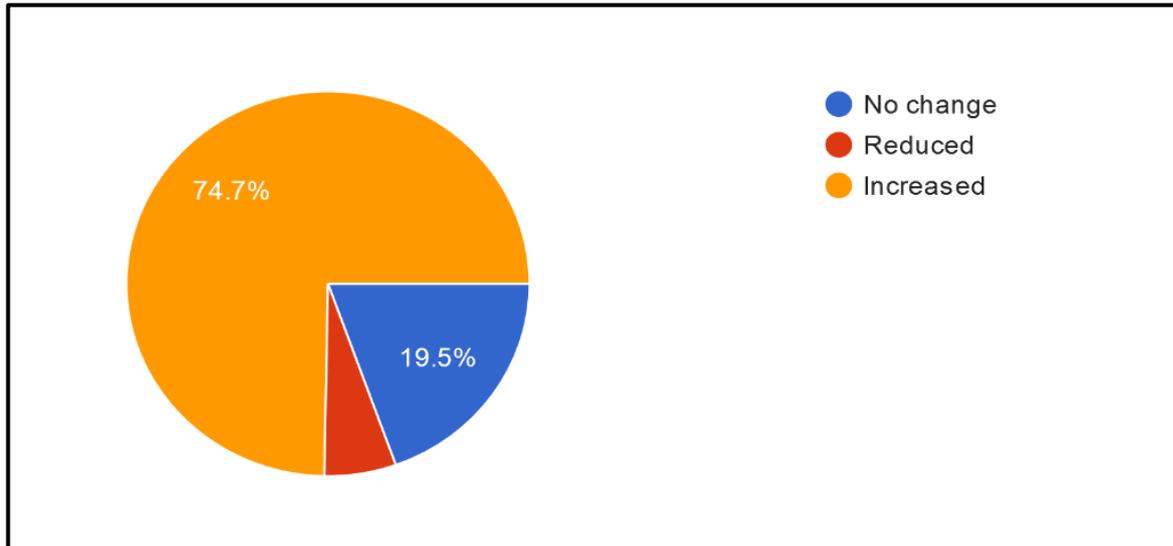
Figure 02: Change in timing of the pharmacy during COVID-19

Interpretation: From the analysis we can interpret, Profit affected due to timing of the pharmacy in the pandemic situation.

3. **Factors affecting profit due to pandemic situation [Availability of Medicines]**
   (t-Test: Two-Sample Assuming Unequal Variances)

	Variable 1	*Dummy*
Mean	1.390804598	0
Variance	0.589681903	0
Observations	87	87
Hypothesized Mean Difference	0	
df	86	
t Stat	16.89339139	
P(T<=t) one-tail	2.33895E-29	
t Critical one-tail	1.662765449	
P(T<=t) two-tail	4.67791E-29	
t Critical two-tail	1.987934206	

Table 03: Factors affecting profit due to pandemic situation [Availability of Medicines]

Null Hypothesis: No significant effect on profit due to availability of the medicines in the pandemic situation

Alternate Hypothesis: Profit affected due to availability of the medicines in the pandemic situation

Result: As p value<0.05 at 5% level of significance, we conclude that the null hypothesis is rejected while alternative hypothesis is accepted.

Interpretation: From the analysis we can interpret, Profit affected due to availability of the medicines in the pandemic situation

4. **Factors affecting profit due to pandemic situation [Availability of manpower]**
   (t-Test: Two-Sample Assuming Unequal Variances)

	Variable 1	*Dummy*
Mean	1.494252874	0
Variance	0.624966586	0
Observations	87	87
Hypothesized Mean Difference	0	
df	86	
t Stat	17.63012237	
P(T<=t) one-tail	1.34258E-30	
t Critical one-tail	1.662765449	
P(T<=t) two-tail	2.68515E-30	
t Critical two-tail	1.987934206	

Table 04: Factors affecting profit due to pandemic situation [Availability of manpower]

Null Hypothesis: No significant effect on profit due to availability of manpower in the pandemic situation

Alternate Hypothesis: Profit affected due to availability of manpower in the pandemic situation

Result: As p value<0.05 at 5% level of significance, we conclude that the null hypothesis is rejected while alternative hypothesis is accepted.
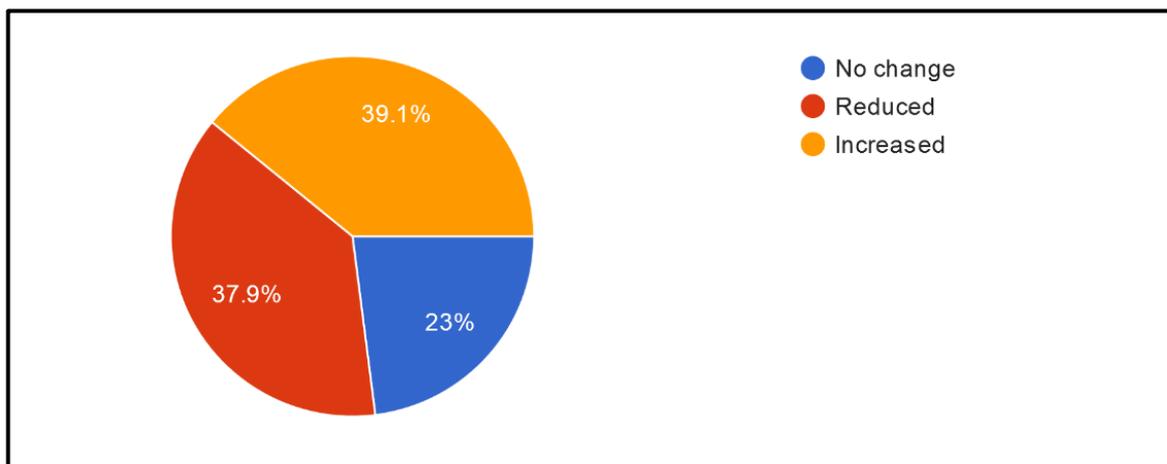

Figure 03: Change in the availability of manpower during COVID-19

Interpretation: From the analysis we can interpret, Profit affected due to availability of manpower in the pandemic situation

5. **Factors affecting profit due to pandemic situation [Customer Demand]**

(t-Test: Two-Sample Assuming Unequal Variances)

	Variable 1	*Dummy*
Mean	1.333333333	0
Variance	0.550387597	0
Observations	87	87
Hypothesized Mean Difference	0	
Df	86	
t Stat	16.76347471	
P(T<=t) one-tail	3.89901E-29	
t Critical one-tail	1.662765449	
P(T<=t) two-tail	7.79801E-29	
t Critical two-tail	1.987934206	

Table 05: Factors affecting profit due to pandemic situation [Customer Demand]

Null Hypothesis: No significant effect on profit due to Customer Demand in the pandemic situation

Alternate Hypothesis: Profit affected due to Customer Demand in the pandemic situation

Result: As p value<0.05 at 5% level of significance, we conclude that the null hypothesis is rejected while alternative hypothesis is accepted.

Interpretation: From the analysis we can interpret, Profit affected due to Customer Demand in the pandemic situation

6. **Factors affecting profit due to pandemic situation [Commission from Doctors]**
   (t-Test: Two-Sample Assuming Unequal Variances)

	Variable 1	*Dummy*
Mean	1.873563218	0
Variance	0.762897621	0
Observations	87	87
Hypothesized Mean Difference	0	
Df	86	
t Stat	20.00759316	
P(T<=t) one-tail	2.08933E-34	
t Critical one-tail	1.662765449	
P(T<=t) two-tail	4.17867E-34	
t Critical two-tail	1.987934206	

Table 06: Factors affecting profit due to pandemic situation [Commission from Doctors]

Null Hypothesis: No significant effect on profit due to Commission from Doctors in the pandemic situation

Alternate Hypothesis: Profit affected due to Commission from Doctorsin the pandemic situation

Result: As p value<0.05 at 5% level of significance, we conclude that the null hypothesis is rejected while alternative hypothesis is accepted.

Interpretation: From the analysis we can interpret,Profit affected due to Commission from Doctorsin the pandemic situation
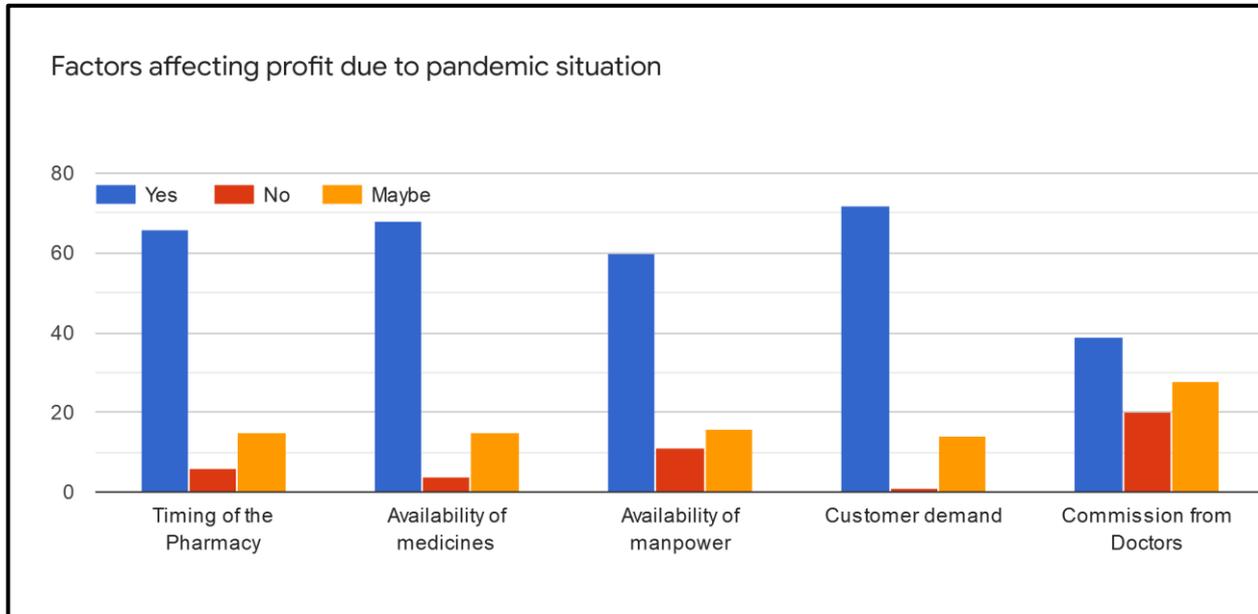

Figure04: Factors affecting Profit due to COVID-19 pandemic situation

Interpretation: The timings of pharmacy, availability of medicines, availability of manpower and customer demand has majorly affected the profit to the pharmacist in the COVID-19 pandemic.
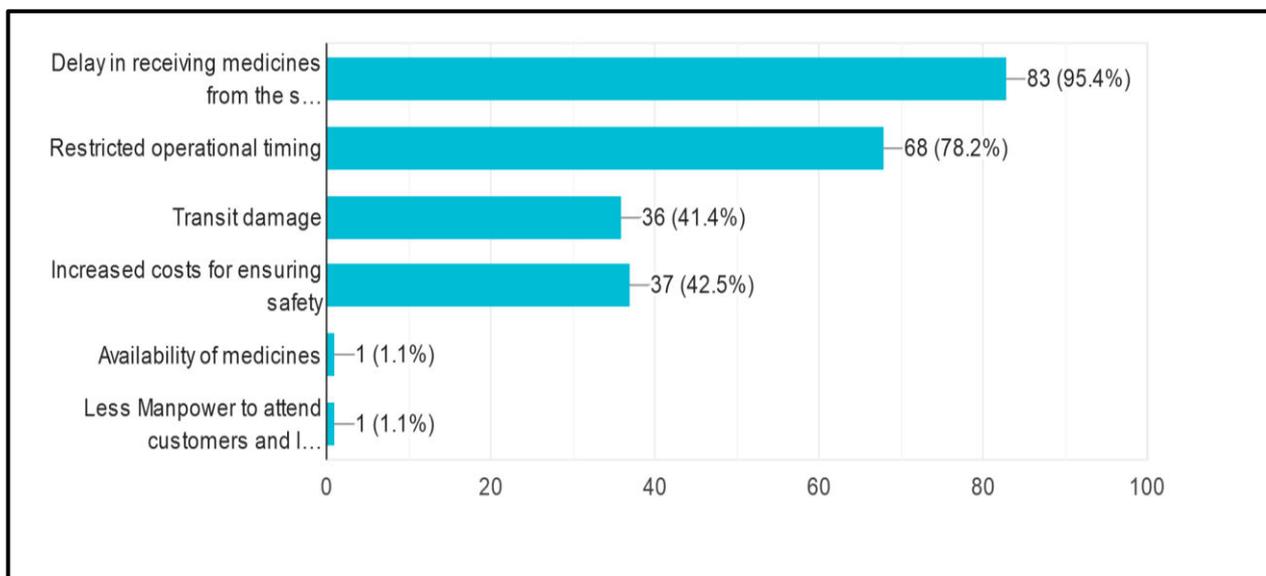
7. **Other Challenges faced by Pharmacist:**

Figure 05: Other challenges faced by Pharmacist During COVID-19

Result:

Challenges	Percent
Delay in receiving medicines from the supplier	95.4
Restricted operational timing	78.2
Transit damage	41
Increased costs for ensuring safety	42.5
Availability of medicines	1.1
Availability of manpower	1.1

Table 07: Other challenges faced by Pharmacist

8. Changes in mode of payment
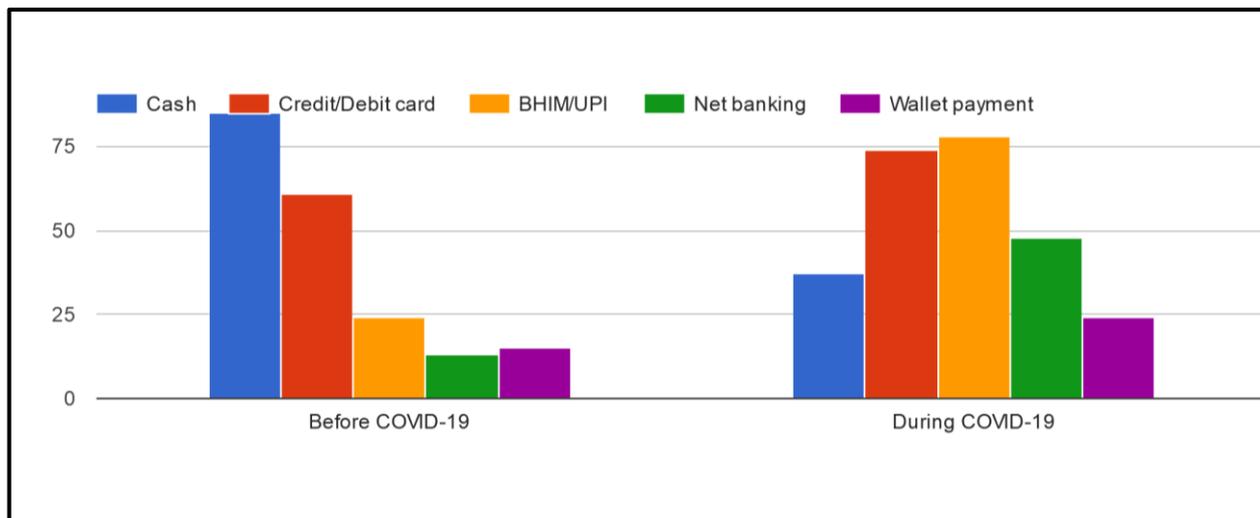
Figure 06: Change in payment modes due to COVID-19

Interpretation: In Pre-COVID-19 situation, customer was comfortable with cash payments, but during COVID-19, in order to maintain social distancing, customer turned towards online payment methods like BHIM UPI, Net Banking, Wallet Payment and card payments.

❖ **CUSTOMER PERSPECTIVE:**

1. **Cost beard by family on monthly basis (Pre-COVID 19 and during COVID-19)**
   (t-Test: Two-Sample Assuming Unequal Variances)

	Pre COVID-19	*During COVID-19*
Mean	1.75	7.43
Variance	0.957070707	1.338484848
Observations	100	100
Hypothesized Mean Difference	2	
df	193	
t Stat	-50.68941932	
P(T<=t) one-tail	8.8104E-114	
t Critical one-tail	1.652787068	
P(T<=t) two-tail	1.7621E-113	
t Critical two-tail	1.972331676	

Table 09: Cost bear by customers on monthly basis

Null Hypothesis: No Significant effect change in costs bearded by customers pre and during COVID-19

Alternative Hypothesis: There is significant effect change in costs bearded by customers pre and during COVID-19

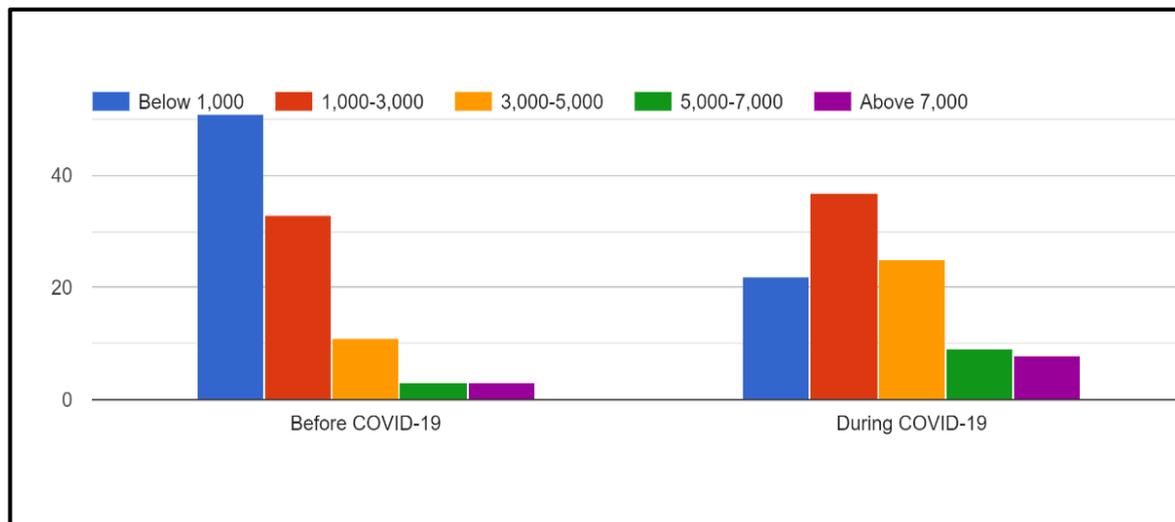**Result:** Since p<0.5, the null hypothesis is rejected and alternative hypothesis is accepted

Figure07: Change in cost bear by customers monthly due to COVID-19

Interpretation:

From the analysis we can interpret, there is significant effect change in costs incurredto customers pre and during COVID-19.

2. Customer buying methods preference (Pre-COVID and during COVID-19)
(t-Test: Two-Sample Assuming Unequal Variances)

	Pre COVID-19	*During COVID-19*
Mean	1.09	4.71
Variance	0.102929293	0.773636364
Observations	100	100
Hypothesized Mean Difference	2	
df	125	
t Stat	-60.02664769	
P(T<=t) one-tail	2.49494E-94	
t Critical one-tail	1.657135178	
P(T<=t) two-tail	4.98988E-94	
t Critical two-tail	1.979124109	

Table 10: Customer buying methods preference

Null Hypothesis: No Significant effect change in customer buying methods pre and during COVID-19

Alternative Hypothesis: There is significant effect change in customer buying methods pre and during COVID-19

Result: Since p<0.5, the null hypothesis is rejected and alternative hypothesis is accepted
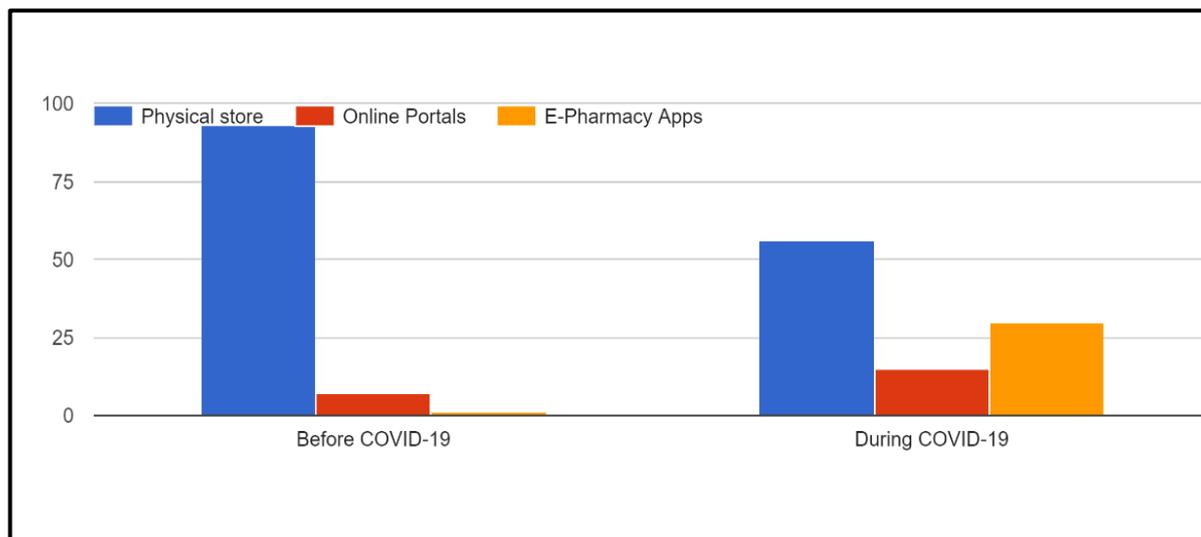

Figure 08: Change in customer preference of buying methods due to COVID-19

Interpretation: From the analysis we can interpret,there is significant effect change in customer buying methods pre and during COVID-19

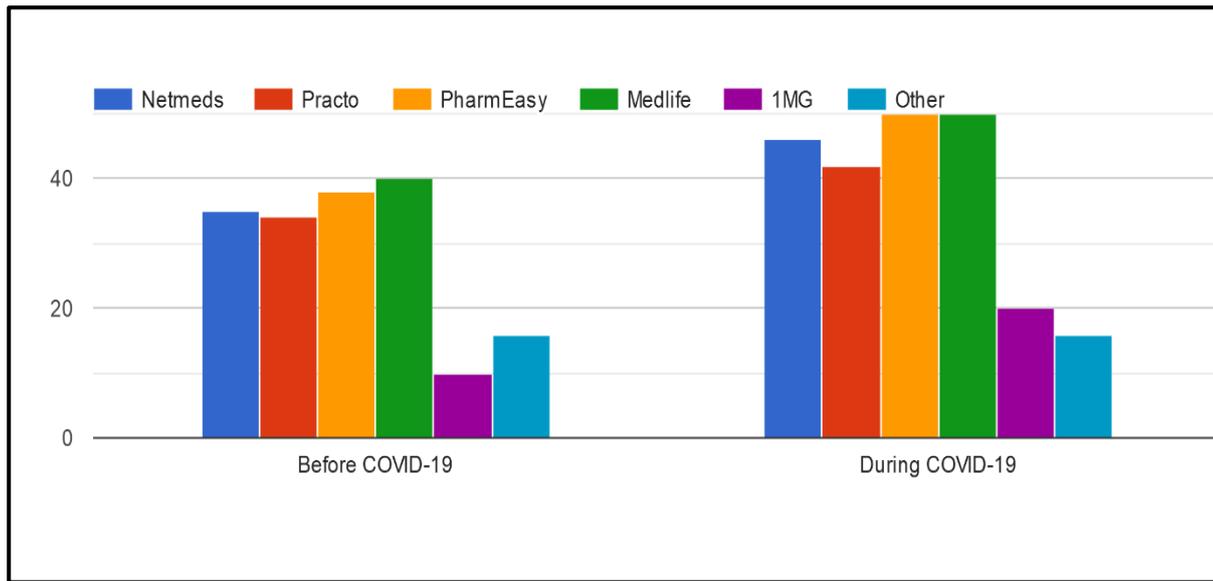### 3. Customer awareness of the E-pharmacy apps

Figure 09: Change in customer awareness of the E-pharmacy apps

Interpretation: There is significant difference in customer awareness about the E-Pharmacy apps pre and during the pandemic situation.

4. Preference of buying Generic and Brand-Manufactured Medicines
(t-Test: Two-Sample Assuming Unequal Variances)

	Pre COVID-19	*During COVID-19*
Mean	1.55	3.56
Variance	0.25	0.248888889
Observations	100	100
Hypothesized Mean Difference	2	
df	198	
t Stat	-56.77308014	
P(T<=t) one-tail	8.9381E-125	
t Critical one-tail	1.652585784	
P(T<=t) two-tail	1.7876E-124	
t Critical two-tail	1.972017478	

Table 11: Customer preference of buying Generic and Brand manufactured medicines

Null Hypothesis: No Significant effect change in customer Preference of buying Generic and Brand-Manufactured Medicines pre and during COVID-19

Alternative Hypothesis: There is significant effect change in customer Preference of buying Generic and Brand-Manufactured Medicines pre and during COVID-19

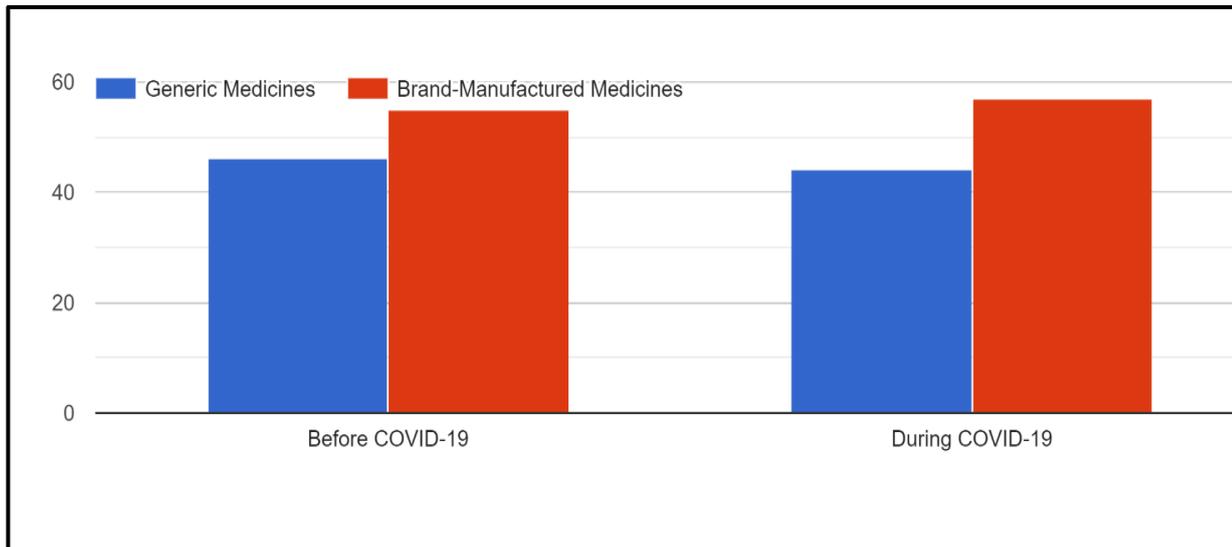**Result:** Since p<0.5, the null hypothesis is rejected and alternative hypothesis is accepted

Figure10: Change in customer preference in buying Generic and Branded Medicines due to COVID-19

Interpretation: From the analysis we can interpret, there is significant effect change in customer buying methods pre and during COVID-19.

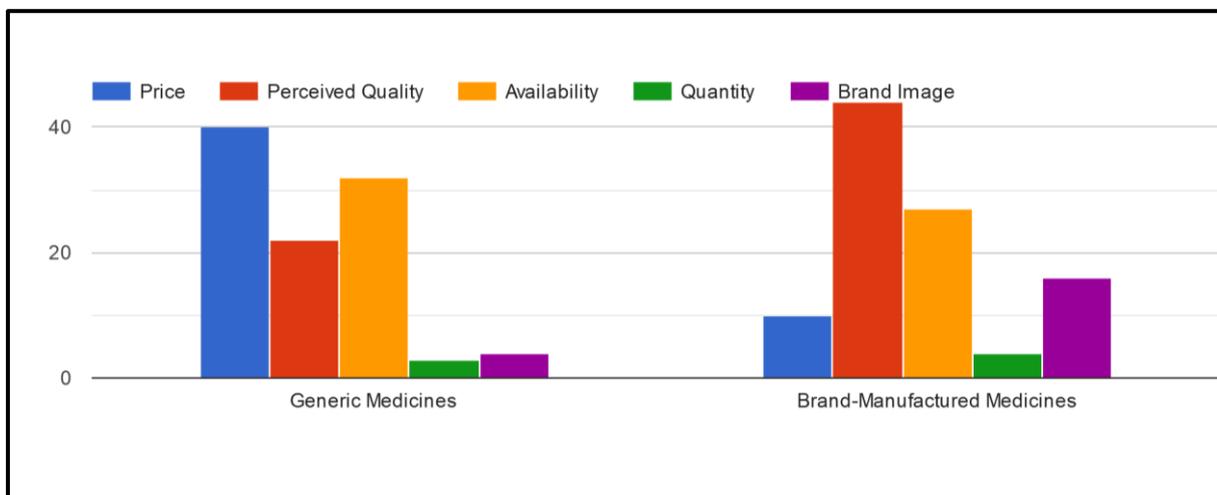### 5. Customer preference in buying Generic and Branded Medicines

Figure 11: Change in customer preference in buying Generic and Branded Medicines

Interpretation: Generic medicines are preferred by the customers because of its price and availability. Whereas the brand-manufactured medicines are preferred by the customers because of its perceived quality and its brand image.

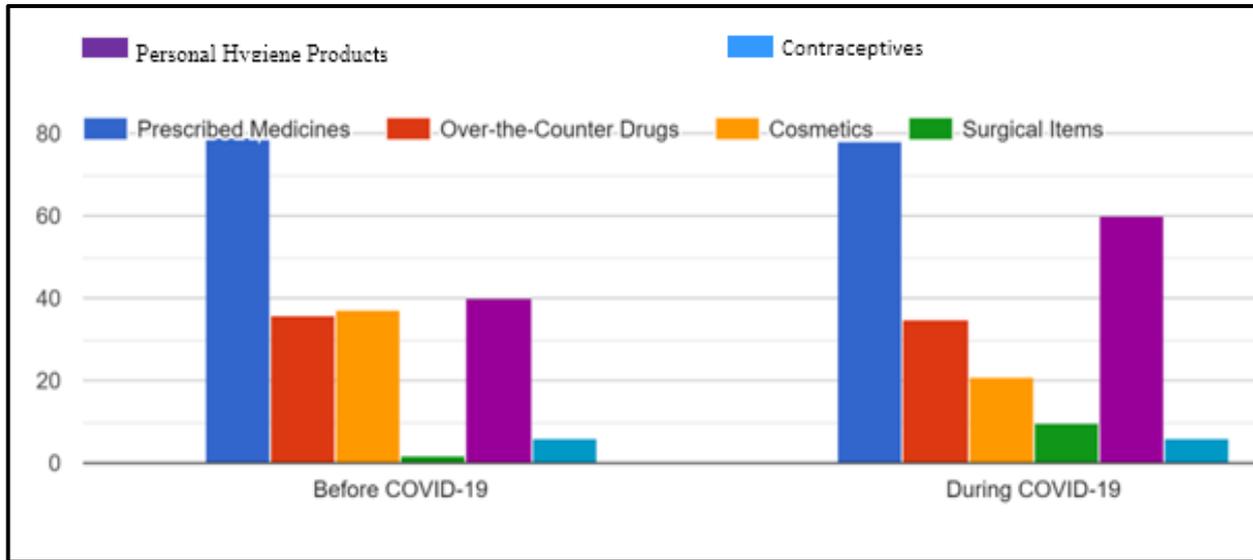## 6. Customer buying behaviour (Pre COVID-19 and During COVID-19)

Figure12: Change in buying behaviour due to COVID-19

Interpretation: We can interpret that there is no major change in buying of prescribed medicine, OTC drugs, and contraceptives. But there has been decrease in buying of Surgical items and Cosmetics and a major increase in buying of personal hygiene products during the COVID-19 pandemic situation.

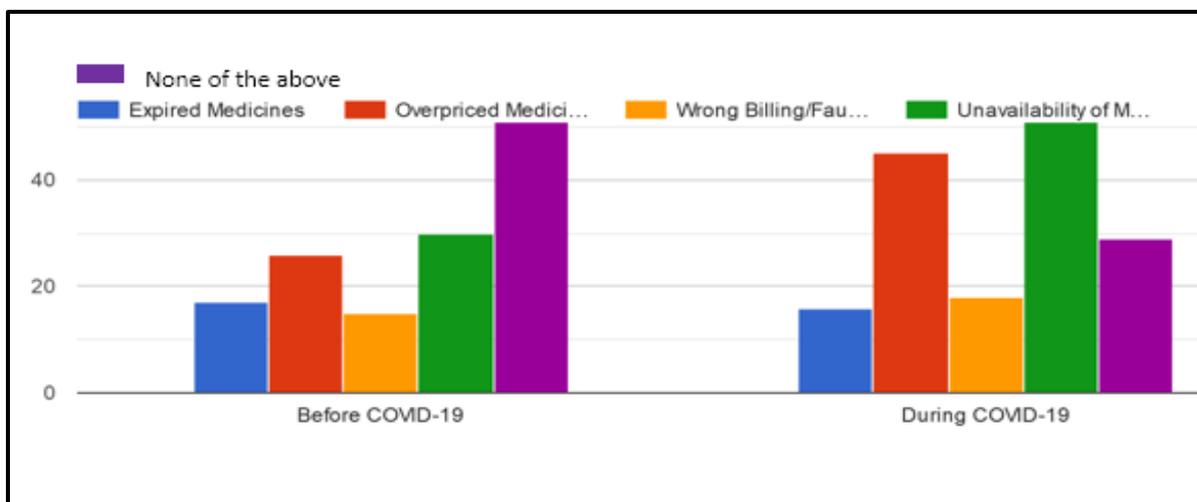## 7. Challenges Faced by the customer in buying medicines

Figure 13: Changes in the challenges faced by customer while purchasing the medicines due to COVID-19

Interpretation: Pre-COVID-19 there was more chances of no complains and challenges, which is reduced during COVID-19. Some of the issues like expired medicines, wrong billing remains almost unchanged, but the challenges like overpriced and unavailability of medicines have relatively increased during COVID-19 pandemic.

FINDINGS

The research is based on study on pre and duringimpact of COVID-19 on Pharmaceutical sector.Following are the findings drawn from theresearch:

Customer Perspective

- There is an increase in the cost beard by the customers during pandemic situation as compared to pre COVID19 period.

- Customers started consulting doctors more during the pandemic and reduced taking medicines without prescriptions.

- Pre COVID-19, the customers preferred to buy pharmaceutical products by visiting the physical pharmacy stores, and sometimes through online portals but very rarely through E-Pharmacy Apps. During COVID-19 situation, customer preferred E-Pharmacy Apps, turned towards online portals and reduced visiting the physical pharmacy stores.

- Customer have started turning more toward branded medicines than generic medicines during COVID-19 pandemic. Generic medicines are preferred by the customers because of its price and availability. Whereas the brand-manufactured medicines are preferred by the customers because of its perceived quality and its brand image.

- There is no major change in buying of prescribed medicine, OTC drugs, and contraceptives during the pandemic situation. But a decrease in purchase of Surgical items and Cosmetics and a major increase in purchase of personal hygiene products was observed during the COVID-19 pandemic situation.

- Some of the issues faced by customer remained almost the same as before COVID-19 pandemic like expired medicines, wrong billing, but the challenges like overpriced and unavailability of medicines have relatively increased during COVID-19 pandemic.

- The awareness of the E-Pharmacy apps has relatively increased during the pandemic situation.

Pharmacist Perspective

- Pre COVID-19 customers preferred to pick up the medicines by visiting the pharmacy stores or through third party, whereas during COVID-19 pandemic customer avoid going to the pharmacy store and get the medicines, but preferred contactless and home deliveries of the medicines.

- During COVID-19 pandemic, the customerspreferred online payment methods like BHIM UPI, Net Banking,

Wallet Payment and card payments rather than cash payment to maintain social distancing norms.

- The timings of the pharmacy store have increased during the COVID-19 situation which influenced the profit of the pharmacy.

- The timings of pharmacy, availability of medicines, availability of manpower and customer demand has majorly affected the profit to the pharmacist in the COVID-19 pandemic.

- The pharmacist has suffered mostly because of the delay in receiving medicines from the supplier, and restricted operational timings. Apart from this Transit damage and increased costs for ensuring safety were also among the problem faced by pharmacist in COVID 19 situation.

RESEARCH LIMITATIONS

This is a cross sectional research based on the perspective of pharmacist and customers only, in this study manufacturer and dealer perspective are not considered. The research was carried out for a limited time period due to time constraint. There are high chances that the perception may vary from person to person and region wise too. This research limits to the India Pharmaceutical Industry, but this research does not carry perspectives from all parts of the country. The reliability of the survey result is hindered due to small sample size. People from whom the data was collected might be reluctant to answer the question and may have bias.The customer perspective limits to the inputs of MIT-WPU School of Management PG students and staff and the pharmacist they know or visited during the pandemic.

PRACTICAL IMPLICATIONS

The nature of present study is single cross sectional.The findings of this research provides a useful comprehensions for researchers, healthcare practitioners, pharmacist and the pharmaceutical manufacturers about the impact of COVID 19 situation on the pharmaceutical industry and the challenges that are being faced, and what needs to be improved for overcoming from this pandemic crisis. The reference of this study can also be taken during the planning and for implementation of the strategies in manufacturing, supply chain, and marketing of the pharmaceutical products and anticipate probable upcoming trends during and even after the pandemic. This research can be also useful in understanding the demand, supply and to some extent buying behavioural patterns of customers from different parts of India which will help in easy segmentation and targeting of the products. This research will also be useful for e-pharmacy apps to understand customer awareness towards their brand and product.

CONCLUSION

This research concludes the overall survey done for the impact of COVID19 on pharmaceutical sector in two perspectives: customer and pharmacists. Both target areas had huge impact in terms of sales and patient treatment. The medicines were being sold overpriced. All the personal hygiene products such as masks, sanitizers, PPE Kits, etc and the essential care items were being sold at higher prices than usual. Also, this pandemic has affected the living and has put a heavy toll in terms of finance in everyone's pockets. It also affected the working hours of the pharmaceutical, availability of manpower, availability of medicines in the pharmacy.

Though Indian pharmaceutical industry is affected due to the COVID-19 pandemic, it holds a huge potential in itself to become one of the leading industries by working on their supply chain management and human resource constraints.

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QUESTIONNAIRE

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